**TRL**

Police fatal road accident reports: phase II

Prepared for Vehicle Standards and Engineering Division and Road Safety Division, Department of the Environment, Transport and the Regions

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Executive Summary

This is the final report on a project conducted by TRL, on behalf of the Department of the Environment, Transport and the Regions (DETR), entitled 'Police Fatal Road Accident Reports: Phase II'.

A previous project had set up a scheme whereby the police would routinely send their fatal road accident reports to TRL when they had finished with them. The present project has continued to collect, sort, catalogue and store the files received at TRL under this arrangement. The files are a very valuable source of information on such subjects as vehicle primary and secondary safety, road safety and accident and injury causation, and data from the files has been used by researchers at TRL investigating these topics.

In addition, a large computer database has been set up, containing much more detailed information than is available from the DETR's national accident database, Stats19. The database contains information on the causation factors leading up to the accident, details of the vehicles involved and the impacts they experienced, and occupant injury data, taken from post mortem reports. A large number of accidents from the collection has been analysed and the data placed in this database.

The development and implementation of validation routines to check the quality of the data in the database has constituted a significant proportion of the effort in the current phase of the project. In addition, the database which had been set up under the previous project has been converted to the later format, involving the recoding of injury and causation details and modifications to other parts of the database.

1 Introduction

Police Fatal Accident Reports are among the most comprehensive of all police reports, since they are prepared with a view to presentation in evidence at the Coroner's Inquest, even where no criminal prosecution is envisaged. At their best, they contain:

The pathologist's post-mortem report, giving details of injuries, blood alcohol concentrations and causes of death.

Photographs of vehicles involved and of the scene of the accident, allowing vehicle damage to be assessed and also giving a clear indication of the nature of the road at the accident site.

Sketch plans, usually to scale, and sometimes showing pre-impact trajectories as well as post-accident locations of vehicles.

Vehicle examiner's report, giving details of pre-existing defects, together with an assessment of whether or not they may have contributed to the accident, and sometimes including reports from forensic experts on specific components.

A detailed reconstruction of the accident by police accident investigators, including calculations of pre-impact speeds and trajectories, based on marks found on the road surface.

The case officer's summary of the circumstances of the accident, the events leading up to it and the damage and injuries sustained, frequently including recommendations as to whether or not any of the people involved should be prosecuted.

The actual statements made by the survivors of the accident and other relevant witnesses.

These files have been used in numerous studies on specific types of accidents over a number of years. They can provide detailed information on the events leading up to an accident, the driver errors and/or vehicle defects which may have contributed to it, and the injuries which resulted in the fatality. This information can be analysed by researchers to provide guidance on road and vehicle safety, with the ultimate aim of reducing the number of casualties arising from road accidents. The files provide a unique source of information for use in such research, containing a wealth of detail at relatively low cost, as compared to the other two sources of data available for accident research. These other sources are:

i The Stats19 database, which is compiled from the information provided by the police on the Stats19 forms which are filled in for every injury road traffic accident. This provides a very large sample size but the level of detail is limited.

ii Special in-depth investigations with a far greater level of detail such as those conducted by the TRL with the cooperation of several police forces and hospitals. However, these are very expensive, and so have to be limited in both geographical area and in the type of vehicles investigated. Usually they concentrate on priority groups such as car occupants.

Police Fatal Accident files represent a half-way house between these two extremes, being far more detailed than Stats19 but far cheaper than the special in-depth studies.

Examples of studies which have, in the past, made use of Police Fatal Accident files include work conducted at TRL on HGV and pedestrian accidents, and several studies conducted by an independent consultant on behalf of the Insurance Institute for Highway Safety in the USA who, after studying accident data collection systems world-wide, concluded that UK Police Fatal Accident files were probably the most detailed, particularly with respect to the routine inclusion of post-mortem data.

In the studies mentioned above, the files were acquired from the police specifically for each individual study, and this involved repeated administrative costs in the initial approaches to the police to request the files, and also direct financial costs, as the police often charged for files requested in this way. These costs were deemed worth sustaining because of the high quality of the information contained in the files. However, given that the police simply destroyed the files when they were no longer considered useful for legal purposes, the possibility was recognised of setting up a national Fatal Accident Monitoring System (as it was dubbed by its proposers) by persuading the police to send the files to some central collection point, rather than to the shredder. The numbers of files which might be made available in this way can be very easily estimated from published national accident statistics, based on the Stats19 database. Table 1 shows the number of fatalities, by year and road user type, in Great Britain from 1985 to 1997, along with the number of accidents (there are approximately 1.1 fatalities per accident on average).

Table 1 Fatal casualties in Great Britain

Year	Peds	P/cycle	TWMV	Car users	All users	Accidents
1985	1789	286	796	2061	5165	4768
1986	1841	271	762	2231	5382	4895
1987	1703	280	723	2206	5125	4694
1988	1753	227	670	2142	5052	4643
1989	1706	294	683	2426	5373	4907
1990	1694	256	659	2371	5217	4748
1991	1496	242	548	2053	4568	4158
1992	1347	204	469	1978	4229	3855
1993	1241	186	427	1760	3814	3470
1994	1124	172	444	1764	3650	3326
1995	1038	213	445	1749	3621	3286
1996	997	203	440	1806	3598	3274
1997	973	183	509	1795	3599	3298

It should be noted that each accident file relates to a complete accident, so the numbers of files received will be governed by the figures in the last column rather than those in the Casualty columns.

Initially, it was thought that the files might be supplied free of charge, since the police would simply be sending files which would have been destroyed anyway to a different destination, and this has proved to be the case. The only cost to the project has been to pay for a courier to collect the files and deliver them to TRL, where they are stored, catalogued, and put to use in accident research.

Although the accidents are, by their very nature, biased towards the severe end of the spectrum, useful conclusions can still be drawn from their analysis, as has been the case in the *ad hoc* studies mentioned above. Phase I of the Fatal File Collection Project succeeded in persuading all police forces in England and Wales to participate in this scheme (*Minton, 2000*), and the current project has maintained this momentum, successfully recovering an estimated 75% of the fatal accidents which occur in England and Wales each year.

A further strand of the Phase I project was the setting up of a very large computer database (the Enhanced Database - EDB) containing detailed information extracted from the files relating to vehicle characteristics and defects, driver factors, occupant and pedestrian characteristics and injury details taken from the post-mortem reports. Significant changes to the format of this database have been made under the present project, reducing the amount of detail on the vehicles involved in the accident, but improving the coding of injury data and incorporating a much improved coding system for accident causation.

2 The databases

2.1 The paper file database

This consists of the actual hard-copy Police Fatal Accident files, which are stored under secure conditions at TRL. When the files arrive at TRL, they go through a standard booking-in and sorting procedure, and are then catalogued and stored. These hard-copy files constitute one of the primary outputs of this project. Some of the files are as little as twelve months old when received, and they are kept until they are ten years old. The Phase II project, on which this report is based, ended in June 1999, so only files dating back to 1989 are included in the tables in subsequent chapters. Files which are more than ten years old are, if required, returned to the originating police force; otherwise they are shredded. The files in the collection are available for use by TRL researchers, who can enjoy considerable savings in cost and inconvenience compared with requesting the files individually from the police. A number of researchers have already made use of this facility (see Section 4.3.), and it is anticipated that this use will grow as the presence of the resource becomes more widely known, and as new projects making use of the files, which would not otherwise have been feasible, begin to be implemented.

2.1.1 File retrieval

Sometimes, the police receive requests from solicitors for copies of files for use in civil litigation, and this can happen several years after the accident, possibly even after the police would normally have destroyed the file. A file retrieval service is therefore operated on request for the police, and the efficient operation of this service is very important in terms of maintaining good relations. Accordingly, every effort is made to return files on the day they are requested. Feedback from the police indicates that they are very pleased with the service we provide in this respect - it reduces their file storage requirements, but they can still be confident of retrieving a file whenever they need it.

2.2 The management database

To assist in keeping track of the files, a computer database has been set up on a PC which contains such details as the TRL reference number, the corresponding Stats19 reference number, the police force, division and year, and an assessment of the quality of the information in each file, in terms of whether or not the file contains the eight items of information specified previously. This database can be queried to give summary information on the current state of the file collection (see Tables 2, 3 and 4 in Chapter 4).

2.3 The Stats19 link

A modified Stats19 database has been set up at TRL, and this contains details of the TRL reference number and the quality of information data from the Management database. Software has been written which allows the data to be transferred electronically from the Management database, held on a PC, to the PRIME computer, which holds the Stats19 database. This link with Stats19 allows a structured means of access to the hard-copy files held at TRL, whereby researchers can select particular types of accidents through Stats19, and can then be supplied with a list of those files in the TRL collection which satisfy their selection criteria, together with an assessment of the quality of the files. This cross-linking of the files to Stats19 forms another primary output of this project.

2.4 The Intermediate-level Database (IDB)

The third primary output of the project was to create a detailed database of the information to be found in the files, containing well over 120 fields of data in excess of that held on Stats19. The IDB is considered in more detail in the next chapter.

3 The Intermediate-level Database

3.1 Introduction

As a result of the experience gained in setting up the Enhanced Database (EDB) under Phase I, it was felt that the extraction of such a large amount of detail from the files was unjustifiably costly, due to the length of time involved in searching through each file for the required information. Some items of information, for example, mechanical details of the vehicles, required very detailed reading of the file, and sometimes even the use of reference sources to establish the configuration involved. In other cases, for instance, vehicle defects, time was spent determining the exact nature of the defect, rather than merely flagging its presence.

In other respects, however, the EDB was felt to contain too little data. During the course of Phase I, over 1,000 of the fatal accident reports were used by a team at TRL

specifically to study accident causation. Causation factors had been included in the EDB coding system in a limited way, but this other study used a far superior coding system in respect of these factors, and it was felt that inclusion of this system within the overall EDB would be very beneficial.

The third, and final, problem with the EDB concerned the coding of injuries from the post-mortem reports. The use of non-medically-trained personnel for coding meant that injuries to particular body areas could only be flagged, with no indication of their severity being possible. Body areas were specified down to the level of major organs and skeletal sub-assemblies (eg ribs/clavicles/sternum, lower leg/foot) in an attempt to make the data as useful as possible, but it was felt that, in the absence of an AIS code to give an objective measure of the severity of each injury, the usefulness of the data was seriously compromised.

In view of these problems, it was decided that, for the Phase II project, an Intermediate level Database (IDB) should be set up, involving a considerably reduced amount of technical information relating to the vehicles, but including the improved causation coding system, which would replace those sections of the EDB which had covered this aspect. In addition, a dedicated software package, Tricode, was acquired, which could effect the translation of a long-hand description of an injury into an AIS code. Although such computer-based systems are sometimes frowned on by the medical establishment, it was felt that this would be a vast improvement on the Phase I method, and represented the best that could be achieved, short of actually employing a doctor.

A pilot study was set up very early in the current project, to accurately assess the coding costs under the new regime. On the basis of this, funding was increased part-way through the project, to allow about 2,200 accidents per year to be coded, this being equal to the number of files expected to be recovered from the police annually.

In addition, the 1,026 accidents in the old Enhanced Database have been revisited, and the post-mortem reports have been recoded using the new system, and the old databases restructured to conform to the new format. All the accidents in this database had had causation variables coded by another department at TRL, using a coding system which eventually evolved into that used for the IDB. The resulting database was acquired from this other department, and the old codes were "translated" to match the current system.

3.2 Contents of the Intermediate-level Database

The Intermediate-level Fatal Accident Database (IDB) comprises a group of eleven computer database files, held on a PC, containing information relating to accidents in the hard-copy file collection. Three of these database files contain all the Stats19 data for each accident, transferred from TRL's PRIME computer, while seven contain information extracted from the files themselves. The eleventh database file is referred to as the VRM file, and is described more fully below. The rationale behind acquiring the Stats19 data was so that relevant information for use in analyses would not be split between two

locations. The Stats19 data could also be used to validate some of the IDB data.

All the databases and associated software for the IDB have been set up using the Foxpro for Windows database management system on PCs.

As well as the Stats19 files, TRL also holds data acquired from the Driver and Vehicle Licencing Centre records at Swansea. This data is matched to Stats19 by reference to the vehicle registration marks of the vehicles involved in an accident, and is hence referred to as the VRM data. This VRM file contains information on, *inter alia*, the vehicle make/model, body type, colour, propulsion (petrol/diesel/steam etc), number of seats (PSVs only), engine capacity, ownership and type of transmission. This file thus constitutes a very valuable source of information on vehicle parameters.

3.3 Structure of the Intermediate-level Database

The IDB, being derived from the earlier Enhanced Database, retains the same basic structure, which was itself derived from Stats19. The data are thus organised into a hierarchical structure at Accident, Vehicle, Casualty and Injury levels.

The number of vehicles involved in an accident can be very large in multiple accidents on motorways etc and coding all of these vehicles would require a considerable amount of time. It has therefore been decided that, in such cases, only those vehicles which are directly involved with a vehicle containing a fatality should be included in the IDB. Thus the number of vehicle records in the IDB may occasionally be less than the number on Stats19 for a given accident. Conversely, for Occupants/Casualties, Stats19 only covers people who were injured in the accident, whereas the IDB covers uninjured people as well, since it may be of interest to find out why they were uninjured. Thus, the number of Occupant/Casualty records in the IDB will frequently be greater than the number on Stats19 for a given accident.

3.3.1 Accident level

The IDB Accident file contains global details relating to the accident, such as number of vehicles involved and the nature of the location where the accident took place. It is fairly small, and contains only one completely new field compared with Stats19 - 'Conflicts'. The possible conflicts considered are listed in Appendix A, along with the coding forms themselves. Also at Accident level is the Causation file, containing details of the Precipitating Factor (ie the immediate cause of the accident, such as failing to stop, loss of control of vehicle etc) and up to four Causation Factors, intended to indicate why the Precipitating Factor occurred (eg alcohol impairment, carelessness, excess speed etc). The form used is similar to the one currently being used by some police forces to record causation data for all injury accidents.

3.3.2 Vehicle level

The IDB Vehicle file is much larger, with 61 fields in all, covering vehicle and impact details, and vehicle defects. A

handful of these fields cover aspects of the vehicle which are already on Stats19, but do so in much greater detail. The first section of the Vehicle form is devoted to technical details relating to the vehicle in question, such as age, construction, presence of accessories and fittings which have a bearing on safety etc. The second section covers accident details which relate to the particular vehicle in question, including the speeds involved and a considerable depth of detail on the impact(s) suffered. A section on vehicle defects follows, usually taking its information from the vehicle examiner's statement in the file. It covers safety-related defects in tyres, brakes, steering and suspension components, and some more general failures and indicators of the condition of the vehicle.

Two further files, occupying the same hierarchical level as the Vehicle file, contain details peculiar to HGVs and details of Trailer Defects respectively. These contain a further 19 fields, but are only completed in appropriate cases.

3.3.3 Occupant/casualty level

The Occupant/Casualty File contains 37 fields, and is completed for every involved person, whether injured or not. It therefore contains several fields which are common to Stats19, but which are necessary because uninjured vehicle occupants are not included on Stats19, whereas they are included in the IDB. In some of these fields (eg Casualty class) the coding is more highly differentiated than in Stats19, so they still provide useful extra information even for people whose basic details are already on Stats19. The 'Age' field, on the other hand, has had to be supplemented by an 'Approx Age' field because the actual age may not be known for the non-Stats19 people (the 'Age' field in Stats19 should always be completed, even if only with the police officer's estimate of the casualty's age).

Subsequent sections of the form cover safety equipment, seating position, other occupants/ luggage and ejection. A brief section on the injuries sustained, if any, is intended to indicate the major injuries suffered by non-fatal casualties (where known), whereas for fatal casualties, it is intended to indicate the cause of death, as given in the post-mortem report.

Three final fields give information on the source of the injury information (primarily for use in validation checking), hospitalisation details and a subjective assessment of the Injury Agent - ie what it was that was likely to have caused the major injury to the occupant. In most cases, it is impossible to make a definitive assessment of this - it would necessitate a detailed examination of the vehicle for contact points, and the police rarely do this. However, a subjective assessment can usually be made, and any trends which may be noted in the overall data may provide the impetus for more detailed studies to check on the validity of these assessments.

3.3.4 Injury level

This level does not exist in Stats19. The Injury database is built up from the output of the Tricode program, and contains details of all the injuries coded for each fatality where a post-mortem report was available (excluding minor cuts and bruises). For each injury, the database contains the ICD9 code, the AIS90 injury code, the AIS90 injury severity, the ISS body region (which is slightly different from the AIS body region, though the latter can still be obtained from the full AIS code), and the verbal description of the injury which was originally typed in, and from which the Tricode program generated the injury codes. Tricode also generates the ISS score for each person coded but, since this is basically an occupant-level variable, the software which has been written to convert the Tricode output into a Foxpro database automatically inserts the ISS score into the relevant record in the Occupant/Casualty file at the same time as it builds the Injury database. It should be noted that, although Tricode can be used to convert injury descriptions into AIS and ICD codes, it has no facility for recording the cause of death of the victim, as given by the pathologist. This must still be manually inserted into the relevant injury fields on the Occupant/Casualty form.

3.3.5 Glossary

A glossary of the terms used in the forms has been written to provide guidance on completing the forms and to attempt to deal with some of the commoner coding dilemmas. This allows the data to be coded consistently by relative newcomers to the project.

3.3.6 Retrieval, analysis and validation software

The validation routines provide for checking the newly entered data in an attempt to identify mistakes either in the initial coding onto the forms or in keying the data into the computer. At the simplest level, this involves checks on the allowed ranges of coded variables so that, for example, in the IDB Occupant/Casualty file, the value in the 'PSV Passenger' field cannot exceed 4 (though 9 = Not Known is also allowed). The next stage involves logical checks between different fields within a database. Looking again, for example, at the IDB Occupant/Casualty file, an occupant who is described under 'Casualty Class' as a car/ large vehicle driver should not have an entry in the 'PSV Passenger' field. The third level of validation checks compares field values in one database with related values in another, to ensure compatibility. Thus, the car/large vehicle driver referred to above should be sitting in the front offside seat, unless his vehicle is recorded as being left-hand-drive. It can be seen that some of these logical checks become quite complicated. Particularly important checks are that any given vehicle in the Stats19 Vehicle file must correspond in its vehicle reference number, vehicle type and sex and age of driver with the same vehicle in the IDB Vehicle and Occupant/Casualty files. Likewise, each occupant in the Stats19 Casualty file must have the same occupant reference number, sex, age and casualty class as the corresponding victim in the IDB Occupant/Casualty file.

Comprehensive documentation has been written to provide guidance on the use of the validation routines,

consisting of a general description of the programme, the specifications of the logic for each check, and guidance on the interpretation of the output of the programme.

The retrieval/analysis routines provide a user-friendly interface through which to extract useful statistics from the database files. Any number of database files may be combined in any individual analysis, with automatic provision of the correct statistical base for the analysis, though the user can override the automatic selection of the statistical base, if appropriate.

The system provides facilities for:

- Querying the databases by selecting records for display which satisfy certain criteria. Certain frequently used or very complicated queries are available in pre-fabricated form, or the user can construct his/her own.

- Displaying frequencies of occurrence of particular data values, either with or without previous application of selection criteria.

- Displaying cross-tabulation data - ie the number of occurrences of specific pairs of values in two different data fields. The data fields do not have to be in the same database. The results may be displayed either graphically or in a table.

- Browsing through the database files, again either with or without the previous application of selection criteria. A facility is also provided for browsing through multiple database files on the same screen.

- A number of on-line help facilities and file management routines are also provided.

The Frequency Tabulation facility has been used to produce the frequencies in Appendix B, which are intended to give a flavour of what the database contains.

3.4 Practical details

To keep the size of the working database to manageable proportions during data entry, the coding is carried out in batches of approximately 500 accidents, selected by their TRL reference numbers. These reference numbers are assigned during the initial file processing and cataloguing operation, and they are assigned sequentially as the files are processed, so a delivery of files from one particular police force will tend to be assigned a set of sequential reference numbers. The largest number of accidents from the same year and police force to be assigned sequential reference numbers under this system so far is about 140 accidents, with the average being about 40-50 accidents. Coding in batches of 500 thus ensures a reasonable spread of police forces and years in each coding batch. In practice, about 1-2% of the accidents in each batch cannot be coded, because the file has been returned to the police, or the file contains insufficient information, or because the death was a result of natural causes or suicide (such cases should not be included in Stats19, but sometimes are, in error). Once a batch has been completed, the databases can, if desired, be appended to those relating to previously completed batches, so that all the data is in one database for analysis.

3.4.1 Stats19 data acquisition

The Stats19 and VRM data for a particular batch of 500 accidents are downloaded from TRL's PRIME computer as an ASCII file. Software has been written to read the data into the three IDB Stats19 database files, and into the VRM file.

The data acquisition software includes a facility for printing a brief summary of the Stats19 data for each accident. This is to ensure that the numbers assigned to vehicles and occupants when coding the IDB forms tie in with those assigned in the Stats19 database. The summary also flags whether or not a particular vehicle appears in the VRM file, so that its details can be looked up on data sheets derived from the VRM database, which are also printed for reference.

3.4.2 Coding

Forms have been generated on which to code the data from the hard copy files. This was felt to be preferable to coding the data directly into the computer, since it automatically gives a hard copy of the coding information. In addition, this system makes it easier, when filling in one section of data, to refer to another, already completed, section, and it allows for a quick check on the accuracy of the data before, or even during, the keying-in process. Copies of the forms are appended to this report (Appendix A).

3.4.3 Conversion of the EDB

Since the IDB was derived from the EDB primarily by reducing the amount of information it contained, a large proportion of the conversion process simply involved deleting redundant data fields from the EDB. However, the IDB does contain some information which the EDB did not - mainly the dedicated Causation file, and the Injury file, which is based on the Tricode analysis of the post-mortems, but also some small items in the Casualty file, such as 'Injury Agent' (see Appendix A). Producing a new Injury file necessitated going back through all the hard-copy files on which the EDB was based, and coding the injury data, via Tricode, at the same time adding the odd items such as 'Injury Agent' to the Casualty file.

Causation factors for most of the accidents in the EDB were coded for another project at TRL when the EDB was being set up, and this data was acquired. However, although the coding system used for this previous database was similar to that used for the IDB (it was, in fact, a precursor of the present system), it differed in some important respects. This meant that, although many of the codes could be converted electronically, some codes had no equivalent in the current system, and a significant number of files had to be recoded from scratch. It was very fortunate that one of the present coders had also worked on coding the previous causation data, and remembered some of the anomalies and coding conventions which had been adopted at the time. Without this experience, conversion of the causation data would have been very much more difficult and time-consuming.

4 Current state of the project

4.1 The paper file database

Since the process of file collection is a continuous one, the figures given in this section represent a snapshot of the situation at the end of the Phase II project (June 1999). All police forces in England and Wales, with the exception of the City of London Police are currently cooperating with the project and sending files on a more or less regular basis. The City of London Police were willing to cooperate when they were approached, but the number of fatal accidents occurring in the Square Mile is so small that it was not considered worthwhile to set up a system for collection.

It is intended to keep the files until they are ten years old, after which they will either be returned to the originating police force or shredded. Although no pre-1989 files have actually been disposed of yet, any files which are received for these years are no longer processed, but held in storage. Accordingly, all the summary statistics which are tabulated in this chapter refer to accidents occurring in 1989 or later. The total number of these files processed at the time of writing is 13,177 and all of these have been cross-referenced to Stats19.

Table 2 shows how the numbers of files received are distributed with respect to time, compared with the total numbers of accidents in England and Wales; the very small number occurring in the City of London have been excluded from these totals.

Table 2 Distribution of files on management database by year

Year	Accs. occurring	Files received	% of total accs.
1989	4412	2000	45.3
1990	4318	2796	64.8
1991	3778	2737	72.4
1992	3432	2311	67.3
1993	3111	1601	51.5
1994	3007	1159	38.5
1995	2926	483	16.5
1996	2958	90	3.0

The form of the distribution of files received is due to the varying retention periods adopted by the police. Earlier in the project, the early years (1985 to 1988) were characterised by low numbers because many police forces had already destroyed files of this age. Those present in the collection were from forces with longer retention periods or from those who were less efficient in clearing out old files which had passed their destruction date. As time has passed, these early years have dropped out of Table 2, and the distribution has matured. The peak of the distribution is now approaching the 75% mark, which has been the predicted steady state level of file recovery since very early in the Phase I project. Low numbers in the later years in Table 2 are attributable to the fact that relatively few forces have very short retention periods.

4.1.1 Recovery rates

A more detailed breakdown of the file distribution, by police force and year, appears in Table 3.

As mentioned above, it must be borne in mind that different police forces operate different policies regarding the length of time they retain their files. Gwent, for example, has a very long retention period, so that we have good recovery of files going back as far as 1989, but they have not yet directly released files from 1992 or later (the five files in the table were acquired from another project at TRL). Greater Manchester, on the other hand, had already destroyed all pre-1992 files before the Phase I project began; again, the pre-1992 files recorded in Table 3 were acquired from another TRL project. A number of other police forces (for example, Cleveland, Essex, Leicestershire) also show this pattern of low recovery rates in 1989 or 1990, which represent acquired accidents only, but very good recovery rates (in most cases well over 75%, and sometimes reaching 100%) for the files which they have sent direct.

Some forces (Cambridgeshire, Gloucestershire, South Yorkshire, Suffolk etc) do not show this pattern because the years 1989-90 coincide with the ages of files which they have released. In most of these cases, the file recovery rate is well over 75% in these years. The Metropolitan files are another exception to this rule. Metropolitan Police files have never been collected by TRL previously, so the 1989 files in the collection have been sent direct. However, Met. files are reviewed after five years, and only the more severe cases, usually involving prison sentences for offending drivers, are retained. The first consignment of Metropolitan files coincided with the review date for 1990 files, so all files from this year were forwarded to TRL, along with any files from previous years which had been retained after this filtering process. This means that nearly all pre-1990 Metropolitan files relate to cases where the driver was prosecuted for causing Death by Reckless Driving and was sent to prison. This will have to be borne in mind in any analysis that is carried out in future. Files from 1991 and subsequent years will be sent as they reach their review dates, so we should achieve very good recovery rates, and a normal distribution of accidents.

It is difficult to calculate a meaningful average recovery rate for any particular police force, because the files are frequently not released in 'year blocks', but in dribs and drabs, covering several years. For example, Cumbria normally gives an excellent recovery rate, but they have not yet released all their 1994 files, and happen to have released a few 1995 files early. If these years were included in an average, they would give a distorted picture - it is fully expected that the recovery rates for 1994 and 95 will eventually match those of earlier years. So the final column in Table 3 gives the median recovery rate for each police force.

4.1.2 Quality of the files

Table 4 gives details of the proportion of files from each county which contain post-mortems, vehicle photographs, scene photographs etc. Identities have been coded and presented in a random order. The averages over all files in the collection are shown at the bottom. A fuller discussion of the content this type of file can be found in *Minton, 2000.*

Table 3 Accidents in database and as a proportion of Stats19 by county and year

County	Number of files received (percentage of Stats19)								Median percent
	1989	1990	1991	1992	1993	1994	1995	1996	
Avon	101 (75)	54 (48)	71 (48)	6 (0.6)	1 (1.3)				48
Bedfordshire	14 (26)	41 (87)	42 (79)	28 (62)	37 (84)	35 (95)			82
Cambridgeshire	73 (90)	78 (91)	73 (99)	50 (79)	22 (37)	16 (24)			85
Cheshire	12 (13)	35 (40)	73 (87)	54 (74)	56 (77)	50 (74)	53 (72)	46 (65)	73
Cleveland	1 (2.6)	42 (100)	40 (100)	24 (100)	25 (93)	32 (100)			100
Cumbria	16 (29)	64 (93)	63 (95)	53 (90)	49 (92)	33 (77)	4 (8)		90
Derbyshire	97 (92)	69 (91)	50 (79)						91
Devon & Cornwall	114 (88)	86 (69)	51 (51)	44 (48)	20 (27)	21 (31)			50
Dorset	75 (91)	50 (98)	51 (98)	46 (98)	46 (98)	39 (93)			98
Durham	38 (72)	46 (70)	46 (92)	38 (95)	28 (78)	25 (74)			76
Dyfed-Powes	11 (28)	13 (25)	28 (60)	37 (74)	30 (83)	19 (40)			50
Essex	22 (17)	118 (93)	76 (84)	75 (99)	74 (94)	77 (96)			94
Gloucestershire	56 (90)	68 (91)	51 (98)	19 (44)					91
Greater Manchester			22 (10)	143 (93)	131 (99)	86 (80)	79 (72)	29 (27)	76
Gwent	26 (100)	32 (100)	33 (100)	5 (17)					100
Hampshire	138 (95)	152 (97)	100 (96)	83 (82)	99 (91)	68 (86)	59 (80)		91
Hertfordshire	66 (99)	62 (90)	34 (51)	6 (12)					70
Humberside	21 (28)	54 (86)	56 (88)	67 (86)	46 (75)	4 (8)			80
Kent	5 (3.6)	80 (66)	109 (93)	86 (75)	56 (67)	23 (29)	7 (8.6)		66
Lancashire	57 (49)	105 (83)	96 (94)	104 (95)					89
Leicestershire	18 (20)	88 (95)	80 (98)	75 (93)	74 (97)	62 (87)	64 (93)		93
Lincolnshire	24 (30)	60 (64)	52 (80)	49 (79)	40 (62)	15 (21)	4 (5.3)		62
Metropolitan	68 (14)	348 (80)	305 (80)	248 (75)					77
Merseyside	18 (19)	20 (27)	53 (60)	44 (60)	36 (56)	43 (58)	15 (25)	3 (5.1)	41
Norfolk	28 (30)	17 (20)	49 (58)	75 (79)	70 (83)	53 (90)	34 (51)		58
Northants	90 (96)	74 (96)	47 (89)	51 (88)	35 (85)	10 (29)			89
Northumbria	39 (38)	38 (31)	76 (71)	40 (51)					45
North Wales	49 (84)	54 (83)	59 (94)	35 (83)	49 (96)	33 (77)			84
North Yorkshire	33 (29)	61 (66)	61 (77)	54 (76)	55 (67)	62 (85)			72
Nottinghamshire	34 (36)	66 (63)	97 (94)	66 (87)	56 (82)	40 (52)			73
South Wales	5 (5.6)	10 (13)	6 (10)	8 (10)					10
South Yorkshire	73 (96)	85 (98)	86 (98)	78 (91)	73 (92)				96
Staffordshire	85 (94)	50 (54)	49 (74)	12 (17)	3 (4.8)	1 (1.1)			35
Suffolk	56 (92)	47 (82)	44 (88)	32 (100)	40 (91)	40 (93)	31 (97)	11 (21)	90
Surrey	13 (16)	54 (84)	31 (60)	33 (62)	6 (15)	11 (22)			41
Sussex	78 (58)	83 (58)	70 (72)	53 (59)	61 (60)	2 (2.3)		1 (1.0)	58
Thames Valley	60 (33)	95 (57)	124 (87)	136 (89)	95 (74)	89 (68)	54 (42)		68
Warwickshire	72 (96)	45 (92)	50 (96)	47 (98)					96
West Mercia	112 (90)	123 (97)	81 (95)	86 (84)	74 (77)	63 (66)	43 (64)		84
West Midlands	57 (34)	87 (52)	98 (61)	76 (56)	42 (35)	21 (19)	2 (2.3)		35
West Yorkshire	29 (17)	26 (12)	43 (32)	38 (28)	42 (33)	39 (35)	8 (6.7)		28
Wiltshire	16 (31)	16 (24)	11 (21)	7 (15)	30 (79)	47 (82)	26 (48)		31

Table 4 Quality of files in database by county

				Percentage of files containing				

County	P-mort	V-Photo	S-Photo	Plan	S'ment	Sum-mary	Acc inv	V-Exam
A1	95	60	61	95	99	86	38	94
A2	77	74	76	92	99	75	88	91
A3	71	93	94	94	100	83	88	93
A4	95	83	84	95	100	82	94	84
A5	24	47	49	96	100	97	92	86
A6	7	15	15	69	86	65	40	59
A7	83	86	86	89	100	96	82	92
A8	58	22	22	58	98	87	87	82
A9	91	58	60	85	98	96	94	94
B1	87	77	78	50	99	95	95	93
B2	25	25	25	85	95	87	30	85
B3	9	94	96	97	100	85	89	90
B4	97	73	74	92	100	99	96	75
B5	91	64	67	82	98	92	96	92
B6	55	26	27	85	99	89	81	74
B7	8	72	76	97	99	89	74	92
B8	15	5	6	86	97	82	64	66
B9	26	28	25	71	99	51	57	78
C1	51	16	14	86	96	73	88	80
C2	89	87	89	97	100	88	49	94
C3	67	58	57	86	99	91	97	84
C4	70	22	26	97	99	99	71	96
C5	39	57	57	93	99	63	77	91
C6	38	44	46	76	98	74	76	44
C7	17	42	37	93	99	85	86	92
C8	52	38	40	92	97	96	77	69
C9	62	65	68	90	100	96	85	97
D1	13	50	52	71	98	87	54	71
D2	91	79	81	93	100	97	79	83
D3	2	65	66	98	99	57	51	82
D4	85	76	78	95	100	95	98	91
D5	20	92	92	92	100	95	97	92
D6	55	28	28	66	97	72	72	76
D7	85	78	85	92	99	89	54	80
D8	11	72	73	93	100	91	86	84
D9	78	66	67	96	100	80	74	94
E1	92	1	0	86	100	99	81	91
E2	87	67	67	90	99	83	84	94
E3	82	66	71	92	100	91	60	85
E4	97	91	93	98	100	99	30	96
E5	17	53	53	96	99	98	12	91
E6	72	61	69	85	97	98	89	86
Overall	57	59	60	87	99	87	76	85

4.2 The Intermediate-level Database

The structure of the Intermediate-level Database has been described earlier, as has the batch method of coding. Ten batches of approximately 500 accidents each have been completed and validated during the course of the current Phase of the project. One of these batches contained a number of pre-1990 Metropolitan Police files. As mentioned previously (Section 4.1.1), these files had been pre-selected by the Met. before they began supplying files to this project, and they consisted of very serious cases, usually involving prosecution for Death by Reckless Driving, with a prison sentence being imposed on the offending driver. It was felt that, because these accidents are not representative of fatal accidents in general, they should not be included in the database, and they were therefore not coded.

The total number of accidents in the IDB at the end of the current phase of the project is 4,713. Appendix B gives a frequency tabulation based on the IDB, to give an idea of the contents. Table 5 shows the distribution of IDB and EDB accidents by year of accident.

Table 5 Accidents coded (IDB and EDB)

Year	Accidents occurring (England &Wales)	IDB	EDB	Total coded	Accidents coded as % of accidents occurring
1985	4149	0	2	2	0.0
1986	4357	23	10	33	0.8
1987	4174	34	4	38	0.9
1988	4153	62	44	106	2.6
1989	4412	214	191	405	9.2
1990	4318	715	389	1104	25.6
1991	3778	946	217	1163	30.8
1992	3432	1204	120	1324	38.6
1993	3111	995	49	1044	33.6
1994	3007	412	0	412	13.7
1995	2926	108	0	108	3.7
Totals	41817	4713	1026	5739	13.7

The IDB and EDB distributions peak at different times because the EDB was coded in 1995-96, and so was based on accidents which were included in the file collection at that time. The IDB, on the other hand, was coded over the period 1996-99. Both databases also contain some pre-1989 accidents, which were legitimately included at the time of coding, but are not now included in Tables 2, 3 and 4. From part-way through the Phase II project (which this report refers to), and continuing in the Phase III project (which began in July 1999), the aim has been to code all the accidents we receive from the police. In time, therefore, the percentages in the last column will approach the percentage recovery rates seen in Table 2 (ie the mid-70s percent).

Although the converted EDB is now available for use, one important proviso must be borne in mind when analysing this database - the project for which the accidents in the EDB were selected was designed to study accidents where novel in-car technology may have helped to avert the accident. The project was partly funded by a prominent car manufacturer, and it was stipulated that all accidents studied should involve at least one car, less than five years old at that time (1995). The database will therefore not contain any single-vehicle HGV/PSV/2-wheeler etc accidents, nor any accidents where pedestrians were struck by any of these other vehicles.

4.3 Uses of the file collection and databases

The following is a list of the major uses of the file collection and databases during the course of the project.

HGVs and PSVs

The Fatal File Project collaborates with several other projects in TRL's Safety & Environment Department, investigating accidents involving HGVs and PSVs, resulting in cost savings for these other projects.

Helmet use by motor-cyclists
Some analysis has been carried out for the Transportation Department at TRL relating to the use of helmets by motor-cyclists.

Speeding
Also for the Transportation Department, two sets of analysis have been carried out relating to the speed at which vehicles were travelling prior to the accident, relative to the prevailing speed limit, and including details of junction type, whether or not the junction was controlled by traffic lights, and vehicle type. An assessment of the reliability of the speed data was also possible, based on the 'Source of Speed Estimate' field which is included in the database.

Seat belt wearing rates and loading by rear seat occupants
One of the customers for this project requested some analysis relating to these factors, including examination of some of the hard-copy files to determine whether loading by rear seat occupants was likely to have been a cause of increased injury severity in the corresponding front seat occupants (this information is not available in the Databases). This then formed the basis of work by an advertising agency on behalf of DETR, to mount an advertising campaign to encourage belt use amongst rear seat occupants.

Drinking and driving
More advertising campaign work involved the use of the files, in conjunction with TRL's supply of crashed cars, to reconstruct realistic accidents for the Christmas 1998 drink/drive campaign.

Motor-cycle accidents
Photographic material from some of the files has been supplied to Northamptonshire police for use in an education campaign to raise awareness of road safety issues amongst young motor-cyclists.

Distraction
This work is funded as an integral part of the main project. The primary concern is to find out whether the introduction of novel technology, such as route-guidance systems, mobile phones etc may have an adverse effect on road safety by distracting drivers at critical moments. Suitable accidents are identified via the Causation data in the IDB, and case summaries are then prepared from the hard-copy files. An article based on this material is to be published shortly (*Stevens, Minton*)

Bicycles on buses
Analysis of impact speeds and configurations in bus/ pedestrian accidents has been carried out, again for DETR, using a combination of the IDB and the hard-copy files. This was to provide baseline data for input into mathematical modelling and laboratory testing relating to a proposal to fit cycle racks to the fronts of buses.

Child injuries
The hard-copy files have been used as part of a DETR project, looking at serious injuries to child occupants of cars. Although the files in the collection relate only to fatal accidents, this project was successfully able to use them to study surviving, but seriously injured, children.

Agricultural vehicles, flashing beacons
The hard-copy files have also been used in DETR projects relating to agricultural vehicles and to vehicles displaying flashing beacons. The latter are not actually identified either in Stats19 or in the IDB, but the coders, while studying the files for one of the coding batches, were able to make a note of those accidents they came across which satisfied the required criteria.

Pedestrian accidents
Following an enquiry from the police to the Accident Investigation Section at TRL regarding injuries to pedestrians, as part of an investigation into a pedestrian who died in mysterious circumstances, useful information on the injuries typically suffered by pedestrians was obtained from the IDB and passed on to the police.

Fires, rear seat occupants and trends in fatal accidents:
A long-term project being funded by VSE Division of DETR used the IDB and other data sources to provide information on these areas (*Minton R, et al., 1999*).

5 Conclusions

1 TRL holds a unique resource consisting of some 13,200 Police Fatal Accident Reports, covering the whole of England and Wales, for the eight years 1989 to 1996.

2 The rate of growth of the database is slowing down, as it approaches the steady state, in which the number of new files received will balance the number of files over ten years old which are disposed of annually. It is anticipated that the size of the database may eventually level out at about 16,000 files, covering a rolling seven or eight year period.

3 A computerised Management Database contains details of the identification and origin of each file, together with a simple assessment of the quality of the information each contains.

4 Information from the Management Database, including the file quality assessment, is also fed into a modified Stats19 Database, thus cross-referencing the Stats19 number of the accident with the TRL reference number.

5 The paper files are available for use by TRL researchers working on accident research, and they may be accessed via the modified Stats19 database, allowing easy selection of those files which may be of interest for any specific analysis. In addition, the inclusion of the information on the quality of the files in this database allows researchers the option to select only those files which are fairly complete.

6 The Intermediate-level Database (IDB), which was derived from the earlier Enhanced Database (EDB), set up under the Phase I project, contains over 120 data fields in excess of those held on Stats19. A retrieval and analysis system for use with this database gives a user-friendly interface for extracting and analysing the information it contains. This database contains details relating to some 4,700 accidents. In addition, the earlier EDB has been converted to IDB format, and contains over 1,000 accidents. A suite of validation routines has been developed which allows for comprehensive error checking of the database.

7 Potentially one of the most powerful features of the IDB is the data on injuries and causes of death, taken from the post-mortem reports, and including AIS injury codes, giving far more detail than the fatal/serious/slight injury severity rating in Stats19.

8 The IDB contains a large range of information that is easily and quickly accessed. However, a useful feature of this combination of hard-copy and computer databases is that the paper records can be consulted where appropriate to give a level of detail on particular cases of interest which it would be impractical to include in a conventional computerised accident database. The time involved in reading these records depends on the complexity of the accident.

9 Use of the file collection and databases is growing, as their existence becomes more widely known, and as projects which would not be feasible in the absence of this resource begin to be implemented.

6 References

Minton R, Okello J and Savage D (1999). *An analysis of fatal accidents involving pedestrians, pedal cyclists, ejected occupants and car rear seat occupants*. Project Report PR/SE/533/99. (*Unpublished report available on direct personal application only*)

Minton R (2000). *A new accident database, based on police fatal road accident reports*. TRL Report TRL258. TRL Limited, Crowthorne.

Stevens A and Minton R. *In-vehicle distraction and fatal accidents in England and Wales*. Acc. Anal. & Prev. *(In preparation)*.

Accident Causation Coding Pilot

WHAT WENT WRONG? (Precipitating Factors)

FAILURES OF DRIVER or RIDER	MANOEUVRES
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 Loss of control of vehicle	9 Swerved to avoid object in carriageway 10 Sudden braking 11 Poor turn/manoeuvre 12 Poor overtaking 13 Drove wrong way (e.g. 1-way street) 14 Opening door carelessly
FAILURES OF PEDESTRIAN or PASSENGER 7 Pedestrian/pedal cyclist entered carriageway without due care (driver/rider not to blame) 8 Passenger fell in or near PSV	15 OTHER (please supply details)

WHY? (Causation Factors)

PERSONAL DETAILS	VEHICLE DEFECTS
1 Impairment alcohol 2 drugs 3 fatigue 4 illness	28 Tyres wrong pressure 29 deflation before impact 30 worn/insufficient tread
5 Distraction stress/emotional state of mind 6 physical in/on vehicle 7 physical outside vehicle	31 Defective lights or signals 32 Defective brakes 33 OTHER (please supply details)
8 Behaviour panic 9 careless/thoughtless/reckless 10 nervous/uncertain 11 in a hurry	**LOCAL CONDITIONS** 34 Site details poor road surface 35 poor/no street lighting 36 inadequate signing 37 steep hill 38 narrow road 39 bend/winding road 40 roadworks
12 Failure to judge other person's path or speed 13 Disability 14 Failed to look 15 Looked but did not see 16 Inattention 17 Person hit wore dark or inconspicuous clothing 18 OTHER (please supply details)	41 Slippery road 42 High winds 43 Earlier accident 44 OTHER (please supply details)
PEDESTRIAN DETAILS 19 Crossed from behind parked vehicle etc. 20 Ignored lights at crossing	**OBSCURATION** 45 View windows obscured 46 glare from sun 47 glare from headlights
DRIVER DETAILS 21 Excessive Speed 22 Following too close	48 Surroundings bend/winding road 49 stationary or parked vehicle 50 moving vehicle 51 buildings, fences, vegetation etc.
23 Inexperience of driving 24 of vehicle	52 Weather (e.g. mist or sleet) 53 Failed to see pedestrian or vehicle in blindspot
25 Interaction or competition with other road users 26 Aggressive driving 27 Lack of judgement of own path	**ANIMAL INVOLVEMENT** 54 Animal out of control

Accident Ref		Date	/	/

PF			V/C		Ref		CF1			CF2			CF3			CF4		

Notes: Only enter codes for the person who has a PF, with   the Stats19 Vehicle Ref for a driver or rider
                                                                  the Stats19 Casualty Ref for a pedestrian or passenger
PF is the Precipitating Factor, CF1 is the most important Causation Factor
Show confidence in CF codes by A=Definite, B=Probable, C=Possible

ACCIDENT FILE

ACCIDENT NUMBER |__|__|__|__|__|

NUMBER OF MOBILE
VEHICLES INVOLVED |__|__| (For multiple pile-ups → no. of vehs involved <u>with veh containing fatality)</u>

NUMBER OF MOBILE
VEHICLES DAMAGED |__|__|

NUMBER OF STATIONARY
VEHICLES INVOLVED |__|

NUMBER OF STATIONARY
VEHICLES DAMAGED |__|

TOTAL NO. OF PEOPLE
INVOLVED |__|__|__|

NO OF OCC/CAS RECORDS |__|__|__| (Exclude uninjured PSV passengers & occs of non-stop vehs)

SPECIAL CONDS
AT SITE |__| |__| |__| (1=Vertical curvature; 2=Hor curvature; 3=Fast traffic. List all
                (1)   (2)   (3)   present. - Supplement to Stats19)

CONFLICTS   (i) |__|__| (See list)

                (ii) |__|__|

                (iii) |__|__|

VEHICLE FILE

ACCIDENT NUMBER |␣|␣|␣|␣|␣|␣|

VEHICLE NUMBER |␣|␣|␣|

SEVERITY |␣| (1＝Fatal; 2＝Serious; 3＝Slight; 4＝Uninjured)

NUMBER OF OCCUPANTS |␣|␣|

MAKE OF VEHICLE |␣|␣|␣|␣|␣|␣|␣|␣|␣|␣|

MODEL OF VEHICLE |␣|␣|␣|␣|␣|␣|␣|␣|␣|␣|

MODEL VARIANT |␣|␣|␣|␣|␣|␣|␣|␣|␣|␣|

Pedal Cycles: Go to Page B3.

REGISTRATION LETTER |␣| (Letter, or 8＝No reg. letter; 9＝N/K)

SUFFIX OR PREFIX |␣| (1＝Suffix; 2＝Prefix; 3＝Cherished; 4＝Genuine pre-alphabet; 8＝Other - see Stats19 entry)

PSV TYPE |␣| (1＝PSV single deck; 2＝PSV double deck; 3＝PSV minibus - Supplement to Stats19)

CAR BODY TYPE |␣| (1＝Saloon; 2＝Hatchback; 3＝Estate; 4＝Forward control; 5＝Car derivative; 6＝Multi-purpose/Off-road; 7＝Sports)

DRIVING POSITION	⊔	(1=RHD; 2=LHD; m/c→0, Tractor etc→9)
DOORS	⊔	(1=2 Side doors; 2=4 Side doors; 3=3 Side doors; m/c→0)
FUEL TYPE	⊔	(1=Petrol; 2=Diesel)
FUEL SUPPLY	⊔	(1=Carburettor; 2=Injection)
SOFT/OPEN TOP	⊔	(1=Top up; 2=Top down)
"BULL BARS"	⊔	

Airbag

DRIVER'S	⊔	(1=Present; 2=Deployed)
PASSENGER'S	⊔	(,,)
REAR o/s	⊔	(,,)
REAR n/s	⊔	

Side Impact Bag

		(,,)
FRONT OFFSIDE	⊔	(,,)
FRONT NEARSIDE	⊔	
REAR o/s	⊔	(1=Present; 2=Activated)
REAR n/s	⊔	(,,)

Pretensioner/Web Lock

DRIVER'S	⊔
PASSENGER'S	⊔
REAR o/s	⊔
REAR centre	⊔
REAR n/s	⊔

OTHER SPECIAL SAFETY FEATURE (describe)	⊔

Vehicle/Accident Details

NUMBER OF IMPACTS ⌴ (1, 2; 3 or more = 3)

ORDER OF IMPACTS N/K ⌴

MOST SEVERE IMPACT ⌴ (1st, 2nd; 3rd or later = 3)

UNDERRUN ⌴

FIRE ⌴

ROLLOVER ⌴ (1 = Before 1st impact; 2 = After 1st impact; 3 = No impact)

FIRST OBJECT HIT ⌴⌴ (1 = Car/car derivative; 2 = 2-wheeler; 3 = Multi-purpose/other

SECOND OBJECT HIT ⌴⌴ LGV; 4 = HGV/PSV/other lge veh; 5 = Pole/narrow obj < 42cm (16½"); 6 = Wide obj; 7 = Pedestrian; 10 = Animal; 11 = Trailer/

THIRD OBJECT HIT ⌴⌴ caravan; 12 = Occ/rider detached from vehicle)

1st IMPACT DIRECTION ⌴ (1 = Front; 2 = O/s oblique; 3 = N/s oblique; 4 = O/s; 5 = N/s; 6 = Back; 7 = Top/underside)

2nd IMPACT DIRECTION ⌴

3rd IMPACT DIRECTION ⌴

1st IMPACT LOCATION ⌴⌴ (1 = Front; 2 = O/s; 3 = N/s; 4 = Back; 5 = Roof; 6 = Compartment)

2nd IMPACT LOCATION ⌴⌴

3rd IMPACT LOCATION ⌴

TRAVEL SPEED ⌴⌴⌴

SRCE OF ESTIMATE ⌴ ⌴ ⌴ ⌴ (1 = Tachograph; 2 = Police reconstruction; 3 = Witnesses;
            (1) (2) (3) (4) 4 = Driver. Mixed sources - combine these)

INADEQUATE LIGHTS ⌴
(For conditions)

Vehicle Defects

NO DEFECTS   L__J   (not punched)

TYRE DEFECT/PROBLEM   L__J   (1=Present; 2=Contributary)

STEERING DEFECT   L__J   (1=Present; 2=Contributary)

SUSPENSION DEFECT   L__J   (,,   )

WHEEL LOSS   L__J

BRAKE DEFECT   L__J   (1=Present; 2=Contributary)

MECHANICAL FAILURE   L__J   (1=Present; 2=Contributary)

ELECTRICAL FAILURE   L__J   (,,   )

HGV FILE

ACCIDENT NUMBER   └─┴─┴─┴─┴─┘

VEHICLE NUMBER   └─┴─┴─┘

SEVERITY   └─┘   (Max severity, this vehicle)

HGV TYPE   └─┘   (1=Rigid; 2=Artic; 3=Drawbar; 4=Plant; 5=Recovery combo)

HGV BODY TYPE   └─┘   (1=Tanker; 2=Platform; 3=Box; 4=Tipper; 5=Curtain; 6=Skeletal)

LOADING   └─┘   (1=Unladen; 2=Light load; 3=Part load; 4=Full load)

LOAD SHIFT   └─┘   (1=No; 2=Before Impact; 3=After)

LOAD SHED   └─┘   (,,   )

REAR GUARD FITTED   └─┘

SIDE GUARD FITTED   └─┘

<u>TRAILER DEFECTS FILE</u>

ACCIDENT NUMBER |__|__|__|__|__|

VEHICLE NUMBER |__|__|__|

SEVERITY |__| (Max severity in towing vehicle)

TYRE DEFECT |__| (1=Present, 2=Contributary)

SUSPENSION DEFECT |__| (1=Present, 2=Contributary)

WHEEL LOSS |__|

BRAKE DEFECT |__| (1=Present, 2=Contributary)

MECHANICAL FAILURE |__| (1=Present, 2=Contributary)

ELECTRICAL FAILURE |__| (,,   )
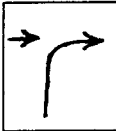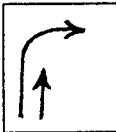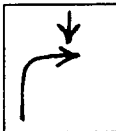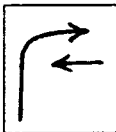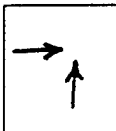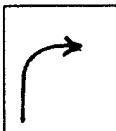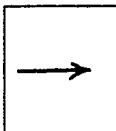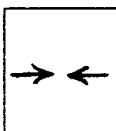
CORE OCCUPANT/CASUALTY FILE
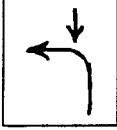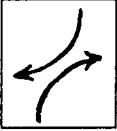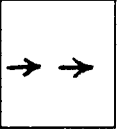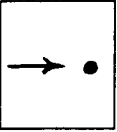
ACCIDENT NUMBER   └─┴─┴─┴─┴─┘

VEHICLE NUMBER   └─┴─┴─┘

OCC/CASUALTY NUMBER   └─┴─┴─┘

SEVERITY   └─┘

CASUALTY CLASS   └─┘   (1=Car/lge veh driver; 2=Car etc passenger; 3=M/c rider; 4=M/c pillion rider; 5=M/c sidecar pass; 6=Pedal cyclist; 7=Pedestrian)

SEX   └─┘   (1=Male; 2=Female; 3=Pregnant)

AGE   └─┴─┘   (Years)

APPROX AGE   └─┘   (C=Under 12; T=Teenager; A=Adult)

SEAT BELT USAGE   └─┘   (0=Not car or van; 1=Belt in use; 2=Belt fitted, not used; 3=Belt not fitted; 4=Child belt/harness fitted & used; 5=CBH fitted, not used; 6=CBH not fitted)

PSV PASSENGER   └─┘   (1=Boarding; 2=Alighting; 3=Standing passenger; 4=Seated passenger)

CRASH HELMET   └─┘   (1=Worn; 2=Not worn; 3=Came off in acc. Inc pedal cyclists)

SEATING POSITION:

ROW   └─┘   (1=Row1; 2=Row2; 3=Row3; 4=>Row3)

POSITION   └─┘   (1=O/S; 2=Centre; 3=N/S)

DIRECTION FACING   └─┘   (1=Front; 2=Rear; 3=Sideways)

IN LOAD AREA, NO SEAT   └─┘

OTHER OCCUPANT BEHIND   └─┘   (1=Restrained; 2=Unrestrained; 3=Present, Restraint N/K)

OTHER OCCUPANT BESIDE   └─┘   (,,   )

LUGGAGE/GOODS BEHIND   └─┘   (,,   )

LUGGAGE/GOODS BESIDE   └─┘   (,,   )

EJECTION   └─┘   (1=Partial; 2=Full)

EJECTION ROUTE   └─┘   (1=Windscreen; 2=Rear screen; 3=Side windows; 4=Open door or hatch)

UNINJURED |__| *(Ignore rest of form if this box ticked)*

Cause of Death, or Body Area Injured (for non-fatal cas):

HEAD INJURY |__|

NECK INJURY |__|

THORAX INJURY |__|

ABDOMEN INJURY |__|

ARMS |__|

LEGS (INC HIPS & PELVIC BONES) |__|

INJURY COMPLICATION |__|

MULTIPLE |__|

BURNS |__|

DROWNING |__|

ASPHYXIATION |__|

LONG-TERM DISABILITY |__|

N/K |__|

SOURCE OF INJURY DATA |__| (1 = Post-mortem; 2 = other)

HOSPITALISATION |__|__| (Record no of days as inpatient or to death. DOA = 50; Died within 24hr = 0; >30 days (non-fatal cas) = 40. Inpatient but no. of days N/K = 60. Injured but not treated = -2; Outpatient = -1; Uninjured - leave blank. If nothing known, code 99)

INJURY AGENT |__|__| (1 = Vehicle interior - no intrusion; 2 = Intruded veh interior; 3 = External object or other vehicle after ejection; 4 = intruding ext object; 5 = Exterior front of veh; 6 = Exterior side or rear of veh; 7 = Exterior w/screen or header rail; 10 = Road/footpath etc; 11 = run over by wheels)

NB: Cyclists, m/cyclists, pedesrians, use only codes 5, 6, 7, 10, 11

DESCRIPTION OF CONFLICTS

The conflicts describe the movements of the vehicles as seen from the air, irrespective of the road layout. If more than one conflict occurred, the major incident is described.

01		Vehicle emerged turning right into path of another from the left
02		Vehicle turns right across the path of a following or overtaking vehicle
03		Vehicle turned right across the path of an oncoming vehicle
04		Vehicle emerged turning right into path of another from the right
05		Straightforward 90° collision
06		Single vehicle turning right or negotiating right bend
07		Single vehicle going ahead
08		2 vehicles from opposing directions in collision
09		Vehicle emerged left into path of another from the left - 2nd veh often in overtaking pos; also emerging wide from rdabout or jnc

10		Vehicle turned left across path of a following one or one coming up on its inside
11		Vehicle turned left, going wide and in collision with an oncoming vehicle
12		Vehicle emerged left into path of another from the right
13		Locking or non-locking right turning vehicles in collision
14		Single vehicle turning left or negotiating left bend
15		2 or more vehicles facing same direction of travel
16		Vehicle in collision with a parked, unattended vehicle or object in carriageway
17		Vehicle entering a rdabout system into path of another already negotiating the rdabout
18		Accident involves pedestrian (in any capacity)
88		Other conflict
99		Not known

Appendix B: Examples of frequency tabulations

1. FREQUENCY LISTING FOR STATS19 ACCIDENT FILE

fas19acc (Total number in database 4713)

----RECORD TYPE----					
New record	3948	July	390	A	179
Amended record	765	August	399	B	126
----POLICE FORCE----		September	433	C	206
Metropolitan Police	320	October	443	Unclassified	1376
Cumbria	66	November	456	----PEDESTRIAN CROSSING----	
Lancashire	207	December	440	None within 50 m.	4193
Merseyside	88	----DAY OF WEEK----		Zebra	96
Greater Manchester	216	Sunday	620	Zebra/school patrol	1
Cheshire	99	Monday	673	Zebra/other person	3
Northumbria	55	Tuesday	611	Pelican	195
Durham	73	Wednesday	646	Other light control	91
North Yorkshire	99	Thursday	662	Other school patrol	7
West Yorkshire	136	Friday	761	Other auth. person	2
South Yorkshire	160	Saturday	740	Cen.refuge/no cont.	86
Humberside	112	----1st ROAD CLASS----		Footbridge/subway	39
Cleveland	48	Motorway	170	----LIGHT/DAYLIGHT----	
West Midlands	197	A(M)	12	Street lights > 7 m	1135
Staffordshire	51	A	2727	Street lights < 7 m	361
West Mercia	135	B	631	No street lights	1039
Warwickshire	94	C	385	Not known	200
Derbyshire	96	Unclassified	788	----LIGHT/DARKNESS----	
Nottinghamshire	190	----CARRIAGEWAY TYPE----		Street lights > 7 m	888
Lincolnshire	119	Roundabout	65	Street lights < 7 m	276
Leicestershire	136	One way street	56	No street lighting	757
Northamptonshire	121	Dual - 2 lanes	652	Street light unlit	26
Cambridgeshire	149	Dual - 3+ lanes	259	Not known	31
Norfolk	132	Single track road	74	----WEATHER----	
Suffolk	77	Single (2 lanes)	3406	Fine (no high wind)	3843
Bedfordhire	105	Single (3 lanes)	83	Rain (no high wind)	544
Hertfordshire	82	Single (4+ lanes)	112	Snow (No high wind)	7
Essex	222	Not known	6	Fine with high winds	95
Thames valley	287	----SPEED LIMIT----		Rain with high winds	72
Hampshire	76 3	20 mph	1	Snow with high winds	2
Surrey	44	0 mph	1739	Fog/hazardous mist	66
Kent	131	40 mph	482	Other	64
Sussex	97	50mph	86	Unknown	20
City of London	0	60 mph	1856	----ROAD SURFACE----	
Devon and Cornwall	76	70 mph	549	Dry	3007
Avon and Somerst	150	----JUNCTION DETAIL----		Wet/damp	1612
Gloucestershire	16	Not within 20 metres	2787	Snow	8
Wiltshire	74	Roundabout	78	Frost/ice	65
Dorset	41	Mini-roundabout	7	Flood (> 3 cm deep)	14
North Wales	84	T/Staggered junction	1090	----SPECIAL CONDITIONS----	
Gwent	1	Y junction	57	None	4607
South Wales	15	Slip road	66	Traffic signal out	4
Dyfed-Powys	36	Crossroads	406	Traffic signl defect	0
----ACCIDENT SEVERITY----		Multiple junction	35	Perm sign obscured	9
Fatal	4713	Using private drive	129	Road works	69
Serious	0	Other junction	58	Road surface bad	24
Slight	0	----JUNCTION CONTROL----		----CARRIAGEWAY HAZARDS----	
----MONTH----		Authorised person	0	None	4580
January	413	Auto. traffic signal	192	Dislodged vehcl load	5
February	307	Stop sign	28	Other object in road	88
March	346	Give way sign/mark.	1296	Previous accident	17
April	334	Uncontrolled	407	Dog on road	5
May	388	2nd ROAD CLASS		Other animal on road	18
June	364	Motorway	19		
		A (M)	2		

2. FREQUENCY LISTING FOR STATS19 VEHICLE FILE

fas19veh (Total number in database 7182)

----TYPE OF VEHICLE----		South West	818	Under water (complt)	9
Pedal cycle	273	West	907	Entered ditch	145
Moped	41	North West	770	Other permn. object	441
Motor scooter	7	----VEHICLE LOCATION----		----PRE/SUFFIX LETTER----	
Motor cycle	682	Leaving main road	234	> 20 years old	0
Combination	4	Entering main road	347	Unknown/cherished/NA	0
Invalid tricycle	5	On main road	6169	Foreign/diplomatic	0
Other 3 wheeled car	16	On minor road	235	Military	0
Taxi	35	On service road	11	Trade plates	0
Car (4 wheels)	4633	On lay-by/hard shldr	41	----FIRST POINT OF IMPCT----	
Minibus/m. caravan	37	Enter l-by/hrd shldr	13	Did not impact	130
PSV	167	Leave l-by/hrd shldr	3	Front	4948
Goods <= 1.5 tons UW	496	On a cycleway	1	Back	438
Goods > 1.5 tons UW	721	Not on carriageway	123	Offside	917
Other motor vehicle	62	JUNC.LOC AT 1st IMP		Nearside	749
Other non-motor veh.	3	Not at junction	4259	----1st PART DAMAGED----	
----TOWING/ARTICULATION----		Approach/parkd at jc	761	None	461
No tow/articulation	6813	Middle of junction	1679	Front	4291
Articulated vehicle	299	Cleared junction	443	Back	332
Dble/multple trailer	3	Did not impact	40	Offside	452
Caravan	9	----SKID/OVERTURN----		Nearside	256
Single trailer	51	No skid etc.	4975	Roof	10
Other tow	7	Skidded	1751	Underside	48
----MANOEUVRES----		Skidded & overturned	206	Allfour sides	1332
Reversing	41	Jacknifed	20	----2nd PART DAMAGED----	
Parked	177	Jacknifd & overturnd	2	None	4070
Waiting to go	42	Overturned	228	Front	0
Stopping	29	----HIT OBJECT IN ROAD----		Back	183
Starting	43	None	6563	Offside	1378
U turn	39	Previous accident	12	Nearside	797
Turning left	89	Road works	8	Roof	675
Waiting to turn left	10	Parked vehicle - lit	35	Underside	79
Turning right	419	Parked vehcl - unlit	97	All four sides	0
Waitng to turn rt. 2	9	Bridge (roof)	3	----3rd PART DAMAGED----	
Change lane to left	23	Bridge (side)	24	None	6052
Change lane to right	65	Bollard/refuge	28	Front	0
O-take mov.veh offsd	373	Open vehicle door	2	Back	0
O-take sta.veh offsd	117	Cent. island/roundbt	7	Offside	61
O-take on nearside	20	Kerb	334	Nearside	450
Go ahead left bend	648	Other object	69	Roof	308
Go ahead right bend	697	---LEAVING CARRIAGEWAY---		Underside	311
Go ahead other	4321	Did not leave cway.	5092	All four sides	0
---MOVEMENT DIRECN FROM---		Left cway. nearside	1084	----SEX OF DRIVER----	
Parked - not at kerb	56	Left nrsd & rebound	120	Male	6031
North	993	Left straight @ junc	31	Female	1126
North East	816	Lft offsd into c.res	79	Not traced	24
East	932	Ditto & rebounded	31	----BREATH TEST----	
South East	791	Lft offsd/cross cntr	62	Not applicable	711
South	982	Left cway. offside	617	Positive	145
South West	832	Ditto & rebounded	66	Negative	2680
West	946	----HIT OBJECT OFF ROAD----		Not requested	3394
North West	830	None	5855	Failed to provide	49
----MOVEMENT DIRECN TO----		Road sign etc	94	Driver not contacted	203
Parked	172	Lamp post	147	----HIT AND RUN----	
North	971	Telegraph pole etc.	44	Other	7047
North East	798	Tree	289	Hit and run	132
East	949	Bus stop/shelter	9	Non-stop veh not hit	3
South East	832	Centrl crash barrier	75		
South	957	Near/offsd cr.barr.	74		

fas19cas (Total number in database 9353)

----CASUALTY CLASS----		---PEDESTRIAN MOVEMENT---			
Driver or rider	4599	Not pedestrian	7669	Pupil to/from school	85
Passenger	3064	Cross from nearside	623	Pupil NOT to/frm sch	489
Pedestrian	1689	Ditto/masked by veh	101	----SEAT BELT USAGE----	
----SEX----		Cross from offside	531	Not car or van	3858
Male	6460	Ditto/masked by veh	66	Safety belt in use	3434
Female	2893	In cway/not crossing	88	Belt fitted/not used	750
---SEVERITY OF CASUALTY---		Ditto/masked by veh	12	Belt not fitted	532
Fatal	5175	Walk in road/facing	45	Child belt in use	70
Serious	1887	Ditto/back to traffc	66	Child belt/not used	2
Slight	2291	Unknown	152	Chld belt not fitted	33
---PEDESTRIAN LOCATION ---		---PEDESTRIAN DIRECTION---		Unknown	674
Not pedestrian	7669	Standing still	193	----CAR PASSENGER----	
On ped. crossing	142	North	208	Not a car passenger	6777
Approach in zig-zag	17	North East	157	Front seat passenger	1407
Exit within zig-zag	7	East	217	Rear seat passenger	1163
Within 50m. of xing	113	South East	155	----PSV PASSENGER----	
Elsewhere in cway	945	South	233	Not a PSV passenger	9243
On footway or verge	120	South West	172	Boarding	1
On island/refuge	18	West	206	Alighting	3
Centre of road	101	North West	153	Standing passenger	13
In cway,not crossing	165	----SCHOOL PUPIL----		Seated passenger	93
Not known	56	Not a school pupil	8779		

favrmdat (Total number in database 7009)

----TYPE OF VEHICLE----		Prelude	1	33	2
Pedal cycle	268	legend	2	75	0
Moped	42	Ballade	3	164	4
Motor scooter	5	Integra	1	Fiat other	16
Motor cycle	667	Concerto	0	126	0
Combination	2	Talbot other	2	Panda	16
Invalid tricycle	5	Subeam	8	Uno	25
Other 3-wheel car	15	Horizon	7	Strada	4
Taxi	35	samba	3	Tipo	6
Car (4-wheel)	4524	Solara	5	Regata	5
Minibus/motr.caravan	35	Alpine	7	Croma	2
PSV	166	Avenger	4	131 Mirafiore	3
Goods <= 1.5 tons UW	469	Hunter	0	X1/9	1
Goods > 1.5 tons UW	710	Ford other	139	Argenta	0
Other motor vehicle	61	Fiesta	201	Maserati	0
Other non-motor veh.	5	Escort	365	Lancia other	0
----TRL MAKE/MODEL LIST----		Orion	83	Y10	0
Other model	2664	Sierra	171	Delta	1
BLMC other	68	Granada	51	Beta	0
Metro	277	Capri	37	Dedra	0
Montego	98	Cortina	61	Thema	0
Maestro	94	Citroen other	6	Prisma	0
Marina/Ital	21	2CV/Dyane	6	Suzuki other	2
Mini	63	AX	12	Swift	2
Allegro	317	BX	28	SJ410/413	4
Acclaim	44	CX	3	Volvo other	74
1800/Princess	39	Visa	2	200	16
Maxi	31	GS	0	300	34
2000/3500	43	Renault other	30	400	7
213/216	82	5	30	700	17
820/827	49	9	6	Saab other	2
Range Rover	32	11	9	900	10
Landrover	17	18	4	9000	4
Jaguar	40	19	11	SEAT other	1
Daimler	23	21	14	Ibiza	3
Vauxhall other	38	25	15	Malaga	0
Nova	64	20	1	Marbella	1
Astra/Belmont	134	30	0	Soda other	0
Cavalier	177	Fuego	4	Estelle	8
Carlton	23	BMW other	2	Rapid	1
Senator	6	3 series	40	Favorit	1
Viva	1	5 series	23	Lada other	1
Chevette	16	6 series	2	Riva	10
Kadett	6	7 series	4	Niva	0
Rekord	1	Mercedes other	69	Samara	9
Manta	6	190	7	Zastava	6
Peugeot other	6	200	6	FSO	3
205	68	300	3	Dacia	0
309	22	400	0	Mitsubishi other	8
405	26	500	2	Colt	6
505	8	Audi other	4	Lancer	1
305	10	80	17	Galant	4
604	0	90	4	Shogun	7
504	4	100/Avant	11	Isuzu	4
Nissan other	31	200	2	Proton	6
Micra	23	Coupe	2	Toyota other	20
Sunny	37	Porsche	5	Corolla	23
Cherry	15	VW other	21	Celica	6
Stanza	11	Polo/Derby	42	Carina	7
Bluebird	19	Golf	68	Corona	2
Patrol	2	Jetta	7	Camry	5
Prairie	2	Passat/Santana	14	Supra	2
Honda other	4	Scirocco	8	MR2	3
Civic	12	Beetle	6	Starlet	2
Accord	10	Alfa Romeo other	3	Mazda other	12

121	0
323	9
626	9
RX	1
Subaru other	1
Justy	1
1.8	2
Daihatsu other	3
Applause	1
Charade	2
Fourtrak	1
Hyundu other	1
Pony	4
Stellar	2
----WHEEL PLAN----	
(A) 2 wheel	604
(B) 3-wheel	17
(C) 2-axle rigid	4916
(D) 3-axle rigid	43
(E) 4+ axle rigid	50
(F) 3-w + artic	11
(G) 2-axle +artic	135
(H) 3-axle + artic	37
(J) 4+ axle + artic	0
(K) Tracklaying Veh	0
(L) 2+2 artic	8
(M) 2+3 artic	32
(N) 3+2 artic	9
(P) 3+3 artic	29
(Q) Non-standard	0
(Y) Unknown	2
(Z) Artic - unknown	0
----DVLC BODY TYPE----	
Missing	1116
2 Door saloon	155
4 Door saloon	1018
Saloon	61
Convertible	32
Coupe	76
Estate	310
Taxi	18
Invalid vehicle	2
Tricycle	13
Goods tricycle	0
Hearse	0
Limousine	0
3 Door saloon	1138
5 Door saloon	1139
Moped	0
Scooter	2
Scooter Combination	2
Motorcycle	567
M/C Combination	1
Ped. Cont. Veh.	0
Sports	29
Panel Van	189
Box Van	129
Car Derived Van	144
Light Van	7
Pick up	39
Motor Caravan	3
Van / Side Windows	2
Light Goods	1
Pantechnicon	1
Luton Van	6
Insulated Van	26
Glass Carrier	0
Specially Fitted Van	3
Van	12
Livestock Carrier	3
Float	4
Flat Lorry	69
Dropside Lorry	40

Tipper	95
Low Loader	1
Truck	6
Breakdown Truck	7
Tanker	28
Solid Bulk Carrier	0
Concrete Mixer	5
Mobile Plant	1
Car Transporter	3
Refuse Disposal	9
Goods	87
Front Dumper	0
Skip Loader	9
Special Mobile Unit	1
Landrover / Jeep	25
Airprt Support Coach	0
S / D Bus / Coach	70
D / D Bus / Coach	61
Standee Bus	1
H / D Bus / Coach	2
Minibus	28
Tourer	0
Agric. Tractor	28
Combine Harvester	0
Root Crop Harvester	0
Forage Harvester	0
Windrower	0
Sprayer	0
Viner / Picker	0
Agric. Machine	1
Mowing Machine	0
Moped	32
Road Surfacer	0
Road tester	0
Tractor	36
Ambulance	3
Fire Engine	7
Bulldozer	0
Road Stripper	0
Tar Sprayer	0
Line Painter	0
Roller	0
Street Cleansing	5
Gritting Vehicle	1
Tower Wagon	2
Crane	4
Lift Truck	1
Snow Plough	0
Loading Shovel	0
Rear Digger	4
Station Tractor	0
Tractor Excavator	0
Hydraulic Excavator	0
Cesspool Emptier	0
Skeletal Goods	1
(Uncodable Bodytype)	59
Not Recorded	28
Special Purpose	1
----TAXATION CLASS----	Yellow
HGV	565
Trailer HGV	23
HGV Farmer's	9
Trailer HGV Farmer's	1
HGV Showman's	0
Trailer HGV Showmn's	0
Restricted HGV	1
Restrctd HGV Farmer	0
Restrctd HGV Showman	
Private	4353
Private and Goods	1
Private & Gds (Farm)	0
Bicycle	603
Bicycle (preferentl)	0

Goods (Farmer's)	4
Goods (Farm & Priv.)	0
Trailer Goods (Farm)	0
Goods	15
Trailer Goods	1
Goods (Electric)	0
Trailer Goods (Elec)	0
Goods and Hackney	0
Goods (Showman)	0
Trailer Gds (Showmn)	0
Tower wagon	0
Trailer Tower Wagon	0
Hackney	157
Agricultural Machine	20
Digging Machine	3
Mobile Crane	4
Works Truck	1
Mowing Machine	0
Recovery	8
Tricycle	13
Pedestrian Controlld	0
Showman's Haulage	0
General haulage	0
Special Type	2
Crown vehicle	6
Used on Private Road	0
Vehicle Exempt	0
Ambulance	1
Fire Engine	4
Road Roller	0
Others (no licence)	1
Fire Service	1
Lifeboat Hhaulage	0
Mine Rescue	0
Civil Defence	0
Lighthouse Authority	0
Disabled Driver	75
Electric Vehicle	2
Road Construction	3
Gritter	1
Snow Plough	0
Street Lighting	1
Street Cleansing	4
Disabld Pass.Carryng	4
Others (Nil licence)	2
Pers. Export Private	0
Direct Exprt Private	0
Dir/Pers Exprt M/C	0
Ditto Commercial	0
Consular	0
Diplomatic	0
----COLOUR----	
Not known	1128
Brown	111
Bronze	28
Red	1268
Pink	1
Orange	17
	120
Gold	114
Green	305
Blue	1149
Purple/Mauve/Violet	7
Grey	228
Silver/Aluminium	343
White	1107
Black	370
1 Multi - 3	62
Beige/Buff	134
Maroon	23
Turquoise	4
Cream/Ivory	35
Multi - 2	455

----PROPULSION----		Gas	1	Mrs.	496
Petrol	4601	Petrol/Gas	0	Miss	246
Heavy Oil	1289	----OWNER TITLE----		Dr. / Rev. etc.	78
Electric	2	Not Known	1816	Company	1484
Steam	0	Mr.	2887	Messrs.	2

Note: In the "TRL Make/Model List" section, "Other Model" includes HGVs, PSVs, motor cycles etc, plus a large number of cars whose Stats19 records could not be matched to the VRM data when it arrived from DVLC, and which are recorded in the database as "not traced". This is why there is such a large number in the "Other Model" category.

5. FREQUENCY LISTING FOR IDB ACCIDENT FILE

farepacc (Total number in database 4713)

----SPCIAL CONDS AT SITE----		Other	27	----3rd CONFLICT----	
Vertical curvature	162	not known	0	Type 1 conflict	0
Horizontal curvature	1220	----2nd CONFLICT----		Type 2 conflict	0
Fast traffic	204	Type 1 conflict	0	Type 3 conflict	0
----1st CONFLICT----		Type 2 conflict	1	Type 4 conflict	0
Type 1 conflict	20	Type 3 conflict	3	Type 5 conflict	1
Type 2 conflict	81	Type 4 conflict	3	Type 6 conflict	0
Type 3 conflict	140	Type 5 conflict	6	Type 7 conflict	0
Type 4 conflict	108	Type 6 conflict	0	Type 8 conflict	10
Type 5 conflict	266	Type 7 conflict	1	Type 9 conflict	0
Type 6 conflict	206	Type 8 conflict	147	Type 10 conflict	0
Type 7 conflict	497	Type 9 conflict	0	Type 11 conflict	0
Type 8 conflict	1011	Type 10 conflict	0	Type 12 conflict	0
Type 9 conflict	4	Type 11 conflict	0	Type 13 conflict	0
Type 10 conflict	23	Type 12 conflict	0	Type 14 conflict	0
Type 11 conflict	1	Type 13 conflict	0	Type 15 conflict	7
Type 12 conflict	15	Type 14 conflict	0	Type 16 conflict	4
Type 13 conflict	0	Type 15 conflict	68	Type 17 conflict	0
Type 14 conflict	199	Type 16 conflict	26	Involves pedestrian	3
Type 15 conflict	276	Type 17 conflict	0	Other	0
Type 16 conflict	276	Involves pedestrian	61	not known	0
Type 17 conflict	10	Other	1		
Involves pedestrian	1553	not known	0		

Note: A key to the 'Conflict' codes can be found in Appendix A.

farepveh (Total number in database 7182)

----SEVERITY (VEHICLE)----					
Fatal	4801	Zastava	0	Rover 214	15
Serious	515	Not known	0	Rover 216	32
Slight	766	----MODEL----		Rover 800	0
No injury	1100	Audi 80	29	Rover 800	14
---NUMBER OF OCCUPANTS---		Audi 100	16	Rover 827	4
One	4622	Austin Allegro	13	Rover Metro	217
Two	1507	Austin Ambassador	2	Rover Mini	93
Three	445	Austin Maestro	75	SAAB 900	14
Four	320	Austin Maxi	9	Skoda Estelle	3
Five	101	BMW 518	2	TVR 350	1
Not known	7	BMW 528	0	Talbot Alpine	11
----MAKE----		BMW 728	0	Talbot Horizon	9
Alfa Romeo	0	Chrysler Sunbeam	6	Talbot Samba	3
Audi	52	Citroen 2CV6	2	Talbot Solara	10
Austin	366	Citroen BX	18	Toyota Celica	9
Bedford	84	Datsun 180	1	Toyota Corolla	26
BMW	123	Datsun Skyline	0	Triumph Acclaim	13
Buick	0	FSO Conquest	1	Triumph GT6	0
Chrysler	1	FSO Polonez	2	Triumph Spitfire	2
Citroen	76	Fiat 131	0	VW Beetle	10
Datsun	55	Fiat Panda	22	VW Golf	87
Fiat	126	Fiat Regata	1	VW Jetta	12
Ford	1755	Fiat UNO	38	VW Polo	47
FSO	4	Ford Capri	50	VW Scirroco	0
Hillman	7	Ford Cortina	103	Vauxhall Astra	198
Honda	251	Ford Escort	557	Vauxhall Belmont	18
Hyundai	14	Ford Fiesta	292	Vauxhall Carlton	31
Isuzu	5	Ford Granada	75	Vauxhall Cavalier	282
Jaguar	18	Ford Orion	134	Vauxhall Chevette	23
Kia	2	Ford Sierra	248	Vauxhall Nova	76
Lada	33	Hillman Avenger	6	Vauxhall Viva	3
Lancia	2	Honda Accord	17	Volvo 240	11
Landrover	18	Honda Integra	0	Volvo 240	4
Lotus	4	Honda Prelude	2	Volvo 340	25
Mazda	40	Lada 1500	1	Volvo 360	12
Mercedes Benz	146	Mazda 626	12	Yugo 1100	2
MG	56	Mazda RX7	2	Not known	0
Mini	0	Mitsubishi Colt	13	----REGLET SUF/PREF----	
Mitsubishi	42	Morris Ital	11	Suffix	1668
Morris	34	Morris Marina	13	Prefix	5058
Nissan	165	Morris Montego	71	Cherished	70
Opel	25	Nissan Bluebird	33	Genuine pre-alphabet	7
Peugeot	232	Nissan Cherry	26	----PSV TYPE----	
Porsche	10	Nissan Laurel	1	PSV single deck	95
Proton	8	Nissan Micra	32	PSV double deck	67
Reliant	23	Nissan Stanza	18	PSV minibus	33
Renault	213	Nissan Sunny	49	----CAR BODY TYPE----	
Riley	0	Opel Rekord	1	Saloon	1502
Rolls Royce	0	Peugeot 106	4	Hatchback	2600
Rover	204	Peugeot 205	90	Estate	327
SAAB	21	Peugeot 305	17	Forward Control	18
SEAT	12	Peugeot 309	30	Car derivative	195
Skoda	15	Peugeot 405	34	Multi purp, off road	94
Subaru	10	Peugeot 504	5	Sports	52
Suzuki	155	Porsche 928	0	Other	0
Talbot	43	Proton Aeroback	1	Not known	19
Toyota	115	Reliant Rialto	10	----DRIVING POSITION----	
Triumph	32	Reliant Robin	10	Right hand drive	6079
TVR	3	Renault 12	2	Left hand drive	54
Vauxhall	649	Renault 19	17	---NUMBER OF SIDE DOORS---	
Volkswagen	26	Renault 25	13	2 side doors	3114
Volvo	225	Renault 5	34	4 side doors	2831
Wolseley	0	Renault Clio	4	3 side doors	37
Yugo	12	Renault Fuego	4	Not known	167
		Rover 213	22	----FUEL TYPE----	

Petrol 5340
Diesel 1501
Other 10
Not known 46
----FUEL SUPPLY----
Carburettor 4564
Injection 770
Not known 44
----SOFT TOP etc----
Soft top up 40
Soft top down 5
'Bull' bars fitted 32
----DRIVER AIRBAG----
Airbag/not deployed 1
Airbag deployed 9
----PASSENGER AIRBAG----
Airbag/not deployed 0
Airbag deployed 2
----REAR O/S AIRBAG----
Airbag/not deployed 0
Airbag deployed 0
----REAR N/S AIRBAG----
Airbag/not deployed 0
Airbag deployed 0
----FRONT O/S SIDE BAG----
Airbag/not deployed 0
Airbag deployed 0
----FRONT N/S SIDE BAG----
Airbag/not deployed 0
Airbag deployed 0
----REAR O/S SIDE BAG----
Airbag/not activated 0
Airbag activated 0
----REAR N/S SIDE BAG----
Airbag/not activated 0
Airbag activated 0
---PRETENSNER/WEB LOCK ---
Driver 1
Passenger 1
Rear O/S 0
Rear centre 0
Rear N/S 0
----OTH. SAFETY FEATURE----
Fitted 24
----NUMBER OF IMPACTS----
One 6049
Two 859
Three 212
---MOST SEVERE IMPACT---
First 6446
Second 559
Third 109
Order not known 2
----UNDERRUN----
Underrun 37
----FIRE----
Fire 89
----ROLLOVER----
Before 1st impact 58

After 1st impact 403
No impact 16
 ----FIRST OBJECT HIT----
Car, car derivative 2777
Two wheeler 721
Multi purpose, LGV 303
HGV, PSV, Oth.lg.veh 634
Narrow object < 41cm 220
Wide object > 41cm 834
Pedestrian 1542
Other 20
Object unknown 3
Animal 9
Trailer/caravan 13
----SECOND OBJECT HIT----
Car, car derivative 296
Two wheeler 14
Multi purpose, LGV 21
HGV, PSV, Oth.lg.veh 65
Narrow object < 41cm 204
Wide object > 41cm 366
Pedestrian 92
Other 2
Object unknown 0
Animal 1
Trailer/caravan 1
----THIRD OBJECT HIT----
Car, car derivative 45
Two wheeler 3
Multi purpose, LGV 3
HGV, PSV, Oth.lg.veh 7
Narrow object < 41cm 46
Wide object > 41cm 89
 Pedestrian 19
Other 0
Object unknown 0
Animal 0
Trailer/caravan 0
---1st IMPACT DIRECTION---
Front 5343
O/S oblique 181
N/S oblique 112
O/S 592
N/S 450
Back 412
Top/underside 25
Not known 6
---2nd IMPACT DIRECTION---
Front 663
O/S oblique 13
N/S oblique 12
O/S 130
N/S 116
Back 79
Top/underside 54
Not known 4
---3rd IMPACT DIRECTION---
Front 117
O/S oblique 6

N/S oblique 3
O/S 21
N/S 27
Back 19
Top/underside 19
Not known 0
---1st IMPACT LOCATION---
Front 5149
O/S 846
N/S 648
Back 424
Roof 30
Compartment 8
Not known 7
---2nd IMPACT LOCATION---
Front 635
O/S 146
N/S 148
Back 81
Roof 54
Compartment 1
Not known 4
---3rd IMPACT LOCATION---
Front 110
O/S 30
N/S 32
Back 19
Roof 21
Compartment 0
Not known 0
---SOURCE OF SPD. EST----
Tachograph 401
Police reconstrction 1022
Witnesses 2560
Driver 1755
----VEHICLE LIGHTS----
Inadequate lights 27
----TYRE DEFECT----
Present 336
Contributory 120
 ----STEERING DEFECT----
Present 32
Contributory 15
----SUSPENSION DEFECT----
Present 25
Contributory 14
----WHEEL LOSS----
Present 3
Contributory 0
----BRAKE DEFECT----
Present 168
Contributory 63
----MECHANICAL FAILURE----
Present 15
Contributory 26
----ELECTRICAL FAILURE----
Present 9

7. FREQUENCY LISTING FOR IDB HGV FILE

farephgv (Total number in database 661)

----SEVERITY (VEHICLE)----		----HGV BODY TYPE----			
Fatal	165	Tanker	41	Full load	170
Serious	26	Platform	115	----LOAD SHIFT----	
Slight	149	Box	249	No shift	589
Damage only	321	Tipper	113	Shift before impact	1
----HGV TYPE----		Curtain	79	Shift after impact	27
Rigid	390	Skeletal	6	----LOAD SHED----	
Artic	247	Other	38	No load shed	607
Drawbar	5	Not known	20	Shed before impact	0
Plant	3	----LOADING----		Shed after impact	22
Recovery combo.	2	Unladen	168	----GUARDS FITTED----	
Other	13	Light load	36	Rear guard fitted	257
Not known	1	Part load	168	Side guard fitted	212

8. FREQUENCY LISTING FOR IDB TRAILER DEFECTS FILE

fareptlr (Total number in database 350)

----SEVERITY(TOW VEH----		----SUSPENSION DEFECT----		Contributory	4
Fatal	77	Present	4	----MECHANICAL FAILURE----	
Serious	12	Contributory	1	Present	2
Slight	69	----WHEEL LOSS----		Contributory	4
Uninjured	192	Present	0	----ELECTRICAL FAILURE----	
----TYRE DEFECT----		Contributory	0	Present	2
Present	6	----BRAKE DEFECT----		Contributory	1
Contributory	2	Present	20		

9. FREQUENCY LISTING FOR IDB OCCUPANT FILE

farepocc (Total number in database 13001)

----SEVERITY (CASUALTY)----					
Fatal	5175	Helmet not worn	263	----BODY AREA INJURED----	
Serious	1887	Came off in accident	164	Head	3420
Slight	2291	Not known	33	Neck	704
Uninjured	3648	----SEATING POSITION----		Chest	1831
Not known	0	Row 1	9319	Abdomen	453
----CASUALTY CLASS----		Row 2	1744	Arm	832
Car/large veh.driver	6042	Row 3	56	Leg	1398
Car etc. passenger	4140	> Row 3	75	Injury complications	236
M/c rider	733	Other	7	Multiple injuries	2065
M/c pillion rider	107	Off-side	6636	Burns	72
M/c sidecar pass.	1	Centre	1432	Drowning	23
Pedal cyclist	273	Near-side	3065	Asphyxiation	38
Pedestrian	1684	Other	8	Long-term disability	48
Not known	0	Facing front	11156	Injury details NK	1278
----SEX----		Facing rear	19	---SOURCE OF INJ.DATA----	
Male	9243	Facing sideways	53	Post-mortem	2739
Female	3716	In load area/no seat	76	Other	1851
Pregnant	12	---OTHER OCCUP. BEHIND---		----HOSPITALISATION----	
----APPROX. AGE GROUP----		Restrained	317	Dead on arrival	3397
12 and under	721	Unrestrained	819	Died within 24 hrs.	4304
Teenager	1982	Present/restraint NK	362	> 30 days	29
Adult	10280	---OTHER OCCUP. BESIDE---		Inpatient/duratn NK	1707
----SEAT BELT USAGE----		Restrained	2843	Outpatient	1889
Not car or van	3994	Unrestrained	1170	Injured/not treated	252
Safety belt in use	4507	Present/restraint NK	1591	Uninjured	0
Belt fitted/not used	903	---LUGGAGE/GDS. BEHIND---		Nothing known	298
Belt not fitted	700	Restrained	5	----INJURY AGENT----	
Child belt in use	116	Unrestrained	3	Interior/no intrusn.	1031
Child belt/not used	2	Present/restraint NK	1	Intruded interior	4701
Chld belt not fitted	37	---LUGGAGE/GDS. BESIDE---		External after eject	92
Unknown	2742	Restrained	0	Intruded extrnal obj	48
----PSV PASSENGER----		Unrestrained	0	Exterior veh.front	964
Not a PSV passenger	12885	Present/restraint NK	4	Exterior side/rear	281
Boarding	0	----EJECTION----		Exterior w/screen	865
Alighting	5	Partial ejection	86	Road,footpath,etc.	826
Standing passenger	8	Full ejection	399	Run over by wheels	126
Seated passenger	103	via windscreen	63	Other	21
----CRASH HELMET----		via rear screen	52	Not known	190
Helmet worn	663	via side windows	60		
		via open door/hatch	208		

10. FREQUENCY LISTING FOR IDB CAUSATION FILE

farepwhy (Total number in database 4713)

Label	Value	Label	Value	Label	Value
-Precipitatng factor		Steep hill	1	Other	10
(Driver failure)	0	Narrow road	0	*(Local conditions)*	0
Failed to stop	48	Bend/winding road	21	Poor road surface	9
Failed to give way	371	Roadworks	3	Poor/no street light	28
Fail to miss pedestr	391	Slippery road	72	Inadequate signing	10
Fail to miss veh/obj	398	High winds	17	Steep hill	6
Fail to signal	3	Earlier accident	0	Narrow road	3
Loss of control	1844	Other	9	Bend/winding road	87
(Pedestrian failure)	0	*(Obscuration-view)*	0	Roadworks	13
Ped.careless	1117	Windows obscured	2	Slippery road	63
Pass.fell in/nr.PSV	15	Glare from sun	10	High winds	4
(Manoevres)	0	Glare from headlight	1	Earlier accident	0
Swerve to miss obj.	25	*(Obscure/surrndings)*	0	Other	6
Sudden braking	31	Bend/winding road	7	*(Obscuration-view)*	0
Poor turn/manoevre	183	Stationry/parked veh	2	Windows obscured	3
Poor overtaking	207	Moving vehicle	2	Glare from sun	19
Drove wrong way	18	Building,fence,etc.	1	Glare from headlight	8
Open door carelessly	3	Weather (mist/sleet)	7	*(Obscure/surrndings)*	0
(Other)	0	Blindspot	6	Bend/winding road	21
Other	59	*(Animal)*	0	Stationry/parked veh	13
----1st cause factor----		Animal out of contrl	10	Moving vehicle	24
(Driver impairment)	0	-Confidence of fact 1		Building,fence,etc.	11
Alcohol	484	Definite	3565	Weather (mist/sleet)	16
Drugs	25	Probable	982	Blindspot	11
Fatigue	117	Possible	103	*(Animal)*	0
Illness	109	----2nd cause factor----		Animal out of contrl	1
(Driver distraction)	0	*(Driver impairment)*	0	-Confidence of fact 2	
Stress/emotion	65	Alcohol	157	Definite	2006
Physical in vehicle	41	Drugs	21	Probable	1367
Physical out of veh.	15	Fatigue	77	Possible	424
(Behaviour)	0	Illness	41	----3rd cause factor----	
Panic	19	*(Driver distraction)*	0	*(Driver impairment)*	0
Careless/reckless	662	Stress/emotion	67	Alcohol	47
Nervous/uncertain	12	Physical in vehicle	38	Drugs	8
In a hurry	18	Physical out of veh.	14	Fatigue	23
(Other personal)	0	*(Behaviour)*	0	Illness	10
Not judge path/speed	479	Panic	17	*(Driver distraction)*	0
Disability	7	Careless/reckless	742	Stress/emotion	47
Failed to look	372	Nervous/uncertain	37	Physical in vehicle	17
Looked/did not see	140	In a hurry	65	Physical out of veh.	5
Inattention	365	*(Other personal)*	0	*(Behaviour)*	0
Hit p./dark clothing	35	Not judge path/speed	290	Panic	11
Other	72	Disability	18	Careless/reckless	317
(Pedestrian details)	0	Failed to look	235	Nervous/uncertain	8
Cross behnd.park.veh	121	Looked/did not see	122	In a hurry	18
Ignored lights	45	Inattention	328	*(Other personal)*	0
(Driver details)	0	Hit p./dark clothing	116	Not judge path/speed	116
Excessive speed	970	Other	24	Disability	8
Follow too close	15	*(Pedestrian details)*	0	Failed to look	57
Inexperience/driving	80	Cross behnd.park.veh	36	Looked/did not see	29
Inexperience/vehicle	21	Ignored lights	10	Inattention	132
Competition others	12	*(Driver details)*	0	Hit p./dark clothing	48
Aggressive driving	13	Excessive speed	363	Other	18
Lck judgmnt/own path	79	Follow too close	17	*(Pedestrian details)*	0
(Vehicle defects)	0	Inexperience/driving	199	Cross behnd.park.veh	14
Tyres-pressure	6	Inexperience/vehicle	57	Ignored lights	6
Tyres-deflation	14	Competition others	41	*(Driver details)*	0
Tyres-worn	4	Aggressive driving	89	Excessive speed	96
Bad lights/signals	6	Lck judgmnt/own path	154	Follow too close	13
Defective brakes	13	*(Vehicle defects)*	0	Inexperience/driving	120
Other	31	Tyres-pressure	21	Inexperience/vehicle	66
(Local conditions)	0	Tyres-deflation	5	Competition others	49
Poor road surface	12	Tyres-worn	19	Aggressive driving	93
Poor/no street light	2	Bad lights/signals	4	Lck judgmnt/own path	105
Inadequate signing	2	Defective brakes	18	*(Vehicle defects)*	0

Tyres-pressure	20	----4th cause factor----		Tyres-pressure	2
Tyres-deflation	5	*(Driver impairment)*	0	Tyres-deflation	5
Tyres-worn	17	Alcohol	22	Tyres-worn	6
Bad lights/signals	3	Drugs	3	Bad lights/signals	1
Defective brakes	9	Fatigue	6	Defective brakes	3
Other	7	Illness	1	Other	4
(Local conditions)	0	*(Driver distraction)*	0	*(Local conditions)*	0
Poor road surface	6	Stress/emotion	9	Poor road surface	5
Poor/no street light	30	Physical in vehicle	10	Poor/no street light	10
Inadequate signing	2	Physical out of veh.	1	Inadequate signing	4
Steep hill	2	*(Behaviour)*	0	Steep hill	1
Narrow road	6	Panic	3	Narrow road	2
Bend/winding road	95	Careless/reckless	62	Bend/winding road	59
Roadworks	11	Nervous/uncertain	0	Roadworks	4
Slippery road	31	In a hurry	5	Slippery road	14
High winds	4	*(Other personal)*	0	High winds	1
Earlier accident	2	Not judge path/speed	16	Earlier accident	0
Other	9	Disability	0	Other	6
(Obscuration-view)	0	Failed to look	11	*(Obscuration-view)*	0
Windows obscured	4	Looked/did not see	3	Windows obscured	1
Glare from sun	4	Inattention	15	Glare from sun	2
Glare from headlight	7	Hit p./dark clothing	7	Glare from headlight	2
(Obscure/surrndings)	0	Other	4	*(Obscure/surrndings)*	0
Bend/winding road	18	*(Pedestrian details)*	0	Bend/winding road	16
Stationry/parked veh	14	Cross behnd.park.veh	5	Stationry/parked veh	3
Moving vehicle	9	Ignored lights	0	Moving vehicle	5
Building,fence,etc.	10	*(Driver details)*	0	Building,fence,etc.	1
Weather (mist/sleet)	20	Excessive speed	21	Weather (mist/sleet)	8
Blindspot	7	Follow too close	3	Blindspot	2
(Animal)	0	Inexperience/driving	40	*(Animal)*	0
Animal out of contrl	3	Inexperience/vehicle	25	Animal out of contrl	2
----Confidence of fact3----		Competition others	15	----Confidence of fact4----	
Definite	1032	Aggressive driving	41	Definite	353
Probable	511	Lck judgmnt/own path	55	Probable	105
Possible	289	*(Vehicle defects)*	0	Possible	91

Abstract

This report describes the continuation of a project which collects police fatal road accident reports at TRL. These reports, which are prepared by the police for presentation in evidence at the coroner's inquest, can provide comprehensive details of the circumstances surrounding these severe road accidents. Such reports have been used over a period of many years for research into the causes of road accidents, the behaviour of vehicle structures in crashes, and the mechanisms by which the occupants suffer their injuries. However, until the setting up of the first phase of this project at TRL, no attempt had been made in the UK to make these reports routinely available to accident researchers.

The report describes the fatal file collection scheme, which encompasses nearly every police force in England and Wales. Overall, reports relating to as many as 75% of the fatal accidents occurring in these countries each year are recovered from the police. The files are of varying ages when they are acquired by TRL, the average being about three to four years, and they will be kept until they are ten years old.

A structured means of access to the files via the National Stats19 injury accident database is available, allowing pre-selection of accidents of interest. The files received from the police are sometimes incomplete, but the file cataloguing process also records the presence of such items of information as post-mortem reports and photographs of the vehicles and the accident scene, so that, if desired, only files containing information of importance to a particular analysis can be selected.

Detailed information from a proportion of the reports has been extracted and placed in a computerised database, which forms a powerful means of analysis of this information. All reports received from the police during the current and future phases of the project will be included in this database, which will therefore continue to grow as time goes on and more reports are received. A spin-off benefit is that this database can also be used for more detailed pre-selection of accident types, before consulting the relevant hard-copy reports. This combination of rapid computerised analysis coupled with the in-depth information available in the hard-copy reports makes for a very powerful resource in the accident investigation arena.

Related publications

TRL258   *A new accident database, based on Police Fatal Accident Reports* by R Minton. 2000 (price £25, code E)

TRL323   *A new system for recording contributory factors in road accidents* by J Broughton, K A Markey and D Rowe. 1998 (price £25, code E)

TRL304   *Injury accidents on rural single-carriageway roads, 1994-95: an analysis of STATS19 data* by J Barker, S Farmer and D Nicholls. 1998 (price £25, code E)

TRL272   *National hospital study of road accident casualties* by H F Simpson. 1998 (price £35, code H)

RR379   *Police and hospital recording of non-fatal road accident casualties: a study in Greater Manchester* by J M Hopkin, P A Murray, M Pitcher and C S B Galasko. 1992 (price £35, code H)

RR365   *Injury accidents on rural single-carriageway roads - an analysis of STATS19 data* by M C Taylor and J K Barker. 1992 (price £35, code H)

CR305   *The analysis of pre-accident sequences* by D D Clarke, R Forsyth and R Wright. 1992 (price £35, code J)

Prices current at November 2000

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