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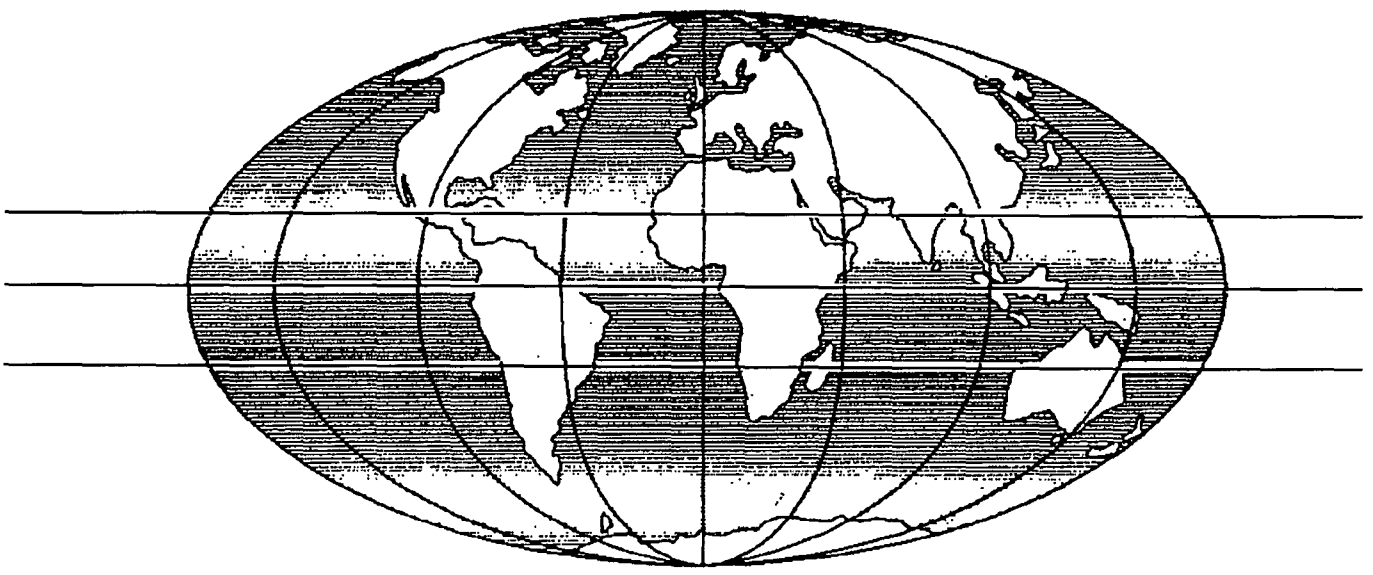

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ROAD ACCIDENT DATA RECORDING

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OBJECTIVES

To demonstrate the importance of having reliable data collection and analysis systems. Without a reliable system, little progress can be made in either understanding the factors that comprise road accidents or developing effective remedial measure programmes.

INTRODUCTION

Developing countries have a serious and growing road accident problem. Traffic accidents have become a major problem in many Third World countries and result in significant social and economic losses that they can ill afford.

Little progress can be made in improving the accident situation until the problem has been clearly defined and an understanding gained on where, why and to whom road accidents are happening.

Road accident data therefore needs to be collected to meet the broad range of purposes and groups involved in the field of road safety. In many developing countries road accident data collection, storage and analysis systems are non existent or are largely inadequate. Existing systems can range from those where only the barest details are collected to those where an enormous amount of data are collected, much of which is totally irrelevant to the needs of accident investigators, engineers etc or it is inaccessible because of the way in which it is stored.

Road accidents are complex occurrences which makes the collection of reliable data difficult. Thus, it is important that data collection is carried out in a systematic and uniform manner using standardised forms to ensure that each accidents is treated in the same way.

Once appropriate forms are available, police responsible for reporting road accidents need to be trained in their use and application. In some developing countries illiteracy and poor training in the traffic force can be overcome by the use of specially designed report booklets and the training of police selected to specialise in such work.

ACCIDENT REPORTING IN THE UK.

Road accident statistics were first collected in a form which could yield national data in 1909 - when there were 1070 fatal accidents. The first serious, and substantial publication of road accident statistics was by the Ministry of Transport in 1951.

In order to keep pace with changing times over the years, the original accident report form(s) has been modified several times. Only in 1982 did all the authorities use the specially designed 'Stats 19' form. These form are completed by reporting officers details of which are sent to the Department of Transport every month for national collation and analysis.

Since 1974, UK local authorities have had a statutory responsibility for road safety and as a result collected information about accidents in their areas for the past 20 years. Information collected is usually based on the national data together with any extra items collected locally for their own use.

In the vast majority of cases in the UK, the accident report booklet is filled in by a Police reporting officer visiting the scene of the accident. The police or local authority enter the accident details on to computer where the records are validated before being made available for both local and national analysis.

ACCIDENT REPORTING IN DEVELOPING COUNTRIES

An early study (Jacobs et al 1975) of data collection and analysis in developing countries found that very few Third World countries operated an adequate road accident data collection and analysis system. Although most of the countries surveyed collected data there was a tendency for the report forms to be either too complicated or inadequate for the task of accident reporting. At the time of the study none of the countries represented transferred data onto a computer based storage and analysis system.

What can be achieved in a country's road safety programme, is in many ways dependent upon the quality of its accident reporting. In the vast majority of developing countries the data used in accident prevention programmes are obtained from reports prepared by police officers. However, a police accident report form, such as a sheet of paper with few headings that give little or no assistance to the reporting officer discourages the creation of a reliable and consistent data base. Reporting systems requiring accident details to be recorded on sheets of paper that contain only a minimum of guidance for the reporting officer, make it difficult to establish the common core of data essential needed for accident investigation. Equally, a form or booklet that is too long or complex will discourage officers from filling it in accurately.

With developing countries becoming aware of their accident problem, an increasing number are seeking ways to prevent and reduce their occurrence. Developed countries confronted with the same problem found it necessary to adopt a scientific approach to uncover the underlying factors involved in road accidents. Such an approach requires a level of detail and accuracy in its accident reporting and recording system that many Third world countries do not have. Shortages of experience, professional skills and money also contribute to the problems of providing adequate levels of accident recording and analysis in industrialising countries.

TRL RESEARCH

A TRL research programme into developing an accident report booklet of use by police in Third World countries found that booklets designed as a desk exercise, without adequate provision for evaluation by police officers using them as part of their daily routine, will almost certainly contain faults in design, layout and content. Important in any evaluation programme is the opinion of future booklet users.

In general booklets or forms with the least number of questions were preferred. This implies that very careful thought should be given to the amount of information asked for in a reporting system. Keeping the number of questions to a minimum should be conducive to accurate reporting and improving reporting rates. However, booklets must still contain sufficient information to meet local, regional and national data needs, accident investigators and courts requirements.

An important part of the booklet design was the pre coding of the reported accidens data. Pre coding reduced the time needed to input the accident data into a microcomputer system and reduced inputting errors.

Symbols were found to be useful in a limited number of situations and where they were used few errors were reporting errors were found.

THE NEED FOR ACCURATE ACCIDENT RECORDS

Many different groups and organisations use accident data and it is important that data collection is carried out in a systematic and uniform manner using standardised forms or booklets. Accident statistics are of value to:

1. the police

2. government departments

3. local highway authorities

4. publicity offices

5. national records offices
6. research institutes
7. road engineers and planners
8. commercial and insurance organisations.

It is important that accident information is recorded as accurately as possible.
Lack of reliable data makes it impossible to compile effective and reliable statistics. Inaccurate reporting may seriously affect the overall accident picture, estimates of accident costs and remedial measure investment programmes. Reliable data not only helps ensure reliable statistics but the details may be required as evidence in court proceedings.

Thus, whether for national, broad statistics or for use in detailed research there is a need for the accident data collected to be both accurate and uniform. Without agreement for such terms as 'fatal' injury or 'intersection' little can be done in the way of producing or maintaining long term accurate road accident information.

Accuracy of data begs the question of what should be collected. Prepared forms or booklets are now used in many countries for data collection but the design and content vary markedly. Some countries use the same form for data collection and subsequent analysis while others use different documents for the two stages of the process. Obviously a balance has to be struck between what is the minimum needed for bare national statistics and the much more detailed information needed for accident reduction programmes.

Form/booklet design and content are not considered here except to say that they should be easy to complete, contain data that is relevant to the subsequent analysis and not require reporting skills and knowledge that recording officers may not have.

DATA ANALYSIS

To make full use of the road accident data collected it is essential that an adequate data processing system be used. Analysis by hand is time consuming, labour intensive, limited and prone to error. Main frame computers have had a chequered history when used in the analysis of road accident data in developing countries. The rapid development and availability of microcomputers has opened up new possibilities for analysing road accident data efficiently and imaginatively.

In 1981 the Overseas Centre of the Transport Research Laboratory began developing its Microcomputer Accident Analysis Package (MAAP). The package, originally developed as part of a cooperative road safety research programme in Egypt has recently been enhanced to include a mouse driven pull down menu system, with extensive graphical outputs.

Advantages of microcomputers include them being relatively cheap, physically robust, tolerant of difficult environments, portable, relatively easy to maintain, generally accessible with 'user friendly' programs designed for the job in hand.

However, successful analysis will not come from the hardware alone. Trained, experienced personnel are still needed to administer and execute the collection of data, to analyse, interpret and present it in a meaningful manner.

To make the most efficient use of microcomputer outputs and other road safety resources, an effective institute (or some other such organisation) is required. Such an institute will initiate integrated road safety action plans containing clear objectives and goals.

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