

# **THE LEGAL IMPLICATIONS OF FRANGIBLE POLES**

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Abstract  The legal implications of the use of frangible or break-away poles is investigated. It is concluded that road authorities who use frangible poles will not normally be held liable to persons injured by them. Authorities who use rigid poles instead of safer equipment may be held liable in negligence in some circumstances. Potential defendants are identified.				
Keywords:  Frangible, breakaway, slip-base, poles, luminaires, traffic control signals, guideposts, signposts, legal liability, negligence, nuisance, tort, public authorities, non-feasance, traffic accidents.				

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## Preface

*Australia, unlike many other countries, makes very limited use of frangible or slip-base poles along the roads. One possible reason for the prevalence of rigid poles is the belief that an authority which installed a frangible pole that injured a pedestrian or motorist, could have legal liability imposed upon it for the injuries caused. We sought to clarify the legal position.*

*Our training and education has been in law, not engineering or science. Yet we have become convinced "beyond reasonable doubt" that the extensive use of frangible and slip-base poles can meaningfully reduce the road toll. Our legal conclusions follow as a matter of common sense. We have concluded that an authority which uses a frangible pole will not be held legally liable in the unlikely event that someone is injured by it; an authority which fails to use a safer pole when the rigid pole presents a danger to users of the road may be held liable.*

*Of course the conclusions must be accompanied by the lawyers' usual "maybes" and cautions. Factors of location, cost and road use must be taken into account. Nonetheless, we conclude that there is no legal barrier to the use of these poles and indeed, the law may even compel their use.*

*We wish to thank everyone who co-operated in the collection of data and information which is assembled in this report. Appendix A attempts to list the institutions and organizations which assisted us in our task. The list is by no means complete and many who made substantial contributions may have been inadvertently omitted through imprecise record keeping or other cause.*

*The initiative and sponsorship of the Office of Road Safety, Department of Transport, Canberra is specifically acknowledged. We are grateful to each of the Project Directors who worked with us and for the patience they displayed as the months turned to years and deadlines went unmet. The many overseas trips by one of us (J.E.) and the two pregnancies of the other (L.H.) always seemed to occur at times inconvenient for the project.*

*The Monash University Faculty of Law, when members were not kidding us about "frangible poles" or whatever, showed interest and provided support, and the administrative lawyers listened with patience to our views on Anns case and its implications for streetlighting. Especial thanks to Keith Akers in the Law Library for many long hours spent helping us trace the mysteries of legislative repeals and revisions, and to Gretchen Kewley who provided substantial assistance with the task of proof-reading.*

*The efforts of Mrs. Elizabeth Dodson who "babysat" the project from the start and held it together through the preparation of the report were especially helpful.*

Judd Epstein  
Lucy Hunter

1st February, 1984

## Chapter 1

# INTRODUCTION

### 1.1 BACKGROUND TO THE PROJECT

In 1978, the Office of Road Safety of the Australian Department of Transport, commissioned this study into the legal implications surrounding the use of frangible or breakaway poles for street lighting and the support of overhead conductors. Frangible or breakaway poles are safety devices in that they yield or collapse on impact, thus decreasing the possibility of injury to the occupants and the amount of damage to the vehicle. Conventional rigid poles, on the other hand, whether made of timber, steel or concrete, cause a rapid deceleration of the impacting vehicle and thus their potential for severe injury to the occupants and damage to the vehicle is high. The Office of Road Safety considered that the use of frangible poles was an important way of creating a safer roadside environment, as they significantly reduce the severity of vehicle-pole collisions.

The Department of Transport had previously sponsored other projects which dealt with different aspects of roadside hazards. In 1971 a series of reports on the national road accident situation was commissioned by the Expert Group on Road Safety. One of these reports dealt with the accident involvement of roadside objects.<sup>1</sup> The report highlighted the inadequacy of Australian accident data and reviewed the available literature on methods of reducing the severity and occurrence of roadside object collisions. In particular, the report surveyed the developments in frangible devices which were in use overseas, or undergoing experimental testing, which could replace existing rigid poles for street lighting, sign posts and traffic control signals, and, possibly, for supporting overhead conductors. The authors, in their final chapter, stated that roadside hazards such as street lighting and utility poles required immediate attention.<sup>2</sup>

In 1972, the Expert Group on Road Safety, in its first report to the Minister for Shipping and Transport, recommended that:

In new construction the roadside should if possible be free from obstacles for at least 30 ft from the pavement edge. When this is not possible, signs, poles and signals should be of breakaway design. Existing roadside objects should be removed if their nature or location is likely to cause or increase the severity of accidents.<sup>3</sup>

In 1975, the Expert Group on Road Safety, in its second report to the Minister for Transport, stated that:

Impacts with fixed objects such as trees, poles and sign supports are often severe. Studies in the United States have shown the benefits of devices such as breakaway sign supports in reducing accident severity.

Taking accident costs into account, the installation of slip-base poles on heavily trafficked roads is economically justifiable; conventional service poles are justifiable only if the sole cost consideration is installation and maintenance. Every effort should be made to encourage the use of slip-base poles or the undergrounding of essential services in the planning and design of subdivision and arterial roads.

In established areas, fixed objects should be removed, relocated or guarded along heavily trafficked routes, or when justified by accident records at individual sites. Standards should be developed for this type of corrective action based on factors such as traffic volumes, speeds and roadway geometrics. Studies aimed at developing such warrants have already been initiated.<sup>4</sup>

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1. M. C. Good and P. N. Joubert, *A Review of Roadside Objects in Relation to Road Safety*, (Canberra: A.G.P.S., 1973).

2. *Id.* 179.

3. Commonwealth of Australia, Department of Shipping and Transport. *The Road Accident Situation in Australia: A National Review*, (Canberra: A.G.P.S., 1972).

4. Commonwealth of Australia, Department of Transport, *The Road Accident Situation in Australia in 1975*, (Canberra: A.G.P.S., 1977), 57.

In 1976, the Department of Transport commissioned a three year project at the University of Melbourne Department of Mechanical Engineering into vehicle-pole collisions.<sup>5</sup> (This project is referred to throughout as the "Melbourne University Study".) The study, published early in 1979, provides accurate detailed information on the factors surrounding vehicle impacts with utility (cable-carrying) poles, street lighting poles, and traffic control signals. Data on factors such as site and vehicle characteristics and accident severity and cost, as well as the incidence of vehicle-pole collisions in the Melbourne metropolitan area are provided and site data were collected for a random sample of poles not characterised in the accident study. This study provided a statistical predictor model to determine poles at risk and investigated methods available to reduce the risk as well as the severity of such collisions.

The authors of the Melbourne University Study recommended that for new installations, breakaway poles should be mandatory for street lighting and that electric cables should be undergrounded. Where poles had to be located along the road, the authors stressed that they should be offset by at least 3 metres from the travelled edge. In relation to existing street lighting poles, the authors recommended that replacement of rigid poles with breakaway designs should occur where the pole was due for replacement or where there was a determination that it posed a particular hazard.<sup>6</sup> Additionally, the authors recommended that research should be undertaken into the development of breakaway devices for traffic control signals.<sup>7</sup> Finally, the authors recommended that "the legal responsibilities of the owners of unnecessarily hazardous roadside assets (such as rigid luminaire supports) should be clarified".<sup>8</sup>

The need for legal clarification grew out of a discussion of a paper<sup>9</sup> presented at the Fixed Roadside Hazards Symposium held in 1977 under the joint auspices of the Australian Road Research Board and the Department of Transport. Discussion at this symposium brought to light the fact that many State instrumentalities were concerned that the use of frangible or breakaway devices might expose them to increased legal liability. The reasons for this belief were two-fold.

First, these instrumentalities believed that because it is the very nature of a breakaway pole to yield, the incidence of accidents where poles fell would increase. Pedestrians and following motorists would be exposed to greater hazards and increased injuries and property damage would result. Second, many instrumentalities felt that, as with the misfeasance-nonfeasance distinction, they would incur no liability if they continued to use existing rigid poles. This attitude was reinforced by the fact that claims had never been made against them by a motorist or passenger injured in a collision with a rigid pole.

The attitude of some authorities was that while it was their responsibility to ensure that the roadway surface and design did not cause accidents and that the roads were adequately lit to minimise accidents, objects along the road were not their problem. After all, poles are not in the path of motorists; if pole-vehicle collisions occurred, it was the fault of the motorist; either he was under the influence of alcohol, or he was reckless, careless or inattentive. Installing breakaway devices would not diminish the number of accidents and might, in their view, increase them.

The Office of Road Safety, in order to alleviate concern, commissioned this project to clarify the legal implications surrounding their use.

## 1.2 GENERAL AIM OF THE PROJECT

As the title of the project indicates, the aim was to clarify legal implications of the use of frangible or breakaway poles. This involved an investigation into the legal liability of the various State instrumentalities and authorities who decided on the type of pole to be utilised or who control the installation or maintenance of the pole or signal. This investigation had two aspects.

First, it required an examination of whether an instrumentality would incur liability if a breakaway pole fell, injuring a motorist, a passenger or pedestrian, or caused property damage.

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5. J. C. Fox, M. C. Good and P. N. Joubert, *Collisions with Utility Poles*, (Parkville: Department of Mechanical Engineering in the University of Melbourne, 1979).

6. *Id.* 355.

7. *Id.* 314.

8. *Id.* 357.

9. J. Epstein, "Roadside Hazards — the Legal Implications", *Fixed Roadside Hazards Symposium*, October, 1977, jointly sponsored by the Australian Road Research Board and the Department of Transport, (Vermont: ARRB, 1977).

Second, it required an investigation of whether an instrumentality which used a rigid pole when a break-away one would be safer (or merely maintained a rigid pole in a position where it posed a danger to motorists) could incur liability for damage sustained by a motorist or a passenger from a collision with such a pole. In other words, could an instrumentality incur liability for failing to use the safest device available?

Roadside objects encompassed by this study were poles which support overhead conductors or street lights, sign posts and traffic control signals. The liability of instrumentalities in all the States was examined.

### **1.3 SPECIFIC OBJECTIVES**

The specific objectives of the project can be broadly summarised as follows. First, it was necessary to identify the legal concepts which would be relevant when a vehicle impacts a fixed roadside object such as a utility or luminaire pole, a sign post, or a traffic control signal. Second, the legally relevant facts, which are enumerated below, had to be ascertained —

Who owns the object struck (i.e., the pole, sign or signal)?

Who controls the object?

Who inspects the condition of the object?

What is the location of the object vis-à-vis the road?

What is the design of the object:

Is safer equipment available?

Are safety devices absent?

Why did the motorist leave the road?

The project investigators concentrated on the following general questions:

If a frangible or breakaway pole were to fall and injure a pedestrian or motorist or cause property damage, would there be any liability on the part of the owner or controller of the pole based on the ordinary principles of negligence?

What is the behaviour of the various types of breakaway or frangible poles indicated by the experience in the jurisdictions which use them? Has there been any increase in injuries to or damage suffered by pedestrians or other motorists as a result of a falling column? Are there any constraints on their use which is justifiable by experience?

What is the behaviour of rigid poles compared to breakaway poles? What is the difference in casualty and property damage rates?

If a motorist or his passengers suffered injury or damage as a result of a collision with a rigid pole, are there circumstances where the owner or controller of the pole could incur liability on the ordinary principles of negligence? What are the legal implications for authorities for failing to use breakaway designs or failing to take steps to minimise the risk posed?

Which authorities in each Australian State would be potential defendants?

### **1.4 ORGANISATION OF THE PROJECT**

The task of identifying the legal concepts and obtaining the legally relevant facts involved research into reported case law and statutory material as well as the collection of factual data. The investigators approached the project with a view to providing the factual and legal material which a plaintiff's lawyer would require should a legal action be contemplated.

Each of the six jurisdictions presents its own institutional and legal environment. For each jurisdiction, four different categories of roadside object (utility poles, sign posts and traffic control signals) have been studied. In each State a number of different instrumentalities were involved and material had to be obtained regarding their legal obligations as well as the factual/operational information concerning the devices currently in use. Additionally, because the legal position is affected by the state of technology, the investigators had to obtain data on alternative devices available, their safety record, and cost.

A wide range of individuals and organisations both in Australia and overseas were consulted. As part of the project, two briefs were prepared and the opinion of a member of both the Queensland and Victorian Bar

was obtained regarding hypothetical collisions with roadside objects. Reference is made to these opinions later in this report.

## **1.5 PRINCIPAL RESEARCH TASKS**

### **1.5.1 Case Law Involving Roadside Objects**

The first task was to determine the current state of the law in Australia regarding liability of an authority for maintaining a hazardous object along the road. Searches were undertaken of reported cases in each Australian jurisdiction. Additionally, insurance companies and State highway authorities were contacted to ascertain if cases of this nature had been settled without court action, or had been decided in trial courts but had not been reported.

Indices and digests in other common law jurisdictions: New Zealand, Canada, the United Kingdom and the United States, were searched for reported cases involving roadside objects. In relation to the American situation, the investigators, with the assistance of Professor Marc A. Franklin of Stanford University School of Law, were able to utilise a computerised legal data bank, known as LEXIS, which greatly simplified the task of collecting relevant American material.

### **1.5.2 Legal Literature on Roadside Objects**

The topic of roadside objects has been largely neglected by legal scholars. The seminal work in the area is a book, *The Law and Roadside Hazards*,<sup>10</sup> produced in 1975 under the auspices of the Insurance Institute for Highway Safety by a firm of Washington, D.C. lawyers. Though the area is beginning to capture the attention of other legal writers, much of the useful literature for the project emerged from sources not traditionally used by lawyers. Especially useful was the recent source material obtained by the use of the computerised data bases referred to in paragraph 1.5.8.

### **1.5.3 Responsibilities of State Instrumentalities for Roadside Objects**

The other major preliminary task was to ascertain the duties and responsibilities of authorities and instrumentalities in each State in relation to the maintenance, control and ownership of the roadside objects selected. As four categories of objects were chosen, the statutory framework of each State authority involved had to be analysed. The statutory material is referred to later in this report, and extracts from the relevant Acts and Regulations are found in the appendices to this report.

### **1.5.4 Statistical Analysis of Collisions with Roadside Objects**

The investigators found that there was no reliable Australia-wide statistical record of collisions of motorists with roadside objects. States differed in the classification of these types of accident, some recording only the first object struck when a vehicle left the road, whereas others differentiated between primary and secondary collisions. As a result of the lack of such statistical information, figures produced by individual States, or by other projects and studies, were used as source material. Particularly valuable was the recent Melbourne University Study<sup>11</sup> which provided a reliable assessment of the number of vehicle-pole collisions in the Melbourne metropolitan area and the consequences of such collisions.

### **1.5.5 Attitude of Insurers to Roadside Object Collisions**

The investigators contacted five Australian insurance companies, as well as the Insurance Council of Australia, in an attempt to ascertain the cost to the insurer of collisions with roadside objects and their attitude to claims from State authorities for damage to an authority's assets.

Some insurers and insurer organisations contacted in the United States stated that their attitude was to resist claims from authorities unless there was an assurance that the object struck would be replaced with a design which was safer to the motorist. In addition, they reported that a campaign had been instituted to raise public awareness regarding the dangers roadside objects posed and to make the roadside environment safer.

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10. J. Fitzpatrick, M. N. Sohn, T. E. Silfen and R. H. Wood, *The Law and Roadside Hazards*, (Charlottesville: The Institute and The Michie Co., 1975).

11. Fox, Good and Joubert.

The investigators, in their contact with Australian insurers, found them co-operative and helpful and interested in the attitudes of their American counterparts. Nevertheless, the investigators found that little consideration, to date, had been given to requesting State authorities to replace damaged assets with more "forgiving" equipment.

The investigators found that it was impossible to obtain an accurate assessment of the cost to insurance companies of collisions with roadside objects. The principal reason for this was that there was no mechanism by which the relevant data could be obtained from the insurance company's computers. Their retrieval mechanisms operate, naturally, by name of the claimant or policyholder, and we were unable to supply names of claimants, merely the type of collision which was relevant. The investigators were given complete access to the files of one insurance company which, although it did not contain personal injury details, was helpful in providing data regarding the cost to insurance companies of payments to State authorities for damaged assets. A list of insurers contacted, both Australian and American, is given in Appendix A. Recommendations regarding the collation of further data and for disseminating information to insurers are found later in this report.

#### **1.5.6 Attitudes and Experience of State Authorities to Roadside Object Collisions**

A major aim of the project was to ascertain the Australian experience with roadside object collisions. The investigators considered that it was important to find out what types of equipment were in use in each Australian jurisdiction as well as the attitudes of authorities to the use of safer equipment and any problems associated therewith.

In order to accomplish this, the investigators visited every State highway department and electricity supply authority, as well as other bodies such as local councils, where possible. A list of all organisations and individuals contacted is found in Appendix A.

#### **1.5.7 Attitudes and Experience of Overseas Jurisdictions to Roadside Object Collisions**

It became evident to the investigators at an early stage that long-term Australian experience with roadside objects was, for the most part, limited to the use of rigid roadside objects, and the use of safer equipment was relatively recent. It was therefore determined to contact other jurisdictions to gain the benefit of their longer and more varied experience with roadside equipment. The investigators were always mindful that overseas experience with different kinds and models of equipment could not casually be treated as relevant to Australian conditions. However the supplementation of Australian experience with overseas knowledge provided a more secure factual base upon which to apply legal principles.

Questionnaires and requests for materials were sent to each of the American State Departments of Highways and Transport, the Federal and Provincial Highway Departments in Canada, as well as to the Road Department in New Zealand. Contact was also made with the Road Institutes in Sweden and Holland. A list of the individuals and organisations which responded is found in Appendix A.

#### **1.5.8 State of Technology**

As the state of technology is relevant in determining liability for roadside objects, the investigators sought to obtain an understanding of the attributes of different types of equipment currently available, or being tested, such as frangible and slip-base poles, wrap-around poles, impact attenuators, modification devices for rigid poles, and high mast lighting.

Neither of the investigators had a science or engineering background and it was often necessary to obtain advice from experts in these fields in order to understand the devices in question. This, of course, is the situation which would face a plaintiff's lawyer when contemplating an action.

The investigators acquainted themselves with the research in progress in this field. A search was conducted on Australian Information Network (AUSINET), an on-line information retrieval service. Three data bases were searched on AUSINET: International Road Research Documentation, Social Sciences Citation Index, and the National Technical Information Service.

The investigators conducted additional searches on the American DIALOG system through the Commonwealth Scientific and Industrial Research Organization (CSIRO). The engineering index, COMPENDEX, was consulted and a retrospective search was conducted on the National Technical Information Service data base.

A comprehensive review of the available literature was obtained and contact made with researchers in the field. The salient articles consulted are listed in the Bibliography and the names of individuals and organisations involved in research who responded to requests for information, are listed in Appendix A.

Contact was also made with representatives of some of the manufacturers who supply street lighting columns in Australia to aid in appreciating the variety of equipment available, the specifications and cost factors, and the range of safer products likely to be available in the foreseeable future.

## **1.6 FORMAT OF THE REPORT**

The remainder of the report takes the following format:

- Chapter 2 describes the characteristics of the roadside environment, the incidence, severity and cost of collisions with roadside objects.
- Chapter 3 is a discussion of the different devices available for making the roadside environment safer. This includes devices and methods currently in use, both in Australia and overseas, to minimise the incidence of collisions as well as their severity.
- Chapter 4 is a discussion of the responsibilities of the various State authorities for the maintenance, control and ownership of roadside objects. This includes an analysis of their potential liability, based on the applicable statutory provisions for maintaining a hazardous object.
- Chapter 5 describes legal concepts applicable to an action in respect of a collision between a vehicle and a roadside object. Case law from the jurisdictions surveyed is analysed in this chapter.
- Chapter 6 is a discussion of the responsibility that liability insurers undertake, or could undertake, to promote safer roadsides. The programme undertaken by some insurer organisations in the United States is explained. Recommendations are made to disseminate this information to insurers in Australia and to foster discussion of the issues involved.
- Chapter 7 contains a summary and recommendations.



## **CHARACTERISTICS OF THE ROAD ENVIRONMENT: INCIDENCE, SEVERITY AND COST OF FIXED ROADSIDE OBJECT COLLISIONS**

### **2.1 OUTLINE**

It is the aim in this chapter to provide the reader with a general overview of the hazards posed by fixed roadside objects, and specifically, the hazards posed by rigid utility and street lighting poles, sign posts and traffic control signals. The investigators have attempted to indicate, bearing in mind the inadequacy of statistical data, the incidence, severity and cost of these types of collisions.

A motorist who has suffered an injury or had an injury made more severe by a collision with a roadside object will wish to obtain compensation for the damages sustained. The most usual method for obtaining such compensation is a common law action in negligence. The law of negligence does not impose a liability on a governmental authority to pay such damages unless that authority acted unreasonably in the placement or design of the roadside object involved in the collision.

To determine whether an act is unreasonable, a court must balance the likelihood that the act will cause injury, and the predictable extent of the injury, against the cost of preventing the injury, and the social utility of the act. Therefore, a background indicating the incidence and severity of pole collisions is necessary to enable the reader to appreciate why a failure to incorporate safer devices could constitute negligence. It also provides an explanation for the development of safer roadside equipment.

### **2.2 FIXED ROADSIDE OBJECTS**

Road accidents are rarely caused by a single factor. Although a driver's action is usually the last link in the chain, it is by no means the only factor to be taken into account in the causation of accidents. Two other factors are of importance: the road environment and the vehicle. As the Expert Group on Road Safety reported in 1972, emphasis has been placed on attempts to modify driver behaviour, by increased and improved driver education or intensive road safety campaigns. This approach, they suggested, has had only minimal effectiveness. In their report *The Road Accident Situation in Australia: A National Review*, they stated:

Although the driver may appear primarily to be at fault in many accidents, there is clear evidence that in the shorter term making the road and/or the vehicle safer is often cheaper and more effective in reducing both the incidence and severity of accidents than are attempts to modify human behaviour.<sup>1</sup>

#### **2.2.1 Definition and Categories of Fixed Roadside Objects**

One feature of the roadside environment, fixed roadside objects, is commonly involved in accidents, and accounts for a large proportion of road deaths, injuries and property damage annually in Australia. A number of studies have identified the hazards posed by fixed roadside objects. The category of fixed roadside objects includes all obstacles of a permanent or semi-permanent nature located in the area adjacent to the roadway within nine metres of the edge of the road. . . . This nine metre roadside edge is often termed the "recovery area", which suggests that its purpose is to provide sufficient space in which a driver, who has left the roadway,

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1. Commonwealth of Australia, Department of Shipping and Transport, *The Road Accident Situation in Australia: A National Review*, (Canberra: A.G.P.S., 1972), 9-10.

can regain control of his vehicle. This purpose is not achieved when the area is cluttered with rigid obstacles and obstructions.

The category of fixed roadside objects includes such items as telephone boxes, guardrails, guide posts, trees, traffic control signals, and poles — both utility (cable-supporting) and luminaire (street lighting). The range of items included in this category is indicated in Table 1.<sup>2</sup>

### 2.2.2. Incidence of Fixed Object Collisions

Various estimates have been made regarding the average number of fixed objects located in the area adjacent to the travelled way. Boughton and Milne counted the number of fixed roadside objects on a cross-section of roads in Victoria, including inner city residential streets, urban arterial roads, rural highways and freeways. They found that the roadside surveyed, which totalled 5 kilometres, had 518 fixed roadside hazards, or one object every 9.6 metres.<sup>3</sup> Hall, who conducted a study of fixed roadside hazards on urban non-highway roads for the Maryland State Highway Administration, found as many as 300 objects per mile in a single direction of travel.<sup>4</sup>

As Boughton and Milne point out, the statistics supplied by the various Australian States in relation to accidents involving fixed roadside objects are far from uniform. Each State appears to classify fixed object collisions in a different manner. As the authors point out, this has resulted in an under-estimation of the number of accidents involving fixed objects. Nevertheless, Boughton and Milne have estimated that collisions with fixed roadside objects account for approximately 570 deaths, 14,300 persons injured and 63,000 cases of property damage in Australia each year.<sup>5</sup> It is interesting to note that the Expert Group on Road Safety estimated that 1,000 fatalities and 20,000 injuries result from collisions with fixed objects annually.<sup>6</sup>

It is obvious that the number and nature of some of the fixed objects along the road pose a real source of danger to the motorist who leaves the roadway. Progressive traffic engineering theory throughout the world now holds that the highway environment must be designed to take account of the fact that motorists will leave the carriageway. As an American Congressional Representative stated in a Congressional hearing on the subject of fixed roadside hazards:

Regardless of the reasons why a driver may leave the paved portion of a high-speed highway, roadside areas should be sufficiently clear of obstructions to give him an opportunity to regain control of his car. He and his passengers should be given a reasonable chance of survival and not be faced with the death penalty for a comparatively minor error.<sup>7</sup>

## 2.3 INADEQUACY OF DATA REGARDING FIXED OBJECT COLLISIONS

Numerous commentators have recognised that Australian statistics on collisions with fixed roadside objects are inadequate.<sup>8</sup> This inadequacy makes it difficult to present a true picture of the incidence, severity and cost of fixed object collisions in Australia. Aside from the lack of uniformity among the States and Territories, the data is inadequate in four respects.

First, statistical reports of accidents are far from uniform. Some States classify accidents according to the primary object struck, ignoring the fact that the vehicle may have been involved in a secondary collision which caused injury or damage. This may well result in a distortion of the incidence and severity of accidents in two ways. They may be illustrated by the following two examples:

1. If a vehicle, on leaving the roadway, strikes a guide post and then crashes into a tree with the result that the driver is killed, the statistics would only show a fatality associated with a collision with a guide post. This would lead an observer to erroneously conclude that collisions with guide posts are severe.

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2. Below, 10.

3. C. J. Boughton and P. W. Milne, "Collisions with Fixed Roadside Hazards — An Overview of the Problem", *Fixed Roadside Hazards Symposium*, October 1977, jointly sponsored by the Australian Road Research Board and the Department of Transport, (Vermont: ARRB, 1977), 11-14.

4. J. W. Hall, *Identification and Programming of Roadside Hazards Improvements*, (College Park: Transportation Studies Center of the University of Maryland, 1978), 3.

5. Boughton and Milne, 14.

6. Commonwealth of Australia, (1972), 69.

7. U.S., House of Representatives, Committee on Public Works, Special Subcommittee on the Federal-Aid Highway Program, Ninetieth Congress, First Session, 1967. *Hearings*. Statement made by Rep. W. Cramer (Florida), 3.

8. See, for example, the discussion of this problem in M. C. Good and P. N. Joubert, *A Review of Roadside Objects in Relation to Road Safety*, (Canberra: A.G.P.S., 1973).

2. If a vehicle collided with another vehicle resulting in one of the cars being propelled into a traffic control signal which caused injury to the driver, the accident would be coded as a two vehicle collision. Obviously this method of classification results in a distortion of the incidence and severity of fixed object collisions.

Second, the data is inadequate in the manner in which fixed objects are categorised. For example, striking a pole, depending on the particular State, might mean a utility pole or a street lighting pole, or some other type of pole altogether. This failure to recognise the importance of pole function makes cost-benefit analysis difficult.

Third, not all States collect data on accidents which result in property damage only. New South Wales, for example, requires the reporting of an accident if it involves a casualty or property damage of \$300 or more, whereas in Victoria, accidents are not usually reported unless there is a casualty. This, of course, results in an under-reporting of the incidence of particular types of fixed object collisions, as well as affecting estimates regarding severity and cost.

Fourth, most States do not classify the severity of the injury which results from a collision; it is termed a casualty or a fatality. There is no indication of whether the casualty is serious or minor. This makes overall estimates regarding severity and cost difficult.

## 2.4 SOURCES OF DATA USED IN THIS CHAPTER

As pointed out above, official Australian statistics distort the road accident picture. Because of this, the investigators have relied on data provided by two Australian studies. The first study, by Vaughan from the New South Wales Traffic Accident Research Unit, examined characteristics of pole crashes in that State.<sup>9</sup> Vaughan's study has one major drawback in that it relies on statistics taken from Traffic Accident Information forms completed by police officers. Their method of coding relies on the primary object struck. Nevertheless Vaughan's study presents some interesting data on pole crashes in the total context of fixed object collisions on New South Wales roads.

The second study relied on for statistical data was that undertaken by Fox, Good and Joubert of the University of Melbourne's Department of Mechanical Engineering.<sup>10</sup> This study provided data concerning the environmental, vehicle and human factors involved in pole collisions. In this "in-depth" study of pole collisions in Melbourne's metropolitan area over an eight month period, the investigators relied on tow truck operators for reports of vehicle-pole collisions. This survey included secondary pole collisions. During the survey period, 879 vehicle-pole collisions resulting in vehicle disablement were investigated.

In this chapter reference is also made to overseas studies where the investigators were of the opinion that Australian data were lacking or required confirmation, and the overseas data were relevant or comparable to Australian conditions. In particular, reference is made to Hall's study of single-vehicle fixed object (SVFO) collisions on urban non-highway roads in Maryland. Reference is also made to three British studies,<sup>11</sup> two of which were conducted under the auspices of the British Road Research Laboratory, now known as the Transport and Road Research Laboratory.

## 2.5 SEVERITY OF FIXED OBJECT COLLISIONS

Not all fixed objects pose the same danger to the travelling public. Table 1, extracted from Vaughan's study, lists the number of reported crashes in New South Wales in 1973 (casualty or \$50 damage at that time) involving particular categories of fixed objects. This Table also shows the percentage of reported crashes which resulted in a casualty from a collision with a particular object.

The figures in Table 1 reveal the contrasting "danger" ratings of different roadside objects. The category which includes telephone boxes, bus shelters, parking meters and sub-stations and the category which includes non-mobile plant and barriers, both have low numbers of reported collisions, being 83 and 20 respectively for

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9. R. G. Vaughan, *The Epidemiology of Pole Crashes*, (Roseberry: Traffic Accident Research Unit of the Department of Motor Transport, 1975).
  10. J. C. Fox, M. C. Good and P. N. Joubert, *Collisions with Utility Poles*, (Parkville: Department of Mechanical Engineering of the University of Melbourne, 1979).
  11. H. J. H. Starks and M. M. Miller, *Roadside Equipment and Accidents*, (Crowthorne: Road Research Laboratory, 1966). Report 22; A. E. Walker, *Field Experience of Breakaway Lighting Columns*, (Crowthorne: Transport and Road Research Laboratory, 1974), Report LR 660; and R. L. Moore, "Less Lethal Lighting Columns". 69 *Light and Lighting*, 1976) 208-209.

the whole of New South Wales for 1973. Both categories have a low casualty rate (percentage of crashes which involve casualties), being 22% and 15% respectively, and no fatalities were recorded for either category. On the other hand, there were only 13 reported accidents involving traffic islands, but 77% of those crashes involved casualties. In other words, the incidence of collisions with traffic islands is very low, but the severity of that type of collision is very high.

Table 1  
**VEHICLE-OBJECT TRAFFIC CRASHES IN NEW SOUTH WALES IN 1973**  
Vaughan, pages 33-34

<i>Description</i>	<i>Crashes</i>	<i>Casualty crashes</i>	<i>Fatalities</i>	<i>Non-fatal casualties</i>	<i>Percentage of reported crashes involving casualties</i>
Bridge hand rail or bridge member	508	195	24	259	38%
Tunnel or underpass, wall or pier	25	9	0	9	36%
Guide posts	1,466	508	40	667	35%
Safety fences	570	180	16	239	32%
Level crossing gates	52	8	0	8	15%
Sign posts	299	66	3	87	22%
Traffic signals	198	68	1	82	34%
Kerbs, box drains and gulley pits	408	171	12	205	42%
Traffic islands	13	10	2	9	77%
Median island/strip	65	36	3	47	55%
Poles	2,557	1,355	75	1,809	53%
Telephone boxes, letter boxes, bus shelters, parking meters, sub-stations, etc.	83	18	0	23	22%
Non-mobile plant, barriers	20	3	0	5	15%
Temporary signs, gravel-stock piles, bridge timber, etc.	18	8	0	10	44%
Trees within roadway boundaries	428	233	15	323	54%
Boulders, outcrops, embankments, cuttings, etc. within roadway boundaries	1,523	548	38	763	36%
Any other type of fixed object (not elsewhere coded) within roadway boundaries	180	46	1	61	26%
Vehicle overturning or leaving the roadway and contacting a tree	1,269	677	81	968	53%
Vehicle overturning or leaving the roadway and contacting boulders, etc.	274	99	19	122	36%
Vehicle overturning or leaving the roadway and contacting a boundary fence or building	2,017	486	17	624	24%
Vehicle overturning or leaving the roadway and contacting any other fixed object	144	58	1	78	40%
<b>TOTAL</b>	<b>12,117</b>	<b>4,782</b>	<b>348</b>	<b>6,398</b>	<b>39%</b>

## 2.6 POLE COLLISIONS

The objects most frequently hit in Vaughan's study were poles, with 2,557 reported crashes in 1973. Over 50% of accidents involving poles produced casualties, with the reported casualty rate being 53%. Although other objects produced higher casualty ratings, namely traffic islands (77%), median islands/strips

(55%), and trees within roadway boundaries (54%), none of these categories of objects involved as high a number of reported accidents as did poles, being respectively, 13, 65 and 428.

In Vaughan's study, pole accidents accounted for 21.1% of all reported fixed object collisions, 28.3% of total fixed object casualty crashes, 21.5% of fixed object fatalities, 28.3% of all non-fatal casualties, and 27.9% of all casualties, both fatal and non-fatal.

It is clear from the data presented by Vaughan that there is a high incidence of pole crashes as well as high severity. As Vaughan states:

*... pole-involved crashes were about three times more serious in terms of fatalities as the 'average' crash reported. ... Poles appear to have been the most dangerous man-made object struck by motor vehicles in New South Wales in 1973.*<sup>12</sup>

During the eight month period in which the Melbourne University Study investigators collected data, 879 vehicle-pole collisions in the Melbourne metropolitan area which resulted in vehicle disablement, were investigated. These collisions accounted for 31 fatalities and 374 injuries requiring ambulance transport.

Comparisons by the Melbourne University Study investigators of the injury statistics produced by their survey with that of Victoria's Road Safety and Traffic Authority and the Motor Accident Board, resulted in their conclusion that the survey, whilst accounting for all fatalities, was conservative in estimating the incidence of pole collisions and the number of injuries resulting therefrom. They estimated that they attained a coverage rate for non-fatal injuries, in the area surveyed, of 65%. On the basis of this, they estimated that pole accidents, both primary and secondary, produce 45 fatalities and 785 injuries in the Melbourne metropolitan area annually.<sup>13</sup>

The authors of the Melbourne University Study, on the basis of data supplied by the Road Safety and Traffic Authority as well as that derived from the Australian Bureau of Statistics, made certain observations regarding primary pole collisions as a percentage of other road accidents. They concluded that primary pole collisions account for 5.8% of road accident fatalities and 4.6% of non-fatal injuries for the whole of Victoria. For the Melbourne metropolitan area they estimated that vehicle-pole collisions (primary only) account for 8.6% and 5.8% respectively, of fatal and injury-producing accidents.<sup>14</sup>

In relation to fixed object collisions, the authors of the survey concluded that primary pole accidents account for 22.2% of fatal fixed object collisions and 32.9% of injury-producing fixed object collisions on a state-wide basis. For the Melbourne metropolitan area, the authors estimated that pole accidents account for 45.3% of all fatal fixed object collisions and 51.9% of all injury-producing fixed object collisions.<sup>15</sup>

The authors of the Melbourne University Study found that 30% of all primary vehicle-pole collisions resulted in casualties (including fatalities). This is in contrast with Vaughan's findings where 53% resulted in casualties. The authors of the Melbourne University Study suggest that this discrepancy may be due to the fact that Vaughan's figures included rural accidents which have a higher severity on average and also because accidents resulting in minor property damage may have been under-reported in the New South Wales survey.<sup>16</sup>

Although there are discrepancies between the two studies, it is clear that somewhere between one third and one half of all vehicle-pole collisions result in casualties. As the authors of the Melbourne University Study point out, if one measures severity in terms of the number of fatalities per 100 casualties, pole-vehicle collisions are 1.5 times greater in severity than the average accident.<sup>17</sup>

Other studies have confirmed the dangers posed by poles in general and street lighting poles in particular. Hall,<sup>18</sup> in his study of single-vehicle fixed object (SVFO) collisions on urban non-freeway roads in Maryland, devised a severity index for each category of fixed object based on the results of 20,000 accidents which occurred between 1973 and 1975. He calculated the severity index as the sum of fatal accidents and injuries for the particular category of fixed object divided by the total number of accidents. The results are shown in Table 2. He found light supports had the highest severity rating of all objects struck, .55, which is slightly higher than trees, shrubbery and other poles, and significantly greater than the severity rating for the "average" fixed object collision, .44, and much greater than the severity rating for all other accidents, .34.

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12. Vaughan, 33-34, emphasis added.

13. Fox, Good and Joubert, 33.

14. *Id.* 31.

15. *Id.* 32.

16. *Id.* 36-37.

17. *Id.* 83.

18. Hall, 5.

Table 2

**SEVERITY INDICES FOR SINGLE VEHICLE FIXED OBJECT ACCIDENTS**

Hall, page 5

<i>Type of object</i>	<i>1973-1975</i>	<i>Type of object</i>	<i>1973-1975</i>
Construction barrier	.27	ALL SVFO accidents	.44
Other fixed object	.28	Culvert, ditch	.46
Sign support	.28	Embankment	.51
Fence	.31	Bridge	.51
All other accidents*	.34	Other poles	.53
Curb, wall	.35	Tree, shrubbery	.53
Building	.38	Light support	.55
Guardrail	.40		

\* Includes all accidents which did not involve a fixed object.

The Transport and Road Research Laboratory has conducted research on the hazards posed by roadside objects. In a report published in 1966, Starks and Miller of the then British Road Research Laboratory conducted a survey of some 900 accidents in which 12% of the collisions involved a roadside object. As Starks and Miller indicate, their findings are subject to two qualifications. First, they acknowledge that accidents involving minor injury or property damage were probably under-represented in their sample. Second, about two-thirds of the accidents occurred on "A" category roads which had no posted speed limits and it is generally accepted that accidents which occur on roads without speed limits are usually more severe. Starks and Miller suggest that because of these two factors, the severity of the accidents may be exaggerated in the sample.<sup>19</sup>

Table 3 below, is extracted from Starks and Miller's report and sets out the severity of injuries sustained in collisions with roadside obstacles. Lighting columns accounted for 30% of the total number of fixed object collisions in the sample. Of the 98 occupants in the 56 vehicles (including motorcycles) involved in collisions with lighting columns, only 18, or 18.3%, escaped injury, and of these 18 occupants, 7 were in the heavier goods vehicles. Forty-six occupants, or 46.9%, were either killed or seriously injured in collisions with lighting columns in the sample.<sup>20</sup>

Table 3

**ROADSIDE OBJECTS INCLUDING OTHER VEHICLES STRUCK BY DIFFERENT CLASSES OF VEHICLE AND THE SEVERITY OF THE RESULTING INJURIES**

Starks and Miller, page 5

<b>CARS</b>							
<i>Object struck, including other vehicles</i>	<i>Number of vehicles</i>	<i>Number of people injured and severity of injuries</i>			<i>Total number injured</i>	<i>Total of people uninjured</i>	<i>Total number of people concerned in accidents</i>
		<i>Slight</i>	<i>Serious</i>	<i>Fatal</i>			
Lighting column	35	31	25	8	64	10	74
Tree	28	21	21	5	47	4	51
Telegraph post	15	14	7	1	22	7	29
Traffic sign	14	8	3	2	13	9	22
Bollard	7	4	2	4	10	3	13
Wall	17	8	6	3	17	8	25
Fence	22	10	5	2	17	17	34
<b>TOTAL</b>	<b>138</b>	<b>96</b>	<b>69</b>	<b>25</b>	<b>190</b>	<b>58</b>	<b>248</b>

19. Starks and Miller, 2.

20. *Id.* 5.

GOODS VEHICLES							
Lighting column	9	2	—	—	2	7	9
Tree	6	2	3	5	10	1	11
Telegraph post	1	—	—	—	—	1	1
Traffic sign	5	3	—	—	3	3	6
Bollard	1	—	—	—	—	1	1
Wall	5	3	1	—	4	4	8
Fence	6	—	—	—	—	6	6
<b>TOTAL</b>	<b>33</b>	<b>10</b>	<b>4</b>	<b>5</b>	<b>19</b>	<b>23</b>	<b>42</b>

  

MOTORCYCLES							
Lighting column	12	1	4	9	14	1	15
Tree	1	1	—	—	1	—	1
Telegraph post	1	—	—	1	1	—	1
Wall	1	—	—	1	1	—	1
Fence	3	—	3	2	5	1	6
<b>TOTAL</b>	<b>18</b>	<b>2</b>	<b>7</b>	<b>13</b>	<b>22</b>	<b>2</b>	<b>24</b>

  

<b>Grand Totals</b>	<b>189</b>	<b>108</b>	<b>80</b>	<b>43</b>	<b>231</b>	<b>83</b>	<b>314</b>
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Table 4, which is derived from Starks and Miller's study, illustrates the difference in accident severity between lighting column collisions and collisions with other types of roadside objects and other types of accidents. The results show clearly that lighting column collisions are more likely than other types of collisions to result in an injury. For example, the possibility of an occupant sustaining an injury in a lighting column accident is 11% greater than in other roadside object collisions and 62% greater than in all other accidents. Not only is it more likely that injury will be sustained in a collision with a street lighting column, it is also likely that the injury will be severe. As Table 4 shows, 46.9% of occupants involved in a light pole crash received a serious or fatal injury, contrasted with 39% in roadside obstacle accidents and 27.5% in all other accidents.<sup>21</sup>

Table 4  
**INJURY LEVEL SUSTAINED IN LIGHTING COLUMN ACCIDENTS CONTRASTED WITH  
 ACCIDENTS INVOLVING ROADSIDE OBJECTS AND ALL OTHER ACCIDENTS**  
 Starks and Miller, pages 5-7

Class of accident	Percentage of all people involved having injury shown				Total
	Fatal	Serious	Slight	None	
Roadside object accidents	13.5	25.5	34.5	26.5	100
		39.0			
Lighting column accidents	17.3	29.6	34.7	18.4	100
		46.9			
All other accidents	8.2	19.3	22.9	49.6	100
		27.5			

Tables 5 and 6 are also extracted from Starks and Miller's study, and relate to the damage sustained by a car expressed in terms of a damage index. This damage index is based on measurements of deformation to the

21. *Id.* 5-7.

vehicle superstructure, passenger compartment and chassis. The authors suggest, relying on earlier studies, that there is a close correlation between the damage index (taking into account the weight of the car) and the severity of the injuries sustained by the occupants. As the damage index rises, so too does the severity of the injury sustained. Table 5 equates the damage index for roadside object collisions and other collisions with the severity of the injury sustained.<sup>22</sup>

Table 5

**DAMAGE INDEX AND SEVERITY OF INJURY OF PEOPLE INJURED IN ROAD ACCIDENTS INVOLVING ROADSIDE OBJECTS**

Starks and Miller, page 11

<i>Severity of injury*</i>	<i>Average value of damage index/car weight</i>	
	<i>Roadside object accidents</i>	<i>All other car accidents</i>
Fatal	49	55
Serious	40	40
Slight	31	24
Uninjured	11	8

\* If more than one person was injured in a given car, then the most severe injury was taken.

Table 6

**DAMAGE INDEX IN PERSONAL INJURY CAR ACCIDENTS INVOLVING DIFFERENT TYPES OF ROADSIDE OBJECTS**

Starks and Miller, page 11

<i>Type of roadside object</i>	<i>Average value of damage index/car weight</i>	
Lighting column	(21)*	42
Tree	(21)	37
Telegraph pole	(12)	34
Traffic sign	(5)	32
Bollard	(4)	30
Wall	(6)	45
Fence or crash barrier	(9)	29
All above		37

\* Figures in brackets denote number of items of roadside objects in sample.

Table 6 gives the average value of the damage index for accidents involving particular items of roadside objects. This Table is of interest, even though the numbers in the sample are small, in that it suggests that lighting columns have an average damage index of 42, which places them just slightly under the highest ranking piece of roadside object, walls, the average index for which is 45. This index of 42 for lighting columns, according to Starks and Miller, corresponds to a "serious" rating of injury.<sup>23</sup>

Before turning to the Australian situation, it is of interest to review the statistics produced by two studies which estimated the number and severity of street lighting pole collisions in Great Britain in 1972 and 1974.<sup>24</sup> These figures give some idea of the magnitude of the problem faced in a more heavily populated country. It is revealing that the two studies produced such similar estimations of the accident severity of street lighting collisions. The two studies suggest that some 60% of these collisions result in property damage only, 1.6% result in a fatality, and 38.4% result in personal injury. The statistics are shown in Table 7 below.

22. *Id.* 11.

23. *Id.* 12.

24. Walker, 9; Moore, 208.



Table 7

**STREET LIGHTING COLUMN COLLISIONS IN THE UNITED KINGDOM IN 1972 AND 1974**

Walker, page 9; Moore, page 208

<i>Injury level</i>	<i>1972</i>		<i>1974</i>	
Fatal	220	(1.6%)	248	(1.7%)
Serious	2095	(15.2%)	2155	(14.9%)
Slight	3181	(23.2%)	3396	(23.4%)
Damage only	8244	(60.0%)	8700	(60.0%)

It is difficult to quantify with any precision the annual number of accidents in Australia involving lighting or other poles, much less the resulting number of injuries and fatalities or property damage. Few statistical summaries differentiate between the type of pole hit. In addition, as mentioned earlier, there are usually methodological discrepancies between the various data-gathering agencies, e.g. the differences between first and second object struck. Nevertheless, it is possible to obtain some idea of the number of street lighting pole collisions in particular jurisdictions, although it may prove difficult to extrapolate and apply these findings to the whole in Australia.

Vaughan,<sup>25</sup> one of the few Australian researchers in this area, found in his study of pole accidents in New South Wales during 1973 that 2,557 accidents involved poles of some description. Vaughan did not analyse these collisions by the type of pole involved, but he did provide some information which at least assists in quantifying the frequency, although not the severity, of collisions with certain types of poles.

Vaughan took a random sample of 10% of the reported pole accidents and examined the records in order to determine what type of damage was done to the pole. This makes it possible to obtain some idea of the number of lighting poles involved in the total figure of 2,557, and thus to arrive at some estimate of the annual figures of street lighting poles struck, although no conclusions can be drawn regarding severity of these pole collisions. Vaughan's figures regarding the type of pole hit are provided in Table 8.

Table 8

**POLE COLLISIONS IN NEW SOUTH WALES BY POLE FUNCTION**

Vaughan, page 86

<i>Type of pole</i>	<i>Number of accidents</i>	<i>Percentage of total</i>	<i>Estimated total accidents</i>
Unspecified	6	2.4	61
Power	37	14.8	378
Telegraph/telephone	56	22.4	573
Lighting	20	8.0	205
Combined power and lighting	78	31.2	798
Combined power, lighting and telegraph	4	1.6	41
Combined power and telegraph/telephone	45	18.0	460
Other	4	1.6	41
<b>TOTAL</b>	<b>250</b>	<b>100.0</b>	<b>2557</b>

As shown in Table 8, Vaughan found that 32% of the poles in his random sample did not carry power cables, whereas 65.6% did, either alone or together with telephone/telegraph wires or luminaires or both, and 2.4% of the poles were of an unspecified type. Poles carrying only luminaires account for only 8% of his sample.

If one applies the percentages derived from Vaughan's random sample to the number of pole accidents reported in 1973, the number of accidents involving a particular category of pole can be determined. These figures are shown in the far right-hand column of Table 8.

25. Vaughan, 86.

Poles which do not carry power cables (those classified by Vaughan as either lighting, telegraph/telephone, or other) account for 819 of the 2,557 reported pole accidents, or roughly one out of every three pole-vehicle collisions. Collisions with street lighting poles alone would account for approximately 205 accidents in that year.

Although no conclusions can be drawn regarding the severity of accident resulting from collisions with particular categories of poles in Vaughan's sample, it is worth recalling that Vaughan found that of the 2,557 pole accidents reported, 1,355 or 53% of those crashes resulted in 75 fatalities and 1,809 injuries.

The Melbourne University Study also produced data on the incidence of street lighting column collisions. They analysed the particular type of pole, both by material of construction (wood, steel or concrete) and function (power, luminaire, tram etc.). They recorded the severity of the accident in two ways. First, they classified the aftermath of the accident broadly in terms of accident severity (i.e. fatality, personal injury, property damage only) as well as more specifically in terms of the degree of severity of the personal injuries. Table 9 is derived from their analysis of broad accident severity whereas Table 10 illustrates the severity of the personal injury category.<sup>26</sup>

From Table 9 it can be seen that collisions with lighting columns resulted in 196 accidents during the eight month survey period, with 8 fatalities and 55 instances of personal injury. Although lighting pole collisions represented only 22.3% of all accidents in the survey, they accounted for 27.5% of all fatalities. Only tramway pole collisions, which constituted 40% of the sample, recorded a more disproportionate fatality rate, 8.7%. But as the authors point out, the difference in degree between the categories varies only slightly, and is probably not statistically significant.<sup>27</sup>

Table 9  
**POLE COLLISIONS IN MELBOURNE: ACCIDENT SEVERITY AND POLE TYPE**

Fox, Good and Joubert, page 65

	<i>Number hit</i>	<i>Fatalities</i>	<i>Personal injury</i>	<i>Property damage only</i>
Luminaire				
Wood	108	5	34	69
Steel	82	3	18	61
Concrete	6	0	3	93
	<hr/> 196	<hr/> 8 (4.08%)	<hr/> 55 (28.06%)	<hr/> 133 (67.86%)
Power				
Wood	501	16	128	357
Steel	10	0	2	8
Concrete	10	0	1	9
	<hr/> 521	<hr/> 16 (3.07%)	<hr/> 131 (25.14%)	<hr/> 374 (71.79%)
Traffic light				
Wood	1	0	1	0
Steel	81	3	23	55
	<hr/> 82	<hr/> 3 (3.66%)	<hr/> 24 (29.27%)	<hr/> 55 (67.07%)
Tram				
Wood	2	0	2	0
Steel	33	2	9	22
	<hr/> 35	<hr/> 2 (5.71%)	<hr/> 11 (31.43%)	<hr/> 22 (62.86%)
Tram and power				
Wood	2	0	0	2
Steel	29	0	10	19
	<hr/> 31	<hr/> 0 (0.0%)	<hr/> 10 (32.26%)	<hr/> 21 (67.74%)

26. Fox, Good and Joubert, 63-66, 215-216.

27. *Id.* 65.

Other				
Wood	6	0	1	5
Steel	8	0	1	7
	<hr/> 14	<hr/> 0 (0.0%)	<hr/> 2 (14.29%)	<hr/> 12 (85.71%)

On the basis of the actual findings of the Melbourne University Study, luminaire pole collisions account for one fatality per month in the Melbourne metropolitan area. It should be recalled that the survey period was for eight months and also that the authors felt that the number of pole collisions as well as the number of personal injuries was under-estimated. Taking these factors into account, it is reasonable to estimate that in the Melbourne metropolitan area, luminaire pole collisions produce 12 fatalities and 185 injuries annually.

The authors of the Melbourne University Study determined the severity of occupant injuries by reference to the Abbreviated Injury Scale (AIS) formulated by the American Association for Automotive Medicine. An AIS score of 5-6, the maximum, corresponds with death or a life-threatening injury, while a score of 3-4 reflects a serious injury, and a score of 1-2 is a minor to moderate injury.<sup>28</sup> Their findings, shown in Table 10, give the AIS score for the worst injured occupant in each crash according to pole type and function.

Table 10

**DISTRIBUTION (%) OF MAXIMUM AIS PER ACCIDENT BY POLE MATERIAL AND FUNCTION**

Fox, Good and Joubert, page 215

<i>Pole material and function</i>	<i>AIS 0</i>	<i>AIS 1-2</i>	<i>AIS 3-4</i>	<i>AIS 5-6</i>	<i>Total</i>
Luminaire					
Steel	74.4	15.7	6.1	3.7	100.0
Wood	63.9	16.7	13.9	5.6	100.0
Cable-supporting					
Steel	68.1	20.6	11.1	2.8	100.0
Wood	71.1	17.8	8.5	3.6	100.0
Traffic lights					
Steel	67.9	21.0	7.4	3.7	100.0

N.B. The authors eliminated concrete poles from their analysis because of the small numbers; tram poles and power lines were classified together as cable-supporting.

From Table 10 it can be seen that in 3.7% of accidents involving steel poles carrying luminaires, the worst injured occupant either died or received life-threatening injuries. In 6.1% a serious injury resulted, and in 15.7 percent of the accidents at least one occupant received a minor to moderate injury.

For collisions with wooden luminaire poles, the results are more severe, resulting in 5.6% of accidents producing an injury score of 5-6, 13.9% resulting in serious injury with a score of 3-4, and 16.7% resulting in a minor to moderate injury score of 1-2.

Wooden luminaire poles produce more casualties than other poles and the injuries are more severe. In fact, in a collision with a wooden luminaire pole, one out of every three accidents will produce an injury, and in one out of every five accidents this will be a serious injury or possibly death. Steel luminaire poles produce less injuries overall and the injuries are not as severe as for wooden luminaire poles. In relation to steel luminaire poles, one out of every four accidents will produce a casualty, but in only one out of every ten accidents will it be a serious injury or death.

It is clear from the overseas and local studies referred to in this chapter that poles in general and street lighting poles in particular are one of the most dangerous forms of roadside hazard. On the basis of the Melbourne University Study, it can be estimated that, on an annual basis, vehicle-pole collisions in the Melbourne metropolitan area will produce the results listed in Table 11 below.<sup>29</sup>

28. *Id.* 215.

29. *Id.* 63-66.

Table 11

**VEHICLE-POLE COLLISIONS: ESTIMATE OF INJURIES AND FATALITIES IN  
THE MELBOURNE AREA ON AN ANNUAL BASIS**

Fox, Good and Joubert, pages 63-66

<i>Pole function</i>	<i>Fatalities</i>	<i>Personal injuries</i>
Luminaire	12	185
Utility	25	441
Traffic	5	81
Other	3	79

## 2.7 COST OF POLE COLLISIONS

As explained in the introduction to this chapter, the investigators' aim is to give the reader a general understanding of the danger posed by certain types of roadside objects in order to appreciate the reasons why a court might find that a failure to use a safer device might constitute negligence. The judges of the ordinary courts are called upon almost daily to calculate the damages suffered by persons who collide with roadside objects (usually a secondary collision) and suffer injuries as a result. This section attempts to supply some quantification, and idea of the method of calculation of the costs of pole collisions.

The objectives of the legal system in the area of awarding damages to persons injured in motor accidents is at least twofold. Firstly the law attempts to fully and adequately compensate the injured parties so as to place them in the same position they were before the accident, insofar as a monetary award can do so. These calculations are made solely by focusing attention on the plaintiff seeking damages and assessing the plaintiff's loss. Secondly the law attempts to eliminate or minimise the costs of accidents to the community. In doing so it attempts to deter the future creation or perpetuation of activities carrying a high risk to others by deterring the defendant and others in positions similar to the defendant, from undertaking such activities.

Applying this analysis to roadside objects, the law would seek, by imposing liability upon a governmental body which acted negligently in the design or location of an object, to discourage that body from placing or designing its poles in the same way in the future. By analogy, other similarly situated instrumentalities would be alerted to the financial disincentive of such behaviour.

The law has not yet been successful in establishing a meaningful incentive to safer behaviour in the area of roadside objects. By a principle common to all western legal systems, it is left to party initiative rather than for the courts to commence proceedings. Our investigations have revealed few instances of an injured party bringing a lawsuit against an allegedly negligent body for injuries suffered in a pole collision. Injured persons have, in general, sought compensation, if at all, from their own first party insurer, health insurance, worker's compensation policy or accident insurance arranged by an employer etc. While such action may offer some level of compensation to an injured party, it effects no proper allocation of resources. The funds are paid by employers, other motorists etc. who may have little or no ability to effect a policy of a safer roadside environment. On the other hand the governmental body which controls the roadside, by its decisions on design and location, is unaffected financially and therefore has no incentive to alter its risk-creating behaviour. As a result, it may be said that the present effect of the law upon the elimination of roadside hazards is minimal.

### 2.7.1 Cost of Individual Pole Collisions

Would the imposition of liability upon a highway authority have a meaningful impact upon the authority's behaviour? The awards of damages, consequent upon a finding of negligence vary considerably with the individual case, but recent personal injury awards have exceeded \$500,000. For example, in *Woods v. Frankcom*, an unreported decision of the New South Wales Supreme Court, 14 December, 1978, an award of \$560,700 was made to a male apprentice motor mechanic, aged 19 at the time of the accident, who was rendered a quadriplegic. The following items made up the award of general damages: provision for adapting a house, \$70,000; future care by housekeepers and nurse, \$220,000; future medical care, \$1,200; future special equipment, \$18,500; lost earning capacity, \$150,000; shortening of life-span, \$1,000; and pain and suffering,

etc., \$100,000.<sup>30</sup> Recoveries of this size are by no means unprecedented, as a review of recent judgments listed in the Australian Legal Monthly Digest will reveal. Unquestionably if a few judgments of this dimension were to be delivered against State instrumentalities for their negligent behaviour with regard to roadside objects, it would affect their perceptions of the economic relevance of roadside safety. To date, however, motorists have not brought such actions.

### 2.7.2. Societal Costs of Pole Collisions

The courts do not attempt to calculate the total costs of pole collisions to any given jurisdiction; that is a task left to statisticians. It is not within the scope of this report to undertake an analysis of the various local and overseas studies into societal costs of motor vehicle collisions. The estimations vary dramatically depending on the philosophy adopted which dictates the choice of the components which contribute to the cost of an accident.<sup>31</sup> There is also the added difficulty of correlating studies done in different years in different countries, for different purposes. With the exception of the Melbourne University Study, few authors have analysed the cost of an accident in relation to the particular object struck. For these reasons the investigators have utilised the data and analysis produced by the Melbourne University Study regarding the costs associated with their sample of accidents in the Melbourne metropolitan area.<sup>32</sup>

The authors of the Melbourne University Study collected data on damage to poles, damage to vehicles, and costs associated with the medical and hospital treatment of the injured person. The average costs for each of these factors is listed below:

Damage to vehicle	\$1,800
Damage to pole	180
Medical and hospital costs:	
AIS level 1	76
AIS level 2	428
AIS level 3	1,420
AIS level 4	3,210
AIS level 5	6,737
AIS level 6	1,102

On the basis of the data obtained, the authors of the Melbourne University Study used three different methods to calculate the societal cost of pole accidents in Melbourne. One method, termed Current Resource Costs, was based on the direct costs attributable to the accident, and consisted of the following components:

- Lost work time
- Legal and court costs
- Vehicle damage
- Medical, hospital and rehabilitation costs
- Insurance administration costs
- Accident investigation costs
- Pole and utility damage.

The second method, termed Total Costs Net of Consumption, included direct and indirect costs. In addition to the components listed above, the following indirect costs attributable to collisions were included:

- Production losses (net of consumption)
- Losses to others
- Traffic delay costs.

30. *A.L.M.D.*, January, 1979, para. 138.

31. The reader is referred to the general discussion in Fox, Good and Joubert, *Collisions with Utility Poles*, Ch. 5, and to the following articles and books: P. N. Troy and N. G. Butlin, *The Cost of Collisions*, (Melbourne: Cheshire, 1971); R. R. F. Dawson, *Current Costs of Road Accidents in Great Britain*, (Crowthorne: Road Research Laboratory, 1971), Report LR 396; A. E. Walker, *Field Experience of Breakaway Lighting Columns*, (Crowthorne: Transport and Road Research Laboratory, 1974), Report LR 660; and J. Paterson, *A Review of the Cost of Accidents*, (Canberra, A.G.P.S., 1973).

32. See: Fox, Good and Joubert, Ch. 5.

The third method of costing, termed Total Costs, included the same components as the second method, with the exception that average consumption is not deducted from foregone earnings.<sup>33</sup>

The results of these methods of determining the societal costs of vehicle-pole collisions annually in the Melbourne metropolitan area are shown below:

Table 12  
**ESTIMATED ANNUAL COST OF VEHICLE-POLE COLLISIONS IN THE MELBOURNE  
METROPOLITAN AREA**

Fox, Good and Joubert, page 260

<i>Costing method</i>	<i>Annual cost (\$ million)</i>	<i>Average cost per accident (\$)</i>
Current resource costs	7.0	3,371
Total costs net of consumption	16.9	8,186
Total costs	23.1	11,175

It is clear from the preceding discussion of the results produced by the Melbourne University Study that collisions with roadside objects, in particular utility and luminaire poles and traffic control signals, carry with them a high societal cost. On a conservative basis, taking into account only those direct costs attributable to a vehicle-pole collision, the cost in the Melbourne metropolitan area alone amounts to \$7 million each year, or \$3,371 per collision.

33. *Ibid.* These three methods of calculating the cost of pole accidents reflect different philosophies regarding the calculation of societal costs. Current resource costs are the direct costs resulting from a collision. Total costs (net of consumption) include the direct costs and indirect costs, less consumption. Total costs, the third method, makes no adjustment for average consumption.

## METHODS AND STRATEGIES FOR MAKING THE ROADSIDE SAFER

### 3.1 INTRODUCTION

In Chapter 2 the investigators pointed to the hazards posed by rigid utility and luminaire poles, sign posts and traffic control signals, and gave some indication of the cost to the community of such collisions. In this chapter, the investigators' aim is to acquaint the reader with methods currently used in some parts of Australia and overseas which reduce the societal cost of such collisions.

The investigators are of the opinion that an explanation of the methods of cost reduction currently in use is essential to an understanding of the central issue with which this report is concerned, namely, whether, in consideration of the facts surrounding a particular collision with a fixed object, a court would find that an authority acted negligently.

The essential elements of negligence are explained in Chapter 5. This chapter is concerned with the evidence necessary to determine one element of negligence: the standard of care owed by a road authority to a road user. This standard is determined by reference to technological development and change, information available about these developments, practices and methods currently in use, i.e. the state of the art. This is not to say that a road authority is necessarily required to adopt the latest safety devices irrespective of other factors. What is required is that an authority, in the performance of its duty in the placement and design of devices located along the road, must act in a manner which is reasonable, taking into account such other factors as cost, accident rates, etc. Resolution of the question of the standard of care applicable is determined by reference to what a reasonable road engineer, fully apprised of the circumstances, would do.

It is therefore necessary to describe the state of the art which currently applies in the area of the design and location of fixed objects along the road. In order to accomplish this, the investigators canvassed practices in all the Australian States as well as the Northern Territory and the Australian Capital Territory. Additionally, questionnaires were sent to the Highway Departments of each of the American States, the Canadian Federal Highway Authority, each of the Canadian Provincial Highway Departments, and to the New Zealand Road Authority. Information requested was received from the road safety bodies of Sweden and the Netherlands. Current literature in the field was surveyed and researchers, both in Australia and overseas, were contacted about the latest developments. (A list of all individuals and organisations which provided information are set out in Appendix A.)

The investigators have attempted to summarise the current state of the art in roadside object design and location in a non-technical fashion, bearing in mind that this report is intended not only for engineers working in the area of road design, but also for lawyers who might contemplate bringing or defending an action against a road authority in respect of a client who has received injuries or suffered damage in a collision with a roadside object. The investigators have attempted to indicate not only the benefits obtained by the use of some of these methods and devices, but also any limitations and disadvantages attaching to their use.

### 3.2 UTILITY POLES

#### 3.2.1 Design

During the last five years researchers, both in Australia and overseas,<sup>1</sup> have experimented with designs for a utility pole which will minimise the severity of an impact by a vehicle. The feature which distinguishes the

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1. J. C. Fox, M. C. Good and P. N. Joubert, *Development of Breakaway Utility Poles*, (Parkville: Department of Mechanical

design of utility poles from that of poles which provide street lighting is the difficulty of ensuring that overhead electric cables are kept aloft when the pole is impacted. To overcome this, the researchers in the field have experimented with a breakaway design whereby, on impact, the pole yields at the base, while the cross beam detaches and remains aloft, thus preventing the cables from falling.

Researchers have suggested that this procedure could be used to modify timber utility poles which are in a particularly hazardous location, although they point out that a modified pole will still pose some degree of danger to the motorist. A device to guide or prevent the pole from falling on the road surface, by means of supporting cables attached to neighbouring poles, has also been suggested.<sup>2</sup>

The investigators' Australian and overseas inquiries have not revealed any jurisdiction which currently regularly uses a modified breakaway utility pole in service. The Minnesota Department of Transportation indicated that they used wood poles with sections weakened, either by drilling two four inch diameter holes one six inches from the ground line and the other eighteen inches from the ground line; or by placing two horizontal chain sawcuts just past the centreline of the pole, cut from opposite sides of the pole, separated by a few inches, with a plywood filler inserted into the sawcuts. These breakaway wooden poles are usually used, however, as temporary poles; the utility companies within that State have opposed moves to weaken their wooden poles to make them breakaway.<sup>3</sup>

The Australian researcher in this area, Fox of Melbourne University, has indicated that the modified pole would only be feasible where other alternatives, such as undergrounding of cables or relocation of the pole, are not possible.<sup>4</sup> The Melbourne University Study was concerned, however, only with the metropolitan roadside environment. On rural highspeed roads with no pedestrian traffic, and high casualty rates, the use of breakaway utility poles, even attended with disruption to electricity services and fallen wires may well represent a lesser societal cost than the present aftermath of pole-motorist collisions.

### 3.2.2 Alternatives: Location of Poles and Undergrounding of Cables

Strictly speaking, the present study is limited to the legal implications of the use of poles of alternative design; the matter of location presents further legal issues not extensively treated here. The legal characterisation of negligence requires an appreciation of the alternatives available to traffic engineers, and the feasibility of the use of such alternatives. For this reason, location is briefly treated here.

The investigators' survey of Australian practices has revealed that there is no uniformity amongst the Australian States regarding the placement of utility poles along the road. Although most States have street works committees,<sup>5</sup> the function of these committees is generally to allocate space both above and below the surface in the area adjacent to the road for the uniform placement of competing services (such as water, sewerage, gas, electricity). For the most part, the placement of objects in this area so as to promote the safety of the road user, is not seen as one of their major functions.

The location of poles along the roadside is a primary factor affecting the frequency and severity of pole collisions. The Melbourne University Study concluded that such factors as the horizontal curvature of the road, the traffic flow rate, the skid resistance of the surface, road width, superelevation of the road, placement on the inside or outside of a bend, and the lateral offset of the pole from the kerb, all influence whether a pole is likely to be impacted and also the resulting severity of such an accident. In relation to the lateral offset of the pole, the authors of the Melbourne University Study confirm the American position regarding the importance of this factor. They state:

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1. *Continued*

Engineering of the University of Melbourne, 1979), [hereinafter referred to as Report No. 2]; J. J. Labra, *Development of Safer Utility Poles*, (San Antonio: Southwest Research Institute, 1977), Interim Report. See also G. K. Wolfe, M. E. Bronstad, J. D. Michie and J. Wong, "A Breakaway Concept for Timber Utility Poles", 48 *Transportation Research Record*, (1974) 64-77.

2. Fox, Good and Joubert, Report No. 2, 1-2, 68.

3. Information received from Mr. C. W. Christie, Director, Traffic Engineering Section, Minnesota Department of Transportation.

4. Australian Road Research Board, Seminar, August 1979.

5. Western Australia has a Public Utilities Services Committee which publishes the *Public Utilities Information Manual* (latest ed. July, 1973); Victoria has a Street Works Co-ordination Committee which has drafted a *Co-ordination of Street Works Code of Practice* in 1978.



The results indicate that the probability of an accident involving poles at the pavement edge is 3.5 times higher than for poles which are set 3 m. back from the road edge. They also show that little further reduction in accident probability is achieved by moving the pole back from 3 m. to a 12 m. offset.<sup>6</sup>

The authors of the Melbourne University Study developed a model which predicts the probability of a pole-vehicle collision taking place at a particular site. They tested their model against actual collisions which occurred during their eight month period of data collection. In this study, which covered 879 pole-vehicle impacts, they found that 10 poles were impacted on multiple occasions, with one being struck 6 times. They estimated that, in terms of major roads in the Melbourne area, approximately 10 percent, or 450 poles (including street lighting poles), present a high risk of collision.<sup>7</sup>

Despite the clear evidence that pole location is a central factor in collisions, none of the Australian States appears to prescribe any general restriction, or policy, on the placement of utility poles in the area adjacent to the road. Although electricity authorities in some States are required to obtain the consent of the local council for the placement of utility poles along the road, more attention is usually given to aesthetics than to road safety. The only area where there is some uniformity amongst the States regarding the placement of utility poles, is in respect of freeways. Practically every State has legislated to prohibit utility poles along this category of road, unless the responsible road authority has consented in writing.<sup>8</sup>

The situation in the United States is quite different in this respect. The American Association of State Highway and Transportation Officials (AASHTO) has recommended that utilities not be permitted within 30 feet (9.14 m.) of the road.<sup>9</sup> Most of the American State Highway Departments observe this restriction, authorising the placement of a pole within this area only if it is shielded from motorists by a guardrail, placed behind a non-mountable kerb, or on the up-slope of a ditch.<sup>10</sup>

### 3.2.3 Legal Implications of Hazardous Utility Poles

As shown by the figures in Chapter 2, utility poles constitute one of the greatest hazards to motorists both in terms of frequency of accidents and in severity. In the opinion of the investigators, it would breach the standard of care owed to a motorist to leave unaltered a hazardous utility pole, or to place a new utility pole in a hazardous location. Utility poles can be identified as hazardous either because they have been involved in a collision or because they have a high accident probability according to the Melbourne University model. At the present time, modification of the design of utility poles does not offer the motorist adequate protection. Therefore the prudent road authority must alter the location of hazardous poles, underground the cables, or use impact attenuators.

Where feasible, hazardous poles should be relocated to a less vulnerable position, upstream or downstream of their present site, or their lateral offset increased to at least 3 m. from the pavement edge. Alternatively, in some circumstances it may be feasible to underground the cables in the area of the hazardous pole, thereby eliminating the dangerous condition. A third option available where it is not feasible to relocate the pole or to underground the cable is to protect the motorist by the installation of a properly designed guardrail, non-mountable kerb, or in some situations, impact attenuators.<sup>11</sup>

It is recognised that, in part, the present hazardous position of certain utility poles has resulted from changing patterns of vehicular traffic, widening of road surfaces, increased speed limits, and other factors beyond the control of the authority which originally constructed, or now owns or controls a particular pole. These factors can affect legal liability. The law does not demand, and cannot expect, that hundreds of thousands of utility poles will be relocated overnight, or otherwise modified. The common law does, however, require that

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6. J. C. Fox, M. C. Good and P. N. Joubert, *Collisions with Utility Poles*, (Parkville: Department of Mechanical Engineering of the University of Melbourne, 1979), 115.

7. *Id.* 187.

8. See Chapter 4.

9. American Association of State Highway and Transportation Officials, *A Guide for Accommodating Utilities on Highway Rights-of-Way* (Washington: AASHTO, 1969).

10. Transportation Research Board, *Policies for Accommodation of Utilities on Highway Rights-of-Way*, (Washington: Transportation Research Board, 1976), (National Co-operative Highway Research Program Synthesis of Highway Practice, 34). Correspondence received from the individual American States which took part in the investigators' survey confirmed that most followed the AASHTO Guide.

11. See below, pp. 36-37.

when a given pole becomes especially hazardous or has been knocked down and needs to be replaced, the responsible institution will act with prudence to eliminate undue risks which threaten a motorist's safety, or that authority will face the imposition of legal liability for the damages which ensue from its failure to take such steps.

In respect of new areas of construction or development, as for example in a new subdivision, or where a road is being reconstructed, attention should be given by the electricity authority, in conjunction with the road authority, to the dangers posed to the motorist by its utility poles. Any threat of legal liability could be eliminated if, in these circumstances, utility poles were set back at least 3 m., preferably more, from the pavement edge, or alternatively, provision made for the undergrounding of the cables.

### **3.3 STREET LIGHTING POLES**

#### **3.3.1 Design Alternatives for Street Lighting Poles**

Poles that only support street lighting do not pose the design difficulties presented by utility poles, as there is no danger of live cables falling which might injure a person. On the other hand, on conventional streets and roads, street lighting poles, unlike utility poles, must be located relatively near to the pavement edge in order to accomplish their function of illuminating the road surface.

Over the last fifteen years, new designs have emerged for street lighting poles which greatly reduce the severity of a collision. These safety poles are no longer experimental in several jurisdictions abroad and constitute the principal form of lighting poles in several places. They are used exclusively in new areas of pole construction, and many states or nations are replacing the older, rigid poles with these safer poles as quickly as finances permit. Looking only at common law jurisdictions, they are in widespread use throughout England, Canada, the United States of America and New Zealand. In Australia the use of these safety poles is still a matter of some dispute. While they are used by several State Highway Departments in Australia, some governmental instrumentalities do not encourage their use. Only in South Australia are they yet used extensively.

These new designs are known generically as breakaway or frangible poles, although technically there is a distinction between the two. In general terms, the principle behind their operation is that, on impact, they yield to the force of the vehicle, thus the vehicle passes through sustaining a minimum of damage and the driver is given an opportunity to regain control over his vehicle. Conventional poles on the other hand, decelerate a car rapidly thus increasing the possibility of injury to occupants and the severity of vehicle damage.

#### **3.3.2 Types of Designs**

**3.3.2.1 Frangible Base Poles.** Basically, there are three types of frangible base designs which are used to support street lighting poles: aluminium shoe bases, aluminium transformer bases and steel progressive shear bases. Generally, these bases contain a weakened section which fails on impact. When a vehicle impacts a pole with a frangible base, either by striking the pole or the base, the force causes the base to fail and, consequently, both base and pole fall over.

**3.3.2.2. Breakaway Poles.** There are two categories of breakaway poles: the slip-base and the frangible coupling. The slip-base, also known as the breakaway joint, originated at the Transportation and Road Research Laboratory in the 1960's. Known as the Cambridge slip-base, it is still widely used today.

The Cambridge slip-base design was subsequently modified into a triangular multi-directional form at the Texas Transportation Institute and later by the California Division of Highways. The principle behind both the Cambridge and the multi-directional slip-base is the same. On impact, the pole slips off its base, usually rotating over the roof of the vehicle as the vehicle passes through.

The other type of breakaway pole is the breakaway or frangible coupling design which consists of a fluted aluminium coupling which shears on impact, thus releasing the pole.

Both of these breakaway designs have been found to be superior to the frangible base designs in low speed collisions.

**3.3.2.3. Other Types of Safety Poles.** In New Zealand, fibreglass poles have been used for a number of years. These poles generally shear on impact. One disadvantage is that after an impact the whole pole must be replaced. Nevertheless, their cost is low and the New Zealand authorities are pleased with their safety record.

One of the newest developments in the area of safety poles, is the ESV pole. This pole, developed in Sweden and used in Northern Europe, operates on a different principle to the frangible base or breakaway types of poles in that, on impact, it does not separate from its foundation.

The ESV pole consists of steel rods spot-welded to a thin sheet steel skin which deforms in response to the impact of the vehicle. The pole does not fall but rather entraps the impacting vehicle. As with the New Zealand fibreglass pole, the ESV pole requires total replacement after the impact.

### 3.3.3 Acceptance of the New Designs

In Australia the only national standard regulating the design of street lighting columns concerns itself with illumination and pole strength relative to environmental factors (e.g. wind loadings). There is no Australian standard for a breakaway light pole nor has the Standards Association of Australia addressed itself to the issue of breakaway light columns, much less prescribed any required specifications.

South Australia is the only State in which breakaway poles are used extensively for street lighting. Breakaway poles are installed by the Highways Department on all roads under their control and also on most council-controlled roads. In fact, the breakaway pole is the standard pole used by the Highways Department; they do not currently install any other design.

In most of the other States, and the two Territories, the use of breakaway poles is the exception rather than the rule. Most States, if they use them at all, number their use at less than one hundred, confining them exclusively to high speed roads.

As mentioned earlier, their use overseas is much more widespread. Table 13 gives an indication of this pattern of usage.

Table 13

#### PATTERNS OF OVERSEAS USAGE OF FRANGIBLE AND BREAKAWAY POLES

<i>Country State/Province</i>	<i>Number of safety poles in service</i>	<i>Types of safety poles in service</i>	<i>Restrictions on use of safety poles</i>
<b>UNITED STATES</b>			
Alabama	4,500. Represents 85% of lighting installations on major highways and freeways.	Frangible and breakaway.	Not used where falling pole would pose greater hazard (e.g. downtown area where heavy pedestrian traffic).
Alaska	Numbers not provided.	Alcoa breakaway coupling; transpo-safety frangible stud.	Not used where speeds less than 30 m.p.h. or where adjacent to sidewalk.
Arizona	1,500. Represents approx. 50% of lighting installations on state highway system.	Breakaway.	Not used where speeds less than 40 m.p.h.; pedestrian activity is a factor.
California	All light poles on freeways (35,000) are equipped with slip bases except those on low speed off-ramps or at the intersection of a ramp with local streets.	Breakaway slip-base.	Used only on freeways. Not used on city streets or low speed roads because may fall on pedestrians or fall across road at intersection.
Colorado	Number not provided. 95% of light poles on state highways have breakaway slip bases.	Breakaway slip-base.	No restrictions noted.
Connecticut	400. Represents approx. 5% of luminaires on expressway system.	Breakaway couplings or frangible transformer bases.	Pedestrian activity is a factor.

<i>Country State/Province</i>	<i>Number of safety poles in service</i>	<i>Types of safety poles in service</i>	<i>Restrictions on use of safety poles</i>
Delaware	Number not provided. All but 15% on highways are breakaway.	Breakaway.	No restrictions noted.
Florida	Number not provided. Committed to policy of frangible poles on all new construction and safety work.	Frangible.	Not used in urban areas where high pedestrian traffic.
Georgia	Number not provided. Approx. 75% of light poles are breakaway.	Breakaway	Used where pedestrian traffic unless greater hazard would be caused by falling pole.
Hawaii	Number not provided.	Breakaway slip-base and frangible cast aluminum base.	Not used where pedestrian traffic.
Idaho	800. Represents approx. 70% of lighting installed on state system.	Breakaway.	Not used where speed is below 35 m.p.h. or where curb and gutter or guardrail. Not used in downtown areas where heavy pedestrian traffic and on street vehicle parking.
Illinois	35,000. Represents approx. 99% of all light poles on state routes.	Breakaway.	Where there is pedestrian traffic, breakaway poles are installed behind the sidewalk.
Indiana	Number not provided.	Breakaway.	Not used where speed is under 40 m.p.h., where curbing, or where pedestrian traffic is anticipated.
Iowa	Number not provided. Approx. 95% of light poles installed by the state on interstate and primary routes are breakaway.	Breakaway slip-base and frangible cast aluminium transformer base.	Not used where pedestrian activity.
Kansas	4,500. Represents approx. 85% of all light poles.	Breakaway.	Not used near store fronts, power lines, in front of sidewalks or bridges, nor where pedestrian activity.
Kentucky	6,000.	Breakaway.	Generally only used on limited access roadways.
Louisiana	Number not provided. All new installations are frangible or breakaway. Efforts being made to replace all existing rigid poles.	Breakaway or frangible.	Where there is pedestrian activity, there are many vertical obstructions for an errant vehicle to strike. Therefore, in these areas, only minor consideration is given to the breakaway feature.
Maine	700. Represents approx. 85% of lighting poles.	Frangible transformer bases or load concentrating couplings.	No restrictions noted.
Maryland	4,500. Represents approx. 75% of highway lighting poles.	Breakaway.	Not used where heavy pedestrian traffic. Breakaway poles are not required where speed is 40 m.p.h. or less if the pole is behind a substantial curb or at least 10 feet from the travelled way.

<i>Country State/Province</i>	<i>Number of safety poles in service</i>	<i>Types of safety poles in service</i>	<i>Restrictions on use of safety poles</i>
Massachusetts	Number not provided. Approx. 90% of all lighting on state highways.	Breakaway.	Breakaway poles are restricted to state highways where there is little or no pedestrian activity.
Michigan	2,600. Represents approx. 35% of lighting poles.	Breakaway.	Department is authorised to construct and maintain lighting only on freeways and therefore no restriction relating to pedestrian activity is relevant.
Minnesota	11,960. Represents approx. 92% of light poles on freeways and highways.	Breakaway.	Breakaway poles not required where speed is less than 40 m.p.h. Not used on top of concrete median barriers or where protected. Not normally installed where pedestrian activity.
Mississippi	Favour high mast lighting. Breakaway poles are used where high mast not possible.	Breakaway.	Breakaway poles are not used where pedestrian activity.
Missouri	Number not provided but represents a considerable percentage of total light poles.	Breakaway.	Not used where substantial pedestrian activity and where speeds less than 40 m.p.h.
Montana	Number not provided.	Breakaway.	Not used where speed is less than 35 m.p.h.
Nebraska	2,000.	Breakaway.	Not used where speed is below 45 m.p.h. or where sidewalks or buildings are located such that a falling pole would cause injury or property damage.
New Hampshire	2,000. Represents approx. 70% of street lighting poles on state highways system.	Breakaway.	No restrictions noted.
New Jersey	11,880. Represents approx. 99% of all light poles on state highway system.	Breakaway slip-base. and frangible base.	No restrictions noted.
New Mexico	Number not provided but is widespread.	Breakaway slip-base.	Not used on urban arterial roads where speed is less than 40 m.p.h. Abutting property and pedestrian density are considered.
New York	Number not provided but approx. 10% of total.	Breakaway.	No restrictions noted.
North Carolina	Number not provided, but breakaway poles are used for new installations and when lighting is added or revised.	Breakaway.	Not used where pedestrian traffic expected.
North Dakota	Number not provided.	Breakaway.	Not where pedestrian activity.
Ohio	Number not provided but represents approx. 50 to 60% of luminaire poles.	Breakaway.	Not used in urban areas where pedestrian activity.
Oklahoma	Number not provided but represents approx. 5 to 10% of total.	Breakaway.	Not where pedestrian activity.

<i>Country State/Province</i>	<i>Number of safety poles in service</i>	<i>Types of safety poles in service</i>	<i>Restrictions on use of safety poles</i>
Oregon	Number not provided.	Breakaway slip-base, and frangible.	No restrictions noted.
Pennsylvania	Number not provided.	Breakaway.	"No comment" recorded.
Rhode Island	Number not provided.	Not ascertainable.	Not used where pedestrian traffic.
South Carolina	At present 200 are to be installed on a freeway. Existing percentage is nil.	Not ascertainable.	Not used where pedestrian traffic.
South Dakota	Number not provided but represents approx. 50% of all lighting poles.	Breakaway.	Not where pedestrian activity.
Tennessee	Number not provided, but installed on all access controlled facilities.	Breakaway.	Restrictions are mainly financial but generally not used where pedestrian activity.
Texas	Number not provided but used on all installations except where restrictions apply.	Frangible transformer base.	Only restriction noted is that frangible poles are not installed on top of concrete median barriers.
Utah	Number not provided but most new installations are breakaway.	Breakaway.	No restrictions noted.
Vermont	Number not provided but not widespread although breakaway poles are the general policy of the state.	Breakaway slip-base.	No restrictions noted.
Virginia	Number not provided but reported moderate use.	Breakaway couplings, frangible bases and breakaway slip-bases.	Not generally used where pedestrian traffic and sidewalk.
Washington	8,000. Represents approx. 47% of light poles on state highway system.	Breakaway slip-base and frangible base.	Not used where speed is 30 m.p.h. or less or where significant pedestrian volumes.
West Virginia	In excess of 2,000.	Breakaway.	Not used where pole is located in front of a non-breakaway feature, where significant pedestrian activity exists, or where pole is located on top of rigid traffic barrier, e.g. concrete median barrier or bridge parapet.
Wyoming	Number not provided but represents approx. 90% of total.	Breakaway.	Not where pedestrian activity.
<b>CANADA</b>			
New Brunswick	1,400. Represents approx. 70% of lighting system.	Breakaway aluminum base.	No restrictions.
Newfoundland and Labrador	Not in use.		
Nova Scotia	Number not provided but approx. 70% of light poles are breakaway.	Frangible cast aluminum base.	No restrictions.

<i>Country State/Province</i>	<i>Number of safety poles in service</i>	<i>Types of safety poles in service</i>	<i>Restrictions on use of safety poles</i>
Ontario	Number not provided but approx. 50% of all new lighting installations are breakaway.	Aluminium pole with frangible base, aluminum pole with cast insert and steel pole with frangible base.	Not used at intersections or sidewalk locations where pedestrian traffic present.
Saskatchewan	Number not provided but the policy of the Department is to install them on new installations and where existing poles require replacement.	Breakaway Safe-T-Base and slip-base.	Although breakaway poles are used where pedestrian traffic exists, consideration is given as to where a pole is likely to fall.
NEW ZEALAND	Number not provided.	Frangible fibreglass pole, breakaway slip-base.	Not used where significant pedestrian traffic.

In the United States, the federal legislature endorsed the use of breakaway devices and required that they be installed on roads receiving federal funding.<sup>12</sup> Standards I. and J. of the regulations made under the Act state:

#### HIGHWAY SAFETY PROGRAM STANDARD NUMBER 12

Highway design, construction and maintenance.

Every State in co-operation with county and local governments shall have a program of highway design, construction and maintenance. Standards applicable to specific programs are those issued or endorsed by the Federal Highway Administrator.

1. The program shall provide, as a minimum that:

...

I. Hazards within the highway right-of-way are identified and corrected.

J. There are highway design and construction features wherever possible for accident prevention and survivability including at least the following:

1. Roadside clear of obstacles, with clear distance being determined on the basis of traffic volumes, prevailing speeds, and the nature of development along the street or highway.
2. Supports for traffic control devices and lighting that are designed to yield or break away under impact wherever appropriate.
3. Protective devices that afford maximum protection to the occupants of vehicles wherever fixed objects cannot reasonably be removed or designed to yield.
4. Bridge railings and parapets which are designed to minimize severity of impact, to retain the vehicle, to redirect the vehicle so that it will move parallel to the roadway, and to minimize danger to traffic below.
5. Guardrails, and other design features which protect people from out-of-control vehicles at locations of special hazard such as playgrounds, schoolyards and commercial areas.<sup>13</sup>

In 1975 the American Association of State Highway and Transportation Officials (AASHTO) published criteria for breakaway supports specifying where they were to be placed, and standards of performance. They stated:

Breakaway supports are designed to yield when struck by a vehicle, thereby minimizing injury to the occupants of the vehicle and damage to the vehicle itself. All new ground mounted signs and luminaires within 30 feet (9.14 m) of a high speed highway shall be placed on breakaway supports, unless they are located behind a barrier or crash cushion which is necessary for other reasons. Even supports outside this 30 feet (9.14 m) corridor should preferably be breakaway where there is a probability of being struck by errant vehicles.

... Dynamic performance under automobile impact must also be considered. ... Satisfactory dynamic performance is indicated when the maximum change in momentum for a standard 2250 pound (1020 kg) vehicle, or its equivalent, striking a breakaway support at speeds from 20 mph to

12. 23 U.S.C., § 402.

13. 23 C.F.R., § 1204.4, sec. 12, standards I and J.

60 mph (32 kmph to 97 kmph) does not exceed 1100 pound-seconds (4893 N-sec.), but desirably does not exceed 750 pound-seconds (3336 N-sec.).<sup>14</sup>

In 1976 the Federal Highway Administration advised States that all new federally funded projects would be required to comply with the AASHTO guidelines.<sup>15</sup>

In 1979 the Federal Highway Administration advised States that because of the growing numbers of subcompact vehicles the weight limit of the test vehicle might, in future, be reduced from 2250 pounds to 1700 or 1800 pounds.<sup>16</sup>

In Australia, the low usage of these safety poles may, in part, be attributable to the lack of a developed national standard. This may be contrasted with the situation in the United States. The declaration of a standard by a national body having responsibilities for road safety in the United States (AASHTO) and the requirement by the Federal Highway Administration that each state comply with the standard in order to be eligible for funding has undoubtedly been responsible, in part, for the proliferation of this safety equipment.

The development of a national standard is not one calling for legal expertise put rather for engineering skills. But the absence of a standard may well have legal implications. Compliance with a standard will not necessarily be regarded by the courts as behaviour sufficient to discharge the requisite standard of care, but would be likely to be used by the court to measure the activities of an instrumentality. The lack of a national standard results in each governmental or highway authority having to design its own warrants or specifications, and exercise its own judgment without the advantageous guidance which would otherwise be available. Similarly, manufacturers are forced to design columns tailor-made to each State or department's requirements, rather than to a nationally accepted standard. Different instrumentalities within the same State or Territory may produce differing requirements, or even be unaware of the designs produced by other users of poles within the jurisdiction.

The legal responsibility of each highway authority would be clarified by the publication of a standard for frangible or slip-base poles. The investigators are aware that the United States standard articulated by AASHTO and the English standard of British Standards Association would not necessarily be suitable to Australian conditions. In particular the different size and weight of cars registered in Australia, the wind loading, different highway speed limits and road configuration would have to be taken into consideration. Nonetheless the aforementioned standard may well serve as a model, or beginning point, for the development of an Australian standard. As a first step, the Highway Departments in each State, led by those who have used the poles for the lengthiest time period, or most extensively, such as South Australia, should promulgate standards for the design and use of these poles. Such a standard should evolve through full-scale dynamic testing, accompanied perhaps by computer simulation or model studies.

### 3.3.4 Performance of the New Designs

Experience with the new designs, both overseas and in South Australia, indicates clearly that their use markedly reduces the severity of injuries sustained by vehicle occupants as well as reducing the cost of damage to both the vehicle and the pole.

In the investigators' survey of overseas usage of these designs, a common response from experienced highway engineers was that the breakaway pole performed satisfactorily in reducing injuries. Four typical responses are extracted below:

From Mr. R. V. Sanderson, Acting Head, Road Systems, Road and Motor Vehicle Traffic Safety, Transport Canada —

The question of frangible vs. conventional lighting poles has been well documented as to its benefits in reducing the severity of accidents. For speeds of 60 to 100 km/hr the severity of an accident is twice as high as it is for the frangible design. Similarly, for speeds of 100 to 110 km/hr it is in the order of 3½ times more severe. In line with this reduction in severity, there is also a reduction in accident costs.

From Mr. H. N. Theriot, Traffic Operations Engineer, Louisiana Department of Transportation and Development —

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14. American Association of State Highway and Transportation Officials, *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, (Washington: AASHTO, 1975), 55.

15. FHWA Notice N 5040.20, July 14, 1976.

16. FHWA Bulletin, March 14, 1979.



We do not compile statistics regarding collisions with poles. In fact, with the breakaway feature, some are so minor that they are never reported. Vehicles damage is generally so minor, the vehicle is simply driven away.

Prior to the advent of the breakaway light pole feature, lighting poles were a somewhat formidable fixed object, subject to being impacted by errant vehicles. When struck, the usual end result was at least some personal injury and some fatalities. All collisions with breakaway mounts that we know of have been relatively minor in nature and rather free of injuries.

From Mr. C. W. Christie, Director, Traffic Engineering, Minnesota Department of Transportation —

As a point of interest, the maintenance people have found damage to our property was much worse before, with the non-breakaway poles than it is now with the breakaway poles. The frequency of problems with the conduit, cable, and anchor bolts was greater with the non-breakaway installations. The extent of damage to the poles was also much greater.

From Mr. J. F. Shafer, Director, Traffic and Safety Division, New York Department of Transportation —

A study of two locations showed that accidents involving frangible base light supports resulted in injuries less than 20% of the time. The statewide average for injuries from hits to utility poles, including light standards, is between 75 and 80%.

A number of studies have systematically documented the capabilities of breakaway poles for effecting significant reduction in injuries and vehicle damage,<sup>17</sup> with the consequential savings in societal costs. Walker found that in collisions with breakaway lighting columns the average cost of an accident was £146, approximately one-fifth of the cost of a collision with a conventional column, £775 (1972 prices).<sup>18</sup> In the 32 collisions with breakaway columns which he surveyed, he found only 3 instances in which an injury was sustained, and in each the injury was regarded as slight.

This reduction in accident severity is borne out by statistics supplied by the South Australian Highways Department. In 134 collisions with breakaway poles, only 3 minor injuries were reported. The South Australian experience also suggests that in terms of pole damage, breakaway poles are cheaper to repair. The Highways Department estimated that the average repair cost for breakaway poles was \$190, for rigid poles \$229, and buried base poles \$326.<sup>19</sup>

The Melbourne University Study analysed the costs associated with collisions with different types of poles. Their results, shown below in Table 14, indicate that the use of breakaway poles of the slip-base design and the new ESV pole offer the possibility of a great reduction in the societal cost of pole collisions.

Table 14  
COSTS ASSOCIATED WITH LUMINAIRE POLE COLLISIONS BY TYPE OF POLE<sup>20</sup>

Pole type	Societal cost per collision (a)		Cost to the authority per collision
	House side	Median	
Slip-base steel (b)	\$5700 (c)	\$340 (d)	\$190
ESV (e)	2000	2000	500
Rigid base steel (f)	10500	10500	280 (g)
Rigid base timber (f)	13100	13100	130 (g)

17. See for example, Institute for Road Safety Research, (SWOV), *Hazards with Falling Lighting Columns*, (Voorburg: SWOV, 1978); H. J. Highnett, *High Speed Impact Test on a 40 ft. Lighting Column Fitted with a Breakaway Joint*, (Crowthorne, Road Research Laboratory, 1967), Report LR 67; H. J. Highnett, *A Sideway Impact Test into a 12.2 m Lighting Column Fitted with a Breakaway Joint*, (Crowthorne: Road Research Laboratory, 1969), Report LR 241; A. E. Walker, *Field Experience of Breakaway Lighting Columns*, (Crowthorne: Transport and Road Research Laboratory, 1974); P. Thompson, J. Powers and R. L. Hollinger, *Frangible Base Accident Experience in New Jersey*, (Trenton: Bureau of Operations Research of the New Jersey Department of Transportation, 1974); R. D. Carlson, J. R. Allison and J. L. Bryden, *Performance of Highway Safety Devices*, (Albany: Engineering Research and Development Bureau of the New York State Department of Transportation, 1977), Research Report 57.

18. Walker, 9.

19. South Australia, Highways Department, District Engineer (Metropolitan), *Collisions with Lighting Poles 1969-1978*, Internal Reports to the Superintending Engineer (Metropolitan). It should be stressed that the costs quoted are the average costs of repair to damaged poles; they should not be taken to indicate the costs of installation of poles on new projects.

20. Fox, Good and Joubert, 299.

- (a) Societal cost is based on the method used to calculate total cost as explained in Chapter 2.
- (b) Includes \$150 vehicle damage costs.
- (c) Assumes that a secondary collision with a house-fence occurs.
- (d) Assumes that a secondary collision with oncoming traffic does not occur.
- (e) Includes \$1500 vehicle damage and assumes that the vehicle is successfully trapped.
- (f) Costs based on injury severity distribution and pole damage costs explained in Chapter 2.
- (g) Assumes no liability imposed upon authority for use of this type of lighting pole in a given location.

### 3.3.5 Potential Liability for the Use of the New Designs

Some authorities have been reluctant to install breakaway or frangible street lighting poles because they fear that the columns could, in some circumstances, pose a hazard to other road users. They are deterred from use of the poles by the spectre of the imposition of legal liability upon them for injuries caused to innocent motorists being hit by cascading poles, or pedestrians or home owners felled by errant columns. They query whether they will be considered negligent for installing such hardware in certain locations. The possible imposition of legal liability for the use of breakaway poles which constitute a potentially affirmative hazard must be examined in the context of research in the field together with the attitudes of experienced road engineers.

The investigators have reached the conclusion that, in general, no legal liability will be imposed on an authority which installs or authorises the installation of poles of a breakaway or frangible design. This conclusion has been reached after assessing the research reports referred to above relating to the behaviour of these designs and taking into account the experience in those overseas and domestic jurisdictions in which they are in use. As noted in an earlier section, the opinion of two experienced members of the Bar in different Australian jurisdictions was sought in conjunction with the study, and they are in substantial agreement with this conclusion. Although the use of frangible or breakaway poles is not yet the subject of an authoritative judicial opinion in Australia, it appears clear that their potential for reducing the severity and extent of accidents outweighs the somewhat remote possibility that the breakaway pole will cause damage. As such, no liability is likely to be incurred by their use.

### 3.3.6 Limitations on the Use of the New Designs

There may be, in some particular circumstances, based upon vehicular and pedestrian traffic patterns, occasions upon which it would be less appropriate to use breakaway poles to minimise danger to motorists, and that a decision based upon factors of relocation or other design would be more apt. The investigators are of the opinion that a prudent road engineer would give consideration to the behaviour of breakaway poles when called upon to decide whether to replace a rigid pole with a new design or when making provision for street lighting in a previously unlit area. Three sets of circumstances have been identified by some overseas engineers as situations in which the benefits which accrue from the use of breakaway poles must be balanced against the potential hazard to others:

- (a) in locations in which there is a high volume of pedestrian traffic,
- (b) where average vehicular speeds are low, and
- (c) on medians below a certain width.

The factors to be weighed have been expressed in this way by the authors of a Dutch study:

In considering the placing of lighting columns low-aggressive for private cars, it should invariably be examined whether the reduced primary collision risk to car occupants counterbalances the dangers caused when the column falls.<sup>21</sup>

The American Association of State Highway and Transportation Officials (AASHTO) also express similar views. It states:

When supports are exposed to traffic, breakaway or frangible bases should be used unless greater hazards would be created by falling poles. Breakaway supports should not be used where there is a high probability that a falling pole might strike a pedestrian, or fall on the building or the roadway.<sup>22</sup>

21. Institute for Road Safety Research (SWOV), 24.

22. American Association of State Highway and Transportation Officials, *Highway Design and Operational Practices Related to Highway Safety*, 2nd ed., (Washington: AASHTO, 1974).

Overseas studies utilising impact tests with the new designs have shown that in most circumstances an impacted breakaway pole located on the side of the road will fall in the direction in which the impacting vehicle is travelling and will lie parallel to the roadway.<sup>23</sup> Given this behaviour, the breakaway pole presents no greater danger to following motorists, or to pedestrians than does, say, a rigid pole which could bend or dislodge its lantern upon the impact of collision. But the behaviour of breakaway poles alters when the speed of impact is lower. The Dutch study referred to above best summarises this problem:

The conditions under which a broken or slipped off column can fall on to the carriageway have become clear from impact tests. The position of such columns after a collision depends mainly on the impact speeds. If a column is run into at a speed higher than about 35 km/ph, it will fall roughly in the direction of movement of the impacting vehicle. Moreover, it never happened in the impact tests that the bottom of the column which was always flung in the direction of the impacting vehicle's movement landed more than 20 metres from its original position. With an approach angle of 15° and an impact speed over 35 km/ph the lateral distance from the furthest point of the column to the row of columns never exceeded 6.5 m. On the basis of these tests it can be assumed that if a road or path runs parallel to the main carriageway about 7 m or more from the row of lighting columns there is little risk of an impacted column falling on it.

SWOV's tests and tests abroad (Nordlin et al., 1969) have shown that at impact speeds higher than about 35km/ph against low-aggressive columns there is little risk of the column falling on the main carriageway. The position is different at impact speeds lower than about 35 km/ph. The bottom of the column is not flung away as fast, and therefore the column may fall in front of the impacting car with the lantern in front. The distance between the farthest part of the fallen column and the column's original place may be as much as 20 m. Owing to the weight of the arm and the lantern, the column may even fall sideways in the direction in which the lantern is pointing. Although such a sideways fall caused by a low-speed collision occurred only once in SWOV tests, tests abroad (Nordlin et al., 1969) have also shown that this is liable to happen. The greatest lateral distance between the fallen column and its original position at such impact speeds will therefore probably be in the original direction of the lantern and not in opposite direction owing to the weight of the lantern.<sup>24</sup>

The investigators also attempted to ascertain whether particular jurisdictions considered the risk created by impact with breakaway poles at low speeds sufficient to limit the use of breakaway or frangible poles to those areas where the speed limit was above a certain level. It was ascertained that approximately 25% either did impose such a limitation or discouraged the widespread use of the poles in such traffic zones. The responses to the survey questionnaire were not sufficiently detailed to accurately draw conclusions as to the reasons motivating each jurisdiction to impose such a restriction. In some instances, the particular design of the pole (say, a frangible base rather than a breakaway) caused it not to yield unless hit above a certain speed. In other jurisdictions, the low speed may have indicated the presence of sufficient numbers of pedestrians to cause that jurisdiction, on balance, to not use the safety poles. As indicated by Table 13 (*supra*) a minority of jurisdictions only employ safety luminaires on streets on which the speed limit is above a specified figure. The figure varies between the equivalent of 50 km/hr to 75 km/hr with the most common figure the equivalent of 65 km/hr.

The investigators have examined below other circumstances where a falling pole might constitute a hazard to pedestrians or other motorists.

**3.3.6.1. Hazard to Other Motorists.** The only circumstances where a falling pole might encroach on the roadway and thus pose a hazard to other motorists are when it is impacted at a low speed or when it is located in a narrow median. Other motorists could be endangered in three ways. First, the pole could fall onto another vehicle travelling in the same carriageway or, in the case of a median collision, a car travelling in the opposite direction. Second, a vehicle could collide with the pole after it has fallen on the roadway. Third, a motorist could take evasive action in an attempt to avoid the fallen pole, thus causing another accident.

Overseas studies have suggested that none of these alternatives would involve a risk of serious danger to vehicle occupants. In relation to a falling column striking another vehicle, studies have shown that a column is unlikely to cause more than a 7 cm dent in the roof and that this is not likely to cause injury to occupants.<sup>25</sup> In relation to the second hazard, i.e., where a vehicle runs into a fallen column, studies have shown that this

23. See footnote 17, especially the reports by Walker and Highnett. See also Fox, Good and Joubert, Chapter 6, and E. F. Nordlin, W. H. Ames and R. N. Field, "Dynamic Tests of Five Breakaway Lighting Standard Designs", 259 *Highway Research Record*, (1968), 6-23.

24. Institute for Road Safety Research (SWOV), 12-13.

25. *Id.* 11.

would be no more dangerous than an impact with an upright breakaway pole and that there is little risk of injury to vehicle occupants.<sup>26</sup> The third alternative that a driver might undertake dangerous evasive action to avoid a fallen column, is more difficult to assess. It has been suggested that a fallen column is likely to be highly visible particularly if the impacting vehicle is still present.<sup>27</sup>

The investigators sought the reaction of engineers in those jurisdictions where frangible or breakaway poles are in service. They were asked whether there had been any instances where a falling or fallen pole had injured or caused damage to another motorist or following vehicle. Not one jurisdiction of the more than 60 canvassed was aware of such an accident. It was suggested to the investigators that a breakaway pole fell on a car in South Australia, but the Highways Department was unable to find any record of such an event.

**3.3.6.2 Hazard to Pedestrians.** The other possible danger posed by the use of frangible or breakaway poles is that, on impact, a pole might fall and injure a pedestrian standing in the vicinity. Although this is a theoretical possibility, the investigators were unable to find any report of such an accident happening. Of all the jurisdictions responding to the survey conducted, the only report that falling poles were involved in a secondary accident came from Mr. J. M. Pittman, Chief, Bureau of Electric Operations, New Jersey Department of Transportation. He stated:

We know of no major problem with secondary accidents caused by a falling pole. Since 1949 we have record of but one fatality caused by a knocked down facility. This occurred during construction when a bulldozer pushed over a lighting pole and it fell on top of a construction worker working in the immediate vicinity.

Nevertheless, a substantial proportion of the jurisdictions canvassed stated that they did not regularly install breakaway poles where there was substantial pedestrian traffic. Once again, the reasons were not detailed. It may be thought that, on balance, and *ex abundanti cautela* it is preferable to offer greater protection to the completely innocent pedestrian in areas where the presence of footpaths create a zone of "pedestrian safety" than to the errant motorist.

Yet another approach would be to use a particular type of safety pole — the ESV or wrap around pole where the pedestrian traffic is heavy. The ESV pole, while new to the Australian market and not yet available for use in any State, does have the advantage of preventing secondary collisions because it does not fall on impact and also entraps the impacting vehicle thus preventing it from colliding with anyone or any further objects. The disadvantage of the wrap around pole is its relatively higher cost together with the fact that after an impact, total replacement is required.

In summary then, it can be seen that some jurisdictions place limitations on the use of frangible or breakaway poles, while others do not. The balance which must be made between affording the motorist protection from roadside hazards, as against the possibility that a falling or fallen pole will harm someone else, and the choice of design of the column, are matters which are best left to the controlling authority which is most familiar with local conditions and any special factors present.

**3.3.6.3. Other Arguments Against the Use of the New Designs.** A submission has been put forward that the use of frangible or breakaway designs could lead to an increase in the incidence and severity of collisions. It has been suggested that a rigid pole forms a protective barrier for householders and shopkeepers and that its replacement with a pole which yields would expose these individuals to danger. Mr. Charles Trethowan, Chairman of the State Electricity Commission of Victoria, in a statement to *Engineering Australia*, expressed it thus:

It was also important, Trethowan said, to realise that by the time a car hits a pole the vehicle is already out of control and likely to collide with something else if it does not hit the pole.  
"Depending on what it hits — perhaps a room full of sleeping children — this could result in even more damage" he said.<sup>28</sup>

Fox, Good and Joubert in treating this as a serious viewpoint, explain that in their survey, in the majority of cases where a vehicle ran off the road on the house-side, the vehicle would have struck a boundary or house-fence had the pole not been present and further assuming that the driver had not been able to regain

26. *Ibid.* See also the report by Walker and N. E. Walton, T. J. Hirsch and N. J. Rowan, "Evaluation of Breakaway Light Poles for Use in Highway Medians", 460 *Highway Research Record*, (1973), 123-126.

27. Institute for Road Safety Research (SWOV), 12.

28. J. Kennedy, "Save Lives by Removing Death Poles", 51 *Engineering Australia*, (1979), 19.

control of the vehicle. As the authors point out, house-fence collisions have a low accident severity being three times less severe than a pole collision.<sup>29</sup>

It would appear obvious that, if there is a high probability of a house-vehicle collision, there are better methods of protecting the householder than by installing a rigid pole. Other forms of protection, such as a properly designed guardrail, would serve this purpose better.

In summary, the use of frangible or breakaway designs may theoretically lead to some secondary collisions involving pedestrians or other vehicles. Although research has indicated that this may happen, the investigators' survey of jurisdictions where these designs have been in service for a lengthy time period has failed to disclose any instances where this has in fact happened. Research conducted overseas has also indicated that if an impacted pole was to fall onto the roadway where it was struck by another vehicle or directly onto another vehicle, the resultant collision would not be serious.

### **3.3.7 High Mast Lighting**

Breakaway and frangible designs and the soft pole all have one feature in common: they markedly reduce the severity of a collision. A brief mention is made here of another alternative, high mast lighting, which can reduce the incidence of collisions. High mast or tower lighting involves placing supports for lights some distance from the travelled way. Because the masts are extremely high they provide the same, if not more, light for the road surface. The incidence of collisions is reduced because high mast lighting requires fewer supports than conventional lighting and also because the masts are located a reasonable distance from the side of the road where they are unlikely to be struck by an errant vehicle.

For high mast lighting to be effective, there needs to be extra space at the side of the road. Because of this factor, high mast lighting is only an alternative where new freeways or highways are constructed and the extra space can be readily acquired.<sup>30</sup>

### **3.3.8 Legal Implications of Breakaway vs. Rigid Street Lighting Designs**

As shown by the figures in Chapter 2, street lighting poles constitute a hazard to the motorist. Unlike utility poles, alternative designs which markedly reduce the severity or incidence of collisions are available and widely used. In the investigators' opinion it would breach the standard of care owed to a motorist if a street lighting authority failed to consider alternatives to rigid poles when deciding to replace a pole which has been damaged or when deciding to light a previously unlit area.

As mentioned above, the choice of a breakaway or frangible design or an ESV pole is one which can best be decided by street lighting authorities in each State or Territory taking into account the particular features of the categories of roads in that jurisdiction.

The investigators further suggest that, from the evidence available, the possibility of an impacted breakaway pole causing a secondary collision is remote. This question is one which street lighting authorities must consider when making a decision to install a breakaway pole. The likelihood that a falling breakaway pole might constitute a hazard to other road users must be balanced against the likelihood and extent of injury to motorists who leave the highway. The economic feasibility of the use of frangible poles and alternative means of making the road safe for vehicular traffic are other factors which must be borne in mind by authorities.

## **3.4 SIGN POSTS AND TRAFFIC CONTROL SIGNALS**

As shown in Chapter 2, published statistics regarding vehicle/sign post collisions are not a reliable indicator of the hazard posed as only primary collisions are recorded. Accordingly it is difficult to ascertain how many casualties or how much damage is directly attributable to such collisions and how many are caused by the vehicle subsequently hitting another object. Nevertheless, the statistics do indicate that collisions with sign posts

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29. Fox, Good and Joubert, 295.

30. The reader is referred to the following publications: American Association of State Highway and Transportation Officials, *Highway Design and Operational Practices Related to Highway*, 2nd ed., (Washington, AASHTO, 1974), Chapter VI; H. Singh, "Street Lighting Design", 164 *Public Lighting*, (1974), 48-51; K. Cox, "High Mast Lighting", 38 *Public Lighting*, (1973), 6-18; R. Crowther, "High Lighting Masts", 179 *Public Lighting*, (1977), 110-117.

are frequent. The Melbourne University Study included traffic control signals in their statistics. They found that 82 collisions produced 3 fatalities and 23 injuries, resulting in a casualty rate of slightly more than 30%.

### 3.4.1 Alternative Designs

Signs have to be located relatively near to the side of the road in order to be visible to the motorist and thus convey the message recorded on them. Signs do not have to be placed on rigid supports; they can easily be made to yield either by the use of weakened sections or a low diameter post or, alternatively, by using a slip-based design.

The Australian Standard Manual of Uniform Traffic Control Devices states:

As safety of the road user is of major importance in traffic and highway engineering, traffic control devices should not, of themselves, present a hazard to road users by contributing to the occurrence and severity of accidents. . . .

If the sign is located in an exposed position consideration may need to be given to the use of a frangible or breakaway type of construction, or other means of safety protection for the road user at the sign supports.<sup>31</sup>

Traffic control signals are not so amenable to breakaway treatment as the number of electrical cables poses technical difficulties. Nevertheless, it is possible to make the smaller pedestal mounted traffic control signals frangible.

In the investigators' survey, it was found that traffic signals are placed on frangible poles in 18 of the 46 United States jurisdictions responding to the questionnaire and in half of the relevant Canadian Provinces. They are not, however, used where the mast arm extends over the running lane as it is thought that the fall of the signal into the road creates a greater danger than the use of a rigid traffic signal poses to the errant motorist. Thus, the use of frangible traffic control signals is widely confined to pedestal mounted signals.

Many States expressed a preference for a wire span traffic signal extended from poles well clear of the running lanes. This design minimises the danger that an intersection will be left uncontrolled following a collision, and also minimises danger both to motorists and pedestrians. This method may, however, reduce the clarity of the traffic control message transmitted to the motorist, especially in windy conditions.

### 3.4.2 Legal Implications of Hazardous Sign Posts and Traffic Control Signals

Most of the Australian State road authorities comply with the Australian Standard regarding sign posts and many have internal regulations in support of making the posts frangible. Accordingly, the investigators are of the opinion that an authority would be in breach of the standard of care required if it were to place signs on rigid posts in disregard of both the Australian Standard and its own internal guidelines.

In relation to traffic control signals the situation is more difficult because of the technical problems posed. Nevertheless, the investigators suggest that an authority, in order to discharge its duty to road users, must conform to the standard of care expected of prudent highway engineers. In this respect, consideration must be given to whether a signal can be made safer, the alternatives available, and the economic feasibility of replacing or modifying the potential hazardous control signal.

## 3.5 GUARDRAILS, IMPACT ATTENUATORS AND OTHER PROTECTIVE DEVICES

In earlier sections of this Chapter, the investigators discussed the alternatives available for the modification of common roadside hazards such as utility poles, street lighting poles, traffic control signals and signs. The alternatives presented involved either the removal or relocation of the offending object or its replacement with a breakaway device. Although the use of protective devices such as guardrails or impact attenuators is not within the scope of this report, brief reference is made to this category of devices as yet another alternative.<sup>32</sup>

31. Standards Association of Australia, *Australian Standard Manual of Uniform Traffic Control Devices*, A.S. 1742, Part I — 1975, 7.

32. The reader is referred to the following articles:

J. Van Zweden and J. E. Bryden, *In-Service Performance of Highway Barriers*, (Albany: Engineering Research and Development Bureau of the New York State Department of Transportation, 1977), Research Report 51; R. D. Carlson, J. R. Allison and J. E. Bryden, *Performance of Highway Safety Devices*, (Albany: Engineering Research and Development Bureau, 1977), Research Report 57; American Association of State Highway and Transportation Officials, *Highway Design*

The investigators recognise that there may be circumstances where it is not possible to relocate or remove a particular hazard, or to replace it with a breakaway device. In the case of utility poles, the voltage may be of such a magnitude that undergrounding is not economically feasible, or there may simply be insufficient space available to permit undergrounding or relocation of the pole. In relation to street lighting and traffic control signals there may be circumstances, such as a high volume of pedestrian traffic at intersections, where it might be considered undesirable to install breakaway devices. In these situations, consideration should be given to protecting the motorist from the serious consequences of a collision with such a hazard, through the use of a properly designed guardrail, which would redirect the vehicle away from the offending object, or impact attenuators or other protective devices, which absorb the kinetic energy of the vehicle.

The investigators recognise that the indiscriminate use of protective barriers would not be in the interests of road safety as the barriers can, in themselves, constitute a significant roadside hazard. Nevertheless, the investigators are of the opinion that a failure to install guardrail or impact attenuators or other protective devices in those limited situations where an offending object cannot be otherwise treated, would constitute a breach of the standard of care owed by a highway authority to road users.

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32. *Continued*

*and Operational Practices Related to Highway Safety*, 2nd ed.. (Washington; AASHTO, 1974); Fox, Good and Joubert, Chapter 6; E. J. Fitzgerald, "The Effectiveness of Impact Attenuators: Two Case Studies in Massachusetts". 5 *Accident Analysis and Prevention*, (1973), 243-245; E. F. Nordlin, J. R. Stoker and R. N. Doty, "Dynamic Tests of an Energy Absorbing Barrier Employing Sand-filled Plastic Barrels". 386 *Highway Research Record*, (1972), 28-51; C. Y. Warner and D. Friedman, "Automobiles and Highway Crash Attenuators: System Design Considerations", 488 *Transportation Research Record*, (1974), 19-23; E. L. Marquis, T. J. Hirsch and Q. P. Nixon, "Test and Evaluation of a Tire-Sand Inertia Barrier", 566 *Transportation Research Record*, (1976), 69-79; and J. G. Viner and F. J. Tamanini, "Effective Highway Barriers", 5 *Accident Analysis and Prevention*, (1973), 203-213.

## Chapter 4

# IDENTIFYING THE POTENTIAL DEFENDANT: AN ANALYSIS OF STATE LEGISLATION

### 4.1 INTRODUCTION

The investigators have sought to identify the instrumentality or instrumentalities that would be liable to bear the legal responsibility of paying damages to a person injured as a result of a collision with a hazardous roadside object. In most instances, the instrumentality most likely to incur this liability is the one that “owns” the object which produced the injury (that is, the body which installed the object or caused it to be installed). But liability may also be incurred by a road authority, even though it has no or little connection with the object in question, on the basis that it consented to or failed to object to the placement of the object in question on a road under its control. A solicitor contemplating an action on behalf of a person injured in a collision with a hazardous roadside object has then, as a first task, to identify the instrumentality or instrumentalities legally responsible for the object in question.

The answer to the question of which instrumentality is responsible will vary from incident to incident, and from State to State. A logical starting point is to turn to the legislation governing the powers and duties of each statutory instrumentality. This, in and of itself, will usually not be sufficient to ascertain the identity of the party to be sued. Reference must be made, in each State, to Acts relating to local government, roads and road traffic, and also to the Act or Acts prescribing the powers and duties of the authorities responsible for the supply and transmission of electricity. In some States, reference must also be made to regulations made pursuant to the Acts noted above. In addition, agreements made between various authorities relating to cost-sharing and the joint use of facilities might also have a bearing on the identification of the responsible parties.

In each State, four separate pieces of legislation, at a minimum, are relevant. In one State, New South Wales, at least eight different Acts are relevant to the determination, in a given case, of the authority responsible for roadside objects.

In two States at least, provisions in legislation relating to the supply of electricity which were originally enacted in the last century are still in force, although some have been amended. In fact, in the search of the legislation relating to the powers of road authorities, local government units, and electricity suppliers, the investigators have been struck by the lack of clarity in the legislation and the apparent inconsistencies in the powers and duties of the various instrumentalities.

The major indicia of liability is ownership of the object. As a common sense proposition, one could usually assume that the authority that erects a roadside object is the owner of that object. The investigators found that in their discussions with various State authorities, the instrumentality that had constructed the poles in a given location usually referred to them as “our poles” and assumed that ownership vested in them. Yet in at least two of the States, it is not clear whether the authority which places an object along the road is the actual *owner* of the object in question, or whether, by virtue of provisions found in other statutes, the legislature intended that the ownership of these objects be vested in the road authority, which may not even be aware of their installation, nor have any explicit powers to prevent or control their construction. In this part, where inconsistencies or lack of clarity have been found in the legislation this is adverted to; recommendations regarding their clarification are made in the final chapter.

Another indicia of liability is control over the road on which the object is located. In the investigators’ opinion, if an instrumentality has control over the placement or location of an object along the road, or the



determination of the object's design, it is responsible in law for the consequences of exercising that control. Thus, a road authority that gives its consent (whether by virtue of a statutory requirement or merely in fact) to the placing of a pole in a position close to the carriageway, or permits the use of a column constructed of a material which poses a substantial risk to a motorist, is a potential defendant to an action brought by an injured person, on the basis of "control". It is possible, by an extension of this principle, that an authority with this power of control could incur liability for its non-exercise (that is, even though it has not given its consent, it failed to object). As mentioned above, in some States the authority which owns the object may not control it and, conversely, the authority which controls the road may not own or have any control over the object in question.

It is conceivable that liability might be determined either on the basis of an authority's ownership of the object or its exercise of control over the object. The investigators have therefore attempted to point to indicia of both ownership and control where found in the statutory material as possibly giving rise to liability. In some cases it is not possible to determine with certainty which authority is responsible for the object in question and reference would have to be made to the facts surrounding the particular collision. In other situations it may well be that more than one authority is potentially liable.

It is recognised that the identification of the responsible authority and the determination of its potential liability will depend on the facts surrounding the particular collision, the nature of the object struck, its location and design, and the category of road on which the object was located. The investigators are of the opinion that a summary of the statutory provisions in each State relating to the care and management of the road and the powers of various authorities to locate objects along the road is necessary from the point of view of authorities which might be involved in either attempting to recover compensation from a motorist who has caused damage to their property, or for defending an action brought by an injured motorist. The relevance to a solicitor contemplating an action on behalf of an injured motorist was mentioned earlier.

In almost every State the classification of the road in question has an important bearing on the identification of the responsible authority. For this reason in each section there is a brief summary of the powers of road authorities in respect of either the most common or most important categories of road in each State.

Additionally, in each of the following sections the investigators have indicated the extent of the powers of the various authorities in locating objects along the road. This is necessary in order to determine the responsible authority and it is also important in another respect. It is conceivable that there may be instances where an authority has exceeded its powers or failed to comply with a requirement which is either self-imposed or imposed by another statute, as, for example, where an electricity authority places a pole along a freeway without the consent of the road authority as required by statute in some States. In this case it may be said that the electricity authority has acted outside its powers, or in legal terms, the act is *ultra vires*. This may, in some circumstances, give rise to an action in public nuisance by an injured motorist. The possibility of a public nuisance action is discussed briefly in Chapter 5, but it is necessary here to point out that there are certain limitations on the placement of objects which are relevant to the potential liability of a statutory authority for both negligence and/or nuisance.

The investigators have devoted a section to each State. It was felt that the statutory material of each State is particular to that State and likely to be of interest, for the most part, only to individuals and authorities in that State. It is intended that each State section should be a coherent whole for those who do not wish to inquire into the situation in other States. An unfortunate consequence of this arrangement is that the subsequent sections of the chapter will be somewhat repetitive for those who read this chapter in its entirety. Extracts from the legislation in each State (as at 31st December, 1982) are included in Appendix E to this report.

Although the investigators recognise the special position of the Territories, the exigencies of space have precluded the inclusion of special sections devoted to them.

## **4.2 NEW SOUTH WALES**

When attempting to identify the appropriate authority in respect of a collision in New South Wales with a hazardous roadside object, such as a utility pole, street lighting pole, traffic control signal or sign post, eight Acts and, in one instance, regulations made thereunder must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In New South Wales, these provisions are found in the *Local Government Act*, 1919 and the *Main Roads Act*, 1924. In addition, these Acts also contain provisions

relating to the specific powers of these authorities to erect certain types of objects, such as street lights, traffic control signals and signs, on or along the road. In relation to the installation of street lights on main and secondary roads, the *Electricity Development Act*, 1945 must be referred to. In relation to the powers to erect traffic control signals and signs, reference must also be made to the *Traffic Authority Act*, 1976, the *Metro-politan Traffic Act*, 1900, the *Motor Traffic Act*, 1909 and the *Motor Traffic Regulations*, 1935.

In respect to the power to erect utility poles along the road and to some aspects of street lighting, reference must be made to the *Electricity Commission Act*, 1950 and the *Municipal Council of Sydney Electric Lighting Act*, 1896 which set out, respectively, the powers and duties of electricity supply authorities and the Sydney County Council regarding the supply and transmission of electricity.

The pattern of this section is firstly to provide an overview of the powers and duties of the authorities responsible for the care and management of the road. This is followed by sections relating to specific categories of roadside objects: street lighting poles, utility poles, traffic control signals and signs. The investigators have attempted to identify, in each section, the authority or authorities legally responsible for the object.

#### **4.2.1 Care, Control and Management of Roads in New South Wales**

In New South Wales the council of a city, municipality or shire has general and specific powers and responsibilities in respect of all public roads in its area by reason of the provisions found in the *Local Government Act*, 1919. In general it can be said that public roads in the State are divided into two broad categories: those which are proclaimed as main roads pursuant to the provisions in the *Main Roads Act*, 1924 and those which are not so proclaimed, but which are classified into categories pursuant to the provisions of the *Local Government Act*, 1919.

Although a council has the same powers over main roads as it does over classified roads in its area, its control over main roads is subject to the *Main Roads Act*, 1924 which provides that the Main Roads Board may prohibit a council from doing certain acts on or near these roads.

It is therefore necessary firstly, to discuss the general powers of a local council over all the public roads in its area, and secondly, to show how a local council's powers over main roads is limited and fettered by provisions found in the *Main Roads Act*, 1924.

**4.2.1.1 Powers and Responsibilities of Local Councils.** The *Local Government Act*, 1919 makes it clear that a council is the owner of all public roads within its area, and is intended to exercise the care, control and management of such roads. As such, a council would be a likely defendant in respect of collisions with hazardous objects located along a public road under its control.

Section 226 of the *Local Government Act*, 1919 provides that public roads shall be classified by the use they are intended to serve, into one of five categories: main roads, secondary roads, residential roads, pathways and lanes. Except for the classification of a main road, which is the responsibility of the Main Roads Board, a council shall determine the classification of a road.

Sub-section 232(1) provides that the council shall be the owner, in fee-simple (and entitled to be registered as the proprietor under the provisions of the *Real Property Act*, 1900) "of every public road, and the soil thereof, and all materials of which the road is composed" unless otherwise expressly provided. Sub-section 232(2) states that this vesting is "so as to confer on the council subject to the provisions of this Act the same estate and rights in and with respect to the site of the road as a private person would have if he were entitled to the site as private land held in fee-simple with full rights both as to the soil below and the air above."

In addition to vesting the ownership of the road in a local council, other provisions in the *Local Government Act*, 1919 make it clear that a local council is intended to exercise the care, management and control of public roads within its area.

Section 249 states that "[T]he council shall have the care control and management of every public road". Section 235 gives the council power to construct, extend, widen and divert a public road. Sub-section 240(1) empowers a council to "construct improve maintain protect repair drain and cleanse any public road" and, in particular, by paras. (e), (g) and (h) to light the road, and to erect (or authorise the erection of) street lamps and other devices. By s. 267 a council is empowered to order the removal of any obstruction or encroachment on a public road. A council is given additional power by s. 512 to require alterations to works (which is defined

as including "any water-pipe, gas-pipe, sewer, drain, tunnel, wire, cable, rail, or structure") "placed on, under, or over any public road, . . . in such manner as the council may in the public interest direct."

It is submitted that, on the basis of the provisions outlined above, a local council could, in some situations, incur liability for damage which results from a collision with a hazardous roadside object, on the basis of its ownership and control of the road.

**4.2.1.2 Powers and Responsibilities of the Main Roads Board.** As mentioned above, a local council is given powers and responsibilities over all public roads within its area. In New South Wales, as in all the other States, there is legislation providing for the establishment of the Main Roads Board and the Commissioner of Main Roads, both of which are bodies corporate, to which are entrusted general powers over major roads within the State.

In relation to a collision with a hazardous roadside object on a major road, it is possible that, by virtue of the provisions in the *Main Roads Act*, 1924 the Main Roads Board could incur liability, either independently of, or jointly with, the local council in whose area the public road is situated. Therefore, the provisions of the *Local Government Act*, 1919 discussed above, which relate to a local council's powers over public roads within its area must be read, in relation to certain categories of roads, in conjunction with the *Main Roads Act*, 1924.

Sections 4A and 5 of the *Main Roads Act*, 1924 provide for the establishment of the bodies known as the Commissioner of Main Roads and the Main Roads Board. The Board is charged, by s. 8, with the responsibility of recommending to the Governor which roads shall be proclaimed as main roads. Sections 18B, 21A and 28 empower the Board, and ss. 27C and 31A empower the Commissioner, to further recommend which roads shall be proclaimed, respectively, as metropolitan State highways, country State highways or trunk roads, developmental roads or works, or motorways or tourist roads. The Board may also, on the recommendation of a council, by notification, declare a road to be a secondary road.

Sections 34, 36 and 39 of the Act give the Board special powers in relation to certain categories of roads. Sub-section 34(1) empowers the Board to prepare standard plans and specifications for main, developmental or tourist roads or toll works and "may require that works executed under this Act be designed and executed in accordance therewith, or in accordance with special plans and specifications prepared for a particular work." Sub-section 34(2) empowers the Board to adopt, or amend and adopt, plans submitted by a council in respect to a proposed work which falls within the specified category.

The Board is empowered by sub-s. 36(1) to "exercise the powers given by any Act to a council in respect of public roads" when the road in question is a main, developmental or tourist road, or where a toll or developmental work is concerned. Sub-section 36(2) states that the granting of these powers "shall not, except in so far as may be necessary for and during the exercise of those powers, limit or affect the powers of the council in respect of the road."

Section 39 empowers the Board to exercise wide powers of control over main roads. Sub-section 39(1) restricts the Board's exercise of these powers to those areas which the Governor has proclaimed as areas where the section applies. Generally, the effect of s. 39 is to enable the Board to prevent the placement of any object by a council or other statutory body along a main road. For example, sub-s. 39(2) states that a council shall not permit, except with the approval of the Board, any person "to place, construct, excavate, lay or erect any room, cellar, light-well passage, tunnel, pipe, wire, rails, kerbing, guttering, footway paving, or other thing whatsoever in any main road".

Sub-section 39(4) prohibits a council, statutory body, government department or person, "whether or not acting under the authority of any statute" from constructing, excavating, laying, or erecting "any room, . . . pipe, . . . wire, structure, . . . or other thing whatsoever in, upon, under, or over any main road without first obtaining the consent of the Board".

Paragraph 39(6)(a) empowers the Commissioner to have signs or hoardings which are adjacent to or within a main road removed if in his opinion it is "prejudicial to the safety of the travelling public."

The provisions of the *Main Roads Act*, 1924 mentioned above, indicate that the Board has the general power to exercise control over certain categories of roads within the State. In respect of main, developmental and tourist roads, the Board has the power to require a council to execute works in accordance with the Board's plans and specifications; it has the power to amend a council's specifications for works; and it has the power

to do any acts which a council is empowered to do on these categories of roads. In addition, the Board also has the power to prevent the placement of objects or structures along main roads within areas proclaimed by the Governor.

It is possible that the Board might exercise any of these powers negligently. For example, the Board might require compliance with a design which created a hazardous situation, or it might itself place an object in a hazardous location or permit another body to do so. In these circumstances, it is conceivable that the Board could incur liability, either jointly with the body which created the hazard, or independently, for damage sustained as a result of the collision.

#### **4.2.2 Street Lighting**

The provision of street lighting in New South Wales is governed by four Acts: the *Local Government Act*, 1919, the *Municipal Council of Sydney Electric Lighting Act*, 1896, the *Electricity Commission Act*, 1950, and the *Electricity Development Act*, 1945. In addition, the *Traffic Authority Act*, 1976, is of relevance in so far as it empowers the Authority to make recommendations to bodies engaged in street lighting.

It would appear from the legislation noted above that the provision of street lighting is a power entrusted to local councils, although other statutory bodies are required to contribute to the cost of lighting certain categories of roads by virtue of the *Electricity Development Act*, 1945. Although reference is made in s. 84 of the *Electricity Commission Act*, 1950 to the Commission's power to erect lamps in roads, it would appear from the wording of the section that the Commission's power is restricted to purposes connected with the supply of electricity (such as lighting their own works, etc.).

For the most part, street lighting is the prerogative of the local council by virtue of the provisions found in the *Local Government Act*, 1919 and in the *Municipal Council of Sydney Electric Lighting Act*, 1896 (which applies only to the Sydney Council). For the purposes of this discussion, reference will only be made to the general provisions found in the *Local Government Act*, 1919.

By ss. 235 and 240 of the *Local Government Act*, 1919 a council is given the general power to light the streets. In particular, paras. 240(1)(e), (g) and (h) give a council the power to erect street lamps and other devices in the road (or to authorise their erection) "in such a manner as in the opinion of the council will not unduly interfere with public convenience or with access to private premises".

Section 277 provides for the making of ordinances which relate to a council's responsibilities regarding street lighting. In particular, paras. 277(1)(i) and (cc) relate, respectively, to the making of ordinances regarding the prevention of danger by want of repair or absence of lighting and to the prescription of standards for the lighting of roads or classes of roads and the compliance by the council with such standards. Sub-section 277(2) expands on the subject matter of para. 277(1)(cc) and empowers the making of ordinances in relation to the following: providing different standards relating to the lighting of different parts of any road or of classes of roads in different areas; to require the lighting of a road or classes of road to a prescribed standard; and to the adoption (wholly, partially or by reference) of any standard rules recommended or adopted by the Standards Association of Australia.

Additional constraints on the manner in which lighting is installed and the standard of lighting required by councils in the exercise of their power to light the streets could be imposed by the Energy Authority of New South Wales under the provisions of the *Electricity Development Act*, 1945 as it relates to the traffic route lighting subsidy scheme. Under this scheme, a council may obtain a subsidy for the lighting of a main or secondary road, or a road which in the opinion of the Energy Authority requires, by virtue of the amount of traffic, to be lit to a standard set by the Authority. By virtue of s. 19D of the *Electricity Development Act*, 1945 it would appear that the Energy Authority is empowered to impose terms and conditions on a local council which is in receipt of such a subsidy.

The Traffic Authority of New South Wales is also empowered to make recommendations in respect of street lighting. Sub-section 19(1) of the *Traffic Authority Act*, 1976 provides that the Authority may make recommendations in relation to "general principles relating to the provision of lighting on public streets". Sub-section 19(2) of the Act imposes a duty on any public authority in receipt of such a recommendation to "give proper consideration to the recommendations and, as far as may be reasonably practicable, to carry the recommendations into effect".

A local council is not only the body primarily responsible for the erection of street lighting; it is also, as pointed out in the previous section, the body which has the care and management of public roads, and is the owner of the road. If street lighting is installed which is dangerous and a collision results, it is submitted that the local council would be the body against which an action should be commenced. Although the investigators have not discovered any ordinances made under s. 277 of the *Local Government Act*, 1919, and are not aware of the terms of agreement commonly made between local councils and the Energy Authority under s. 19D of the *Electricity Development Act*, 1945, the terms of both Acts clearly envisage the possibility of a prescription of standards. If such standards are prescribed, but are not adhered to by a council, then such non-compliance could be raised as evidence of negligent conduct.

The investigators are also not aware of whether the Traffic Authority has made any recommendations to a street lighting authority. If such recommendations have issued from the Traffic Authority and the street lighting authority has failed to comply, then this, too, would go to the question of whether the street lighting authority's conduct was negligent.

The statutory position regarding a motorist who damages a street light is unequivocal. Sections 245 and 512D of the *Local Government Act*, 1919 permit a council to recover compensation from a motorist for damage caused.

#### 4.2.3 Utility Poles

The supply and transmission of electricity in New South Wales is carried out by the Electricity Commission of New South Wales and electricity supply authorities which are, for the most part, local councils. Provisions governing the powers of these bodies to supply and transmit electricity are found in the *Electricity Commission Act*, 1950 and the *Municipal Council of Sydney Electric Lighting Act*, 1896 (which applies to the Sydney County Council by virtue of the *Gas and Electricity Act*, 1935, s. 47). Reference must also be made to the provisions in the *Local Government Act*, 1919 by which a council is empowered to require the removal or alteration of works located along a public road which belong or are under the control of a statutory body.

4.2.3.1 Electricity Commission of New South Wales. The Commission is empowered by sub-s. 9(1) of the *Electricity Commission Act*, 1950 to maintain, operate, improve, extend and construct works for the generation and supply of electricity. Works are defined in s. 3 as meaning "plant and equipment (fixed and mobile), structures, buildings, lines, cables, meters and conveniences for and in connection with the generation, transmission and supply of electricity." Sub-section 9(2) empowers the Commission to supply electricity to any person.

Section 84 states that the Commission

may lay down and place under or over any road any electric lines . . . and may in any such roads erect any posts, pillars, standards, lamps and do all other acts which it may from time to time deem necessary for supplying electricity.

Unlike the situation in Victoria, there are no problems relating to the ownership of works placed by the Commission on a public road vested in another body. Sub-section 82(1) of the Act overcomes this difficulty by providing that

all works and every part thereof vested in or held by the Commission subject to the provisions of this Act shall notwithstanding that they have been constructed in any road or place, remain the property of the Commission.

Section 85 of the Act recognises the possibility that other bodies, such as a local council, may be empowered to require the removal of or alteration to the Commission's works. Sub-section 85(b) states that

any person or Public Authority lawfully competent to do so, may in like manner alter the position of any works of the Commission being under or over any such road or place as aforesaid which may interfere with the lawful exercise of any powers vested in such person or authority in relation to such place . . .

subject to agreement between the bodies or persons concerned and the payment of compensation, where necessary.

This provision reinforces the powers given to local councils by s. 512 of the *Local Government Act*, 1919 whereby a council may require the alteration of works vested in a statutory body or placed under the authority of any statute on, under, or over any public road.

The only apparent constraint on the Commission's power to erect roadside poles is found in s. 39 of the *Main Roads Act*, 1924 which applies only to main roads in areas where the Governor has proclaimed the section to apply. Where this situation occurs, the Commission would be required to first obtain the consent of the Main Roads Board to the placing of poles and wires on such a road.

It is clear from the legislation that the Commission has both the ownership and control of poles which it places along public roads. On the basis of this analysis, it is clear that the Commission would be the appropriate body to incur liability in respect of damage sustained in a collision with a hazardous roadside utility pole erected by, or under the control of the Commission.

The statutory position regarding motorists who damage roadside utility poles is unequivocal. Section 78 of the *Electricity Commission Act*, 1950 clearly states that the Commission may recover up to \$200 compensation for damage to its works, as well as pursuing any other remedy which it might have.

**4.2.3.2. Local Councils.** Local councils are empowered by s. 418 of the *Local Government Act*, 1919 to engage in certain trading undertakings, such as the supply of electricity. As a local council is deemed to be the owner of all public roads within its area, it has the power to erect utility poles and other works for the supply of electricity. The only constraints on this power are the provisions of the *Main Roads Act*, 1924 adverted to above, which relate to the placement of objects on main roads in areas proclaimed by the Governor, where the consent of the Main Roads Board must first be obtained.

A local council which engages in the supply of electricity is both the owner and the controller of the works. It therefore seems clear that a local council would be the appropriate body to incur liability in respect of a person sustaining damage in a collision with a hazardous utility pole which the council erected.

The position of a motorist who damages a roadside utility pole is covered by s. 512D of the *Local Government Act*, 1919 which provides that a council may recover up to \$200 compensation for the damage as well as pursuing any other remedy which it might have.

**4.2.3.3 Sydney County Council.** The Sydney County Council is empowered by s. 47 of the *Gas and Electricity Act*, 1935 to exercise the powers contained in the *Municipal Council of Sydney Electric Lighting Act*, 1896.

Section 14 of that Act, which empowers the Council to erect roadside poles and other works for the transmission of electricity, is in almost identical terms to s. 84 of the *Electricity Commission Act*, 1950 discussed above.

There would appear to be two constraints on the Sydney County Council in the erection of roadside poles and wires. The first relates to the requirement imposed by the *Main Roads Act*, 1924 referred to above. The other constraint is found in s. 18 of the *Municipal Council of Sydney Electric Lighting Act*, 1896 which requires that the Council, when placing a new line on a road or street which already carries telegraph, telephone or railway lines, notify the appropriate bodies.

There is no doubt that, if a person sustains damage in a collision with a hazardous roadside utility pole, erected and maintained by the Sydney County Council, the Council would be the body most likely to incur liability. This conclusion is strengthened by the terms of s. 19 of the *Municipal Council of Sydney Electric Lighting Act*, 1896 which states:

[I]n the exercise of its powers under this Act the Council shall cause as little detriment and inconvenience, and do as little damage as possible, and shall make full compensation to all persons for all damage sustained by them by reason or in consequence of the exercise of such powers. . . . Provided that the Council may in all cases be at liberty to set up by way of defence or in mitigation of damages, as the case may be, that the person claiming compensation has by his own act, neglect, or default caused or contributed to the damages in respect of which he claims to be compensated.

This provision has been judicially interpreted in *Calf v. Sydney County Council* [1972] 2 N.S.W.L.R. 521 as giving rise to a private right of action in respect to the Council's negligent exercise of its powers under s. 16. There appears to be no reason why s. 19 would not also extend to a negligent exercise of powers under s. 14, namely the negligent design or placement of a roadside utility pole.

#### **4.2.4 Traffic Control Signals and Signs**

The installation of traffic control signals and signs and other traffic devices is covered by provisions in the *Local Government Act*, 1919, the *Metropolitan Traffic Act*, 1900, the *Motor Traffic Act*, 1909 (and the

*Motor Traffic Regulations*, 1935, made thereunder), the *Main Roads Act*, 1924, and, most importantly, the *Traffic Authority Act*, 1976. This last-mentioned Act gives wide powers to the Traffic Authority of New South Wales to prescribe the design and location of these devices as well as entrusting the Authority with functions related to traffic safety.

Sub-section 13D(6) of the *Metropolitan Traffic Act*, 1900 and sub-s. 4D(6) of the *Motor Traffic Act*, 1909 make it an offence to erect a traffic control sign (which is defined in both Acts as meaning "a standard, sign, notice or device in or similar to a form . . . prescribed . . .") on or near a public street without the approval of the Traffic Authority. Sub-regulation 56(1)(b) of the *Motor Traffic Regulations*, 1935 makes it an offence to erect or display "any standard, sign, device, notice or traffic control light signal" on any public street without the approval of the Traffic Authority.

The bodies most likely to be involved in the erection of traffic control signals and signs are local councils and the Commissioner of Main Roads, although other bodies may also share this power. No provision has been found in the *Local Government Act*, 1919 which would specifically empower a local council to erect such a device, but it is likely that this power may be implied from the general power entrusted to councils in respect of the care, control and management of all public roads within their area. Alternatively, it may be within their powers as the legal owner of such roads. Nevertheless, it is clear that s. 245 of the Act envisages that a local council may recover compensation from a motorist who damages a traffic sign.

The Commissioner of Main Roads is specifically empowered by sub-s. 48C(2) of the *Main Roads Act*, 1924 to erect or construct traffic control facilities (the definition of which includes not only signs but also traffic control lights) on any public road. Section 40 of the Act empowers the Commissioner to recover compensation for damage to such facilities from the motorist responsible.

Nevertheless, the specific power entrusted to the Commissioner to erect traffic control facilities, and the implied power of local councils to do so, must be read subject to the provisions noted above contained in the *Metropolitan Traffic Act*, 1900, the *Motor Traffic Act*, 1909, and the *Motor Traffic Regulations*, 1935, which state that it is an offence to erect a traffic control facility in or near to a public street, unless the approval of the Traffic Authority is obtained. It is therefore necessary to examine the powers of the Traffic Authority under the *Traffic Authority Act*, 1976 in relation to these matters.

The Traffic Authority of New South Wales is constituted under s. 6 of the *Traffic Authority Act*, 1976. By s. 16 of that Act, the Authority has the power to exercise the functions conferred on it by other legislation, such as the *Metropolitan Traffic Act*, 1900 and the *Motor Traffic Act*, 1909.

The Authority is given a number of specific functions, but of particular relevance is para. 17(1)(c) which gives the Authority the responsibility of

establishing general standards and general principles in connection with —

- (i) the design, construction, erection, affixing, marking, maintenance, repair, alteration, operation or removal of traffic control facilities; . . .

for purposes connected with traffic safety and the movement, regulation and control of traffic.

Traffic control facilities are defined widely in sub-s. 4(1) of the Act, and include signs, standards, markings, and traffic control lights.

In addition, the Authority is given the responsibility by para. 17(1)(f) of the Act of co-ordinating the activities of public authorities so far as those activities relate to —

. . .

- (ii) the construction, erection, affixing, marking, maintenance, repair, alteration, operation or removal of traffic control facilities.

Sub-section 18(1) of the Act gives the Authority the power to require other public authorities to

implement plans or proposals formulated or adopted, general standards or general principles established, or other decisions made, by the Authority in the exercise or performance of the Authority's functions.

In relation to a collision with a hazardously designed or placed sign post or traffic control signal, the appropriate body to incur liability would be the body which erected it. For the most part, this would be the local council or the Commissioner of Main Roads, although other authorities may also be involved. The



question of compliance with standards laid down by the Traffic Authority would be a matter which would be relevant to whether or not the actual placement or design of the object concerned constitutes negligence.

### 4.3 QUEENSLAND

When attempting to identify the appropriate authority in respect of a collision in Queensland with a hazardous roadside object, such as a utility pole, street lighting pole, traffic control signal or sign post, four Acts and, in one instance, regulations made thereunder must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In Queensland these provisions are found in the *Local Government Act* 1936-1982 and the *Main Roads Act* 1920-1979. In addition, these Acts also contain provisions relating to the specific powers of these authorities to erect certain types of objects, such as street lights, traffic control signals and signs, on or along the road. In relation to the powers to erect traffic control signals and signs, reference must also be made to the *Traffic Act* 1949-1982 and the *Traffic Regulations* 1962 (as amended).

In respect to the power to erect utility poles along the road and to some aspects of street lighting, reference must be made to the *Electricity Act* 1976-1980 which contains the provisions relating to the powers and duties of the seven Electricity Boards which are responsible in Queensland for the transmission of electricity.

The pattern of this part is firstly to provide an overview of the powers and duties of the authorities responsible for the care and management of the roads. This is followed by sections relating to specific categories of roadside objects: street lighting poles, utility poles, traffic control signals and signs. The investigators have attempted to identify in each section the authority or authorities legally responsible for the particular object.

#### 4.3.1 Care, Control and Management of Roads in Queensland

In Queensland there are two broad classes of roads: those declared under the provisions of the *Main Roads Act* 1920-1979, and those which are undeclared but are classified into five categories by a Local Authority pursuant to the *Local Government Act* 1936-1982. Of these five categories of classified roads, only principal roads, the most important category, are considered in this section. Of the seven categories of declared roads, only the three most important have been considered for the purposes of this project: main roads, State highways and motorways.

**4.3.1.1 Principal Roads: Local Authorities.** The term "principal road" refers to those roads which are classified as such by a Local Authority pursuant to s. 35 of the *Local Government Act* 1936-1982. This category is the most important of those roads under a Local Authority's control.

The *Local Government Act* 1936-1982 indicates that Local Authorities are intended to exercise control over roads within their area. Section 30 states:

And without limiting the generality of its powers and authorities the Local Authority shall have and possess and may exercise and perform express powers and authorities (including the power to make by-laws) in relation to the following matters: The undertaking, provision, construction, maintenance, management, execution, control, regulation, and/or regulation of the use of —

Roads, bridges, tunnels, ferries, subways, viaducts, culverts, and other means of public communication; . . . traffic; opening, closing, aligning, widening, altering, and grading of roads; . . .

and generally all works, matters and things in its opinion necessary or conducive to the good rules and government of the Area and the wellbeing of its inhabitants.

In addition to the statutory control vested in the Local Authorities by s. 30, a Local Authority may be the *owner* of objects placed along the roads. In the absence of provisions to the contrary, sub-s. 32(12) would appear to apply. It states:

The materials of all roads, bridges, ferries, wharves and jetties, and other public works under the control of the Local Authority, and all things appurtenant thereto, shall belong to the Local Authority.

The effect of these sections is that a Local Authority has the care, control and management of roads in its area and that, in some circumstances at least, it is the owner of objects "appurtenant to" the road. It is submitted that a Local Authority could incur liability in some situations for a hazardous object along its roads.



4.3.1.2 Main Roads, State Highways and Motorways: Commissioner of Main Roads. By ss. 11 and 11B of the *Main Roads Act* 1920-1979, the Commissioner of Main Roads, a body corporate established by the Act, has the responsibility of declaring which roads shall be main roads, State highways and motorways. The Governor in Council by Proclamation shall confirm such declaration.

Generally, once a road is declared by the Commissioner and confirmed by the Governor in Council, that road becomes the responsibility of the Commissioner and is under his control and jurisdiction. Although Local Authorities exercise some functions in respect of declared roads, and by s. 35 Local Authorities are given the same powers over declared roads as over other roads in their district, the Act places primary responsibility for declared roads in the Commissioner. For example, s. 35 provides in part that a Local Authority shall not carry out permanent works on a declared road unless the Commissioner has given his prior approval.

Sub-section 17(2) of the *Main Roads Act* 1920-1979 is couched in terms similar to that of the corresponding provision in the Victorian legislation. Sub-section 17(2) states:

The property in —

- (a) The materials of any and every declared road and all live and dead timber and vegetation thereon, and all matters and things appurtenant thereto; and
  - (b) All buildings, fences, gates, posts, boards, stones, and erections placed upon any and every declared road; and
  - (c) The scrapings of any and every declared road and all gravel, sand, and other material on any and every declared road,
- shall belong to the Commissioner.

*Prima facie*, it would appear that this provision has the effect of making any matter or thing appurtenant to or any erection on a declared road the property of the Commissioner. Of course, as with the corresponding provisions in the other States, this section must be read together with provisions in other legislation which might be inconsistent with this presumption of ownership.

Not unlike the legislation of most of the other States, there is a special provision regulating the erection of roadside objects along motorways. Sub-section 11B(6) of the *Main Roads Act* 1920-1979 grants to the Commissioner, exclusive control, irrespective of any powers conferred in any other Act, over the placement of objects along a motorway. It states:

Notwithstanding anything contained in this Act or any other Act a person shall not install any tower, pole, wire, pipe, structure or thing in, on, over, or under any Motorway unless the Commissioner has given his prior consent in writing to such installation.

In this subsection and in subsection (8) of this section "Install" means construct, make, mark, place or erect, or affix to any structure, repair, maintain, manage and control and "installation" has a cognate meaning.

The relevant sections of the *Main Roads Act* 1920-1979 provide that the primary responsibility for main roads, State highways and motorways vests in the Commissioner of Main Roads. The Commissioner exercises general supervisory powers and, although local authorities have some responsibilities, they are not permitted to construct permanent works on any declared road without the Commissioner's consent.

In addition, the Commissioner is deemed to be the owner of any thing appurtenant to, or any erection on, a declared road. Works placed on or controlled by other bodies are not specifically excepted from this provision although, as mentioned above, provisions in other legislation must be taken into account when determining ownership. (This matter is discussed in more detail below.)

The Commissioner, because he exercises control over declared roads and may be, in some situations, the owner of roadside objects, could incur liability in respect of hazardous roadside object with which a motorist collides.

Furthermore, in relation to motorways, the Commissioner has the power to prevent any object from being placed along it, irrespective of any provision in any other Act and, in this respect, the Commissioner might incur liability if he consented to the erection of a hazardous object.

#### 4.3.2 Street Lighting

The body having the control of the road may install street lighting itself or may arrange for its installation by agreement with an Electricity Authority. In relation to declared roads, the responsible body is the

Commissioner of Main Roads. Street lighting on undeclared roads is the responsibility of the Local Authority. Sub-section 32(4) of the *Local Government Act* 1936-1982 empowers a Local Authority to enter into an agreement with an authority or body for the installation of street lighting and to contribute towards its capital cost.

In addition to the instrumentalities above, an Electricity Authority may, on its own initiative, erect street lighting in certain circumstances. Section 174 of the *Electricity Act* 1976-1980 states:

- (1) An Electricity Authority may construct, maintain and control works on any road for the purpose of lighting.
- (2) Such lighting may be provided by the Electricity Authority for the purpose of lighting any of its works or on the requisition of the Commissioner of Main Roads, a Local Authority, or any other statutory body having the control or management of a road.
- (3) Nothing in this section shall be construed so as to prohibit the Commissioner of Main Roads, a Local Authority, or any other statutory body having the control or management of a road from constructing and maintaining lighting as part of the works comprising such road on any road or part of a road on which the Electricity Authority has not constructed works for the purpose of lighting.

Section 226 of the *Electricity Act* 1976-1980 provides that all works and lines shall belong to the Electricity Authority, irrespective of location. Works is defined in s. 6 as including lamps. This ownership is reinforced by an authorisation to the Authorities to collect compensation for damage to their property. Section 425 of the *Electricity Act* 1976-1980, empowers an Electricity Authority to recover, in a summary way, up to \$2,000 from any person "who carelessly or accidentally breaks, throws down or damages any electric line or other works belonging to the Electricity Authority or under its control".

In respect of street lighting constructed and maintained by a Local Authority on a principal road or the Commissioner on a declared road, the Local Authority and the Commissioner, respectively, would be the appropriate body to incur liability in respect of a pole which posed a hazard.

In respect of street lights installed or controlled by an Electricity Authority, that Authority would be the appropriate body to incur liability. Section 226 of the *Electricity Act* 1976-1980 would have the effect of displacing the ownership provisions found in sub-s. 32(12) of the *Local Government Act* 1936-1982, and sub-s. 17(2) of the *Main Roads Act* 1920-1979.

#### **4.3.3 Utility Poles**

Prior to 1976 there were a number of authorities responsible for the supply and transmission of electricity in Queensland. In 1976, the *Electricity Act* was proclaimed which replaced the existing arrangements with a more centralised system of electricity supply. The assets, including the property and works of the former authorities were transferred and vested in the new Electricity Boards by the Second Schedule of the *Electricity Act* 1976-1980.

The supply and distribution of electricity is now principally undertaken by the seven Electricity Boards constituted under ss. 101-103 of the *Electricity Act* 1976-1980. By sub-s. 129(a), the Boards are empowered to supply electricity within their defined area.

There are certain constraints placed on the powers of an Electricity Authority to erect utility poles along roads. Sub-section 216(1) of the *Electricity Act* 1976-1980 provides that, subject to obtaining the written agreement of the Commissioner of Main Roads in respect of a declared road, or of the Local Authority in respect of undeclared roads, an Electricity Authority may "lay down and place on, under or over any road any electric lines of other works" and alter or remove the same.

If the Electricity Authority is unable to obtain this agreement and it considers that the refusal is unreasonable, the matter can be referred to the Governor in Council for determination. (See sub-s. 216(6) and s. 225 of the *Electricity Act* 1976-1980.)

Any lines or works which were placed or altered without the appropriate agreement may be removed by the relevant local Authority or by the Commissioner. (Sub-section 216(7).)

Section 220 of the *Electricity Act* 1976-1980 provides that a public body may request alterations to lines or works which interfere with that public body's lawful exercise of their powers in relation to the road. The alterations must be effected, but they are undertaken at the expense of the public body requesting them.

Section 226 of the *Electricity Act* 1976-1980, as mentioned in the previous section, states that lines and works shall remain the property of the Electricity Authority irrespective of where they are located. This has the effect of displacing the ownership provisions found in sub-s. 32(12) of the *Local Government Act* 1936-1982 and sub-s. 17(2) of the *Main Roads Act* 1920-1979.

It is clear that the Electricity Authority is the owner of a utility pole located on a road and is responsible for the care and management of the pole. Thus, it would be the body most likely to incur liability if the pole constitutes a hazard. Nevertheless, liability could be incurred by a Local Authority, in respect of roads under its control, or the Commissioner, in respect of declared roads and, particularly motorways, for agreeing to, and thus permitting the location of a hazardous object on its roads.

#### **4.3.4 Traffic Control Signals and Signs**

The installation of traffic control signals and signs and other traffic devices is covered by provisions in the *Main Roads Act* 1920-1979, the *Traffic Act* 1949-1982, and regulations made pursuant to the *Traffic Act*.

By sub-s. 9B(a) of the *Main Roads Act* 1920-1979, the Commissioner of Main Roads is given the power "to compile, maintain and amend the Manual of Union Traffic Devices". The Commissioner is given power by sub-ss. 9B(d) and 9B(f) to install or arrange for the installation of official traffic signs and to make regulations with respect to matters specified in particular clauses of the Schedule to the *Traffic Act* 1949-1982. Clause 28 of the Schedule to the *Traffic Act* 1949-1982 empowers the Commissioner to make regulations prescribing, regulating, defining and controlling official traffic signs, signals, indications and directions for the control or regulation of traffic.

Section 12B of the *Traffic Act* 1949-1982 states that the Commissioner may install or remove official traffic signs and that a Local Authority may do the same in relation to roads within its area which are not declared roads. Section 49E of the *Local Government Act* 1936-1982 empowers a Local Authority to install and remove official traffic signs.

By s. 12C of the *Traffic Act* 1949-1982, if the Commissioner is of the opinion that an official traffic sign should be installed on or removed from a road which is not a declared road, then he may serve notice on the Local Authority to do so. If the Local Authority does not comply, the Commissioner may act and recover the cost from the Local Authority.

Section 12D empowers certain persons to install official traffic signs where a danger to traffic exists. Section 12G permits the Commissioner or Local Authority to remove signs installed without lawful authority and also makes it an offence to install signs without lawful authority and permits the Commissioner or a Local Authority to remove them and to prosecute the offender.

Section 12H states that where an official sign is damaged by a motorist, either wilfully or negligently, the Local Authority or the Commissioner (depending on the category of road) may either sue for or may recover in a summary way the cost of the damage to the sign.

Section 70 of the *Traffic Act* 1949-1982 provides that the Governor-in-Council may make regulations generally in accordance with the objects and purposes of the Act and specifically in respect of matters specified in the Schedule to the Act. Clause 28 of the Schedule specifies that regulations may be made

"[p]roviding for, prescribing, regulating and controlling official traffic signs, . . . and directions for the control or regulation of traffic; . . ."

Regulation 16 of the *Traffic Regulations* 1962 (as amended in 1965 and 1974) provides that official signs placed along a road must comply with the methods, standards and procedures prescribed in the Uniform Manual of Traffic Devices or, in their absence, as approved by the Commissioner.

Pursuant to these Regulations, the Commissioner of Main Roads has notified (*Government Gazette*, No. 88, 18 December, 1982) that a new Manual of Uniform Traffic Control Devices has been issued, to take effect on 1st January, 1983. The notification states:

"The designs, methods, standards and procedures relating to the installation of traffic control devices (Official Traffic Signs) are detailed therein. These devices are erected by the Main Roads Department and Local Authorities for the purpose of regulating, warning or guiding traffic on the road system in this State."

The notification further states that the specifications for the devices in the manual are based upon the Australian Standard Manual of Uniform Traffic Control Devices AS 1742-1975.

Regulation 18 states that if the District Superintendent (as defined by s. 11 of the *Traffic Act* 1949-1982) or the Commissioner of Main Roads is satisfied that a light or sign constitutes a danger to traffic he may give notice requiring its removal or modification. Failure to comply with such a notice is an offence and, irrespective of conviction, the District Superintendent or the Commissioner may remove or modify it and recover the costs of doing so from the owner.

With respect to the question of ownership of these devices, it would appear that any signs or signals placed on a declared road would belong to the Commissioner, while those on a road which is not declared would belong to the Local Authority by virtue of the provisions in the *Main Roads Act* 1920-1979 and the *Local Government Act* 1936-1982.

The investigators suggest that, given that a negligence action might lie in certain circumstances (e.g. non-compliance with the standard or hazardous placement), the selection of the appropriate defendant would depend on the type of device and the classification of the road. In relation to roads which are not declared and are under the control of a Local Authority, such as principal roads, the appropriate defendant would be the Local Authority. In relation to main roads, State highways and motorways, the appropriate defendant would be the Commissioner.

#### **4.4 SOUTH AUSTRALIA**

When attempting to identify the appropriate authority in respect of a collision in South Australia with a hazardous roadside object, such as a utility pole, street lighting pole, traffic control signal or sign post, five Acts must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In South Australia these provisions are found in the *Local Government Act*, 1934-1982 and the *Highways Act*, 1926-1982. In addition, these Acts also contain provisions relating to the specific powers of these authorities to erect certain types of objects, such as street lights, traffic control signals and signs, on or along the road. In relation to the powers to erect traffic control signals and signs, reference must also be made to the *Road Traffic Act*, 1961-1982.

In respect to the power to erect utility poles along the road and to some aspects of street lighting, reference should be made to the *Electricity Trust of South Australia Act*, 1946-1980 and to the *Adelaide Electric Supply Company's Acts*, 1897 to 1931. (This latter Act is the collective title for all legislation referring to the Company, and includes *The South Australian Electric Light and Motive Power Company's Act*, 1897.)

The pattern of this section is firstly to provide an overview of the powers and duties of the authorities responsible for the care and management of the roads. This is followed by sections relating to specific categories of roadside objects: street lighting poles, utility poles, traffic control signals and signs. The investigators have attempted to identify in each section the authority or authorities legally responsible for the particular object.

##### **4.4.1 Care, Control and Management of Roads in South Australia**

In South Australia, the care, control and management of all public roads is vested either in the Commissioner of Main Roads, a body corporate established pursuant to the *Highways Act*, 1926-1982 or in the local council in whose area the road is situate. In addition, the Commissioner has defined powers in respect of all public roads, including those within local council areas, for certain purposes, e.g. street lighting and the posting of signs.

The Commissioner has the responsibility of recommending which roads shall be main roads or controlled access roads. (Sections 30 and 30a of the *Highways Act*, 1926-1982.) The declaration is made by proclamation of the Governor.

Sub-section 27ca(1) of the *Highways Act*, 1926-1982 vests the materials of all public roads outside a district in the Minister of Local Government and places them under the care of the Commissioner. Sub-section 27ca(1), so far as relevant provides:

All public roads (whether main roads or not) which are outside a district, together with the timber growing thereon, and the bridges thereof, and all public works connected therewith, and all lamps, direction boards, mile stones, mile posts, posts, rails, walls, chains, fences, and other things erected or affixed thereto shall be vested in the Minister of Local Government and be under the care, control, and management of the Commissioner.

In addition it is clear that ss. 18 and 20 of the *Highways Act, 1926-1982* envisage that the Commissioner may have land which is located within a local council area vested in him for the purposes of a road. (E.g. South Eastern Freeway and Reynella Bypass.)

Local councils generally have the care and management of streets, other than main roads, within their area. They are empowered by the *Local Government Act, 1934-1982* to undertake certain activities, such as the provision of street lighting, traffic signs, etc. But, as mentioned above, the Commissioner also has concurrent powers in relation to traffic signs and street lighting. Sub-section 26(1) of the *Highways Act, 1926-1982* provides that the Commissioner may, with the consent of the Minister and after notifying the local council, exercise powers of construction, reconstruction, maintenance and repair of any road or work on a road located within a local council area. It would appear from a perusal of the standard notification issued pursuant to this section that the Commissioner exercises his powers only in respect of the paved portion of the road, and that the road reserve in such instances remains vested in the local council.

The *Local Government Act, 1934-1982* vests public streets and certain matters thereon in the council of the area, except where the erection is the property of another person or where otherwise provided by the *Highways Act, 1926-1982* or the *South-Eastern Drainage Act, 1931-1980*. Sub-section 306(1) of the *Local Government Act, 1934-1982* states, in part:

The fee simple of every public street and road within any area shall be vested in the council, and the timber growing thereon, and the bridges thereof, and all public works connected therewith, and all lamps, direction-boards, mile-stones, mile-posts, posts, rails, walls, chains, fences, and other things erected thereon, or affixed thereto (not being the property of any other person), shall be vested in and shall be under the care, control and management of the council of such area. . . . Provided that nothing in this section shall be deemed to affect the powers and duties conferred and imposed on the South-Eastern Drainage Board by the South-Eastern Drainage Act 1931 with respect to any drainage works within the meaning of the said Act, or on the Commissioner of Highways by the Highways Act, 1926, with respect to main roads within the meaning of the said Act, and anything erected on or affixed to any street or road pursuant to either of the said Acts.

It therefore follows that a local council is deemed to be the owner of and responsible for the care and management of roads under its control and erections placed thereon except in the following circumstances:

- (1) where the erection is the property of another person;
- (2) where the erection is placed by the South-Eastern Drainage Board or the Commissioner of Highways pursuant to the legislation established and controlling both these bodies;
- (3) where the road is vested in the Commissioner.

The Commissioner of Highways has the care, control and management of all public roads outside a local district as well as any roads vested in the Commissioner. Unlike the provisions in the *Local Government Act, 1934-1982* noted above, there is no provision in the *Highways Act, 1926-1982* exempting property belonging to another from the effect of the ownership provision. Therefore, in relation to these roads the Minister of Local Government may be the owner of erections placed by other bodies along the road, while the care, control and management of these objects vests in the Commissioner.

#### 4.4.2 Street Lighting

Section 482 of the *Local Government Act, 1934-1982* empowers a local council to light streets, roads and public places within its area and for that purpose to manufacture or contract for the manufacture of gas, electricity, etc., and to provide or contract for the supply of the appropriate equipment. A local council, in pursuance of the powers given in s. 482 may erect lamp-posts and other lighting appliances and may alter or remove such lamps or lamp-posts. (Sections 483 and 484.)

Sub-section 26c(1) of the *Highways Act, 1926-1982* empowers the Commissioner, with the approval of the Minister, to light any road, and for that purpose the Commissioner may exercise the powers of a council pursuant to ss. 483 and 484 of the *Local Government Act, 1934-1982*. When such a road is provided with street lighting, the Commissioner may require the Council in which the road is located to pay one half the cost of lighting the road. (Sub-section 26c(2) of the *Highways Act, 1926-1982*.)

Both local councils and the Commissioner may provide street lighting themselves or contract with another body or person to do so. The Electricity Trust of South Australia is empowered to enter into contracts for the provision of lighting. Sub-section 40(1) of the *Electricity Trust of South Australia Act, 1946-1980* provides, in part, that the Trust may exercise the powers specified in the *Adelaide Electric Supply Company's Acts, 1897*

to 1931. By s. 15 of the *South Australian Electric Light and Motive Power Company's Act*, 1897 the Company was given the power to enter into contracts for the supply of lighting.

Therefore, in relation to any street lighting which posed a hazard, it is suggested that wherever the Commissioner has provided the lighting, pursuant to s. 26c of the *Highways Act*, 1926-1982, irrespective of control over the road, the Commissioner would be the appropriate authority to incur liability. Where a local council has provided street lighting, pursuant to ss. 483 and 484 of the *Local Government Act*, 1934-1982 the council would be the owner and controller and would thus be the body likely to incur liability.

#### **4.4.3 Utility Poles**

The Electricity Trust of South Australia (E.T.S.A.) is the body primarily responsible for the supply of electricity within the State. Though local councils may be empowered by the Governor, pursuant to s. 495 of the *Local Government Act*, 1934-1982 to supply electricity, this part of the report will concern itself exclusively with E.T.S.A. Sub-section 40(1) of the *Electricity Trust of South Australia Act*, 1946-1980 empowers the Trust to supply electricity as well as to exercise all the powers specified in the *Adelaide Electric Supply Company's Acts*, 1897 to 1931. Section 5 of the *South Australian Electric Light and Motive Power Company's Act*, 1897 (the first of the Adelaide Electric Supply Company's Acts) empowered the company to place

over, along or across any such streets, stretch and maintain any wire or cord, and erect any masts or posts for supporting any such core or wire. . . .

This provision empowers the Trust to place its poles and wires along or on any street.

This power of the Trust is limited by sub-s. 363a(1) of the *Local Government Act*, 1934-1982 which provides that the Trust shall, on the request of a council, remove any pole on a street (other than a street or road the maintenance of which is in the hands of the Commissioner) and may, after consultation with the local council erect a pole on a street in place of the one so removed. The sub-section makes it clear that the Trust is obligated to effect such removal only where the Commissioner of Highways certifies that there is a sufficient reason for removal.

There appears not to be a corresponding provision in the *Highways Act*, 1927-1982 but on the basis of the ownership provisions in s. 27ca, the Commissioner would probably have the power to refuse permission to the Trust to place a utility pole on land under the Commissioner's control.

The investigators are of the opinion that, in respect of a hazardous utility pole located along a road under the control of a local council, the Trust would be solely liable. No liability could accrue to a council as s. 306 of the *Local Government Act*, 1934-1982 states that the Commissioner remains unaffected in its powers and duties over anything erected on or affixed to any street or road.

With respect to utility poles located along a road under the control of the Commissioner, the Trust would be the body most likely to incur liability. Nevertheless, the effect of s. 27ca of the *Highway Act*, 1926-1982 may place such poles under the control of the Commissioner and liability might conceivably attach to the Commissioner for permitting a hazard.

#### **4.4.4 Traffic Control Signals and Signs**

The installation of traffic control signals and signs and other traffic devices is covered by provisions in the *Highways Act*, 1926-1982, the *Local Government Act*, 1934-1982 and the *Road Traffic Act*, 1961-1982.

A local council may "construct, erect, or maintain on any public street" certain things, including direction and traffic signs (section 355, *Local Government Act*, 1934-1982). However, no council shall license the erection of certain things, including traffic and direction signs, on main roads without the prior consent of the Commissioner (sub-section 41(2), *Highways Act*, 1926-1982).

The Commissioner, by virtue of s. 30c of the *Highways Act*, 1926-1982 is empowered to "erect notices of any kind . . . on any part of any road for the purpose of indicating the division of the paved portion of that road into traffic lanes and for the direction and guidance of traffic".

Section 5 of the *Road Traffic Act*, 1961-1982 defines a "traffic control device" as

- (a) any traffic lights, signal, stop sign, give way sign, sign indicating a speed limit, stop line, give way line, barrier line, line or mark to regulate or guide traffic, pedestrian crossing, safety island, safety bar, safety zone, traffic island, roundabout or dividing strip;

- (b) any other sign, signal, device, mark or structure the purpose of which is to regulate or guide the movement of traffic and the standing of vehicles; and
- (c) any other sign, signal, device, mark or structure declared by proclamation to be a traffic control device.

Section 9 of the Act empowers the Governor to declare by proclamation that any signs, signals, etc. shall be a class of traffic control devices within the meaning of the Act and to revoke or vary such proclamation.

Section 11 of the Act establishes the Road Traffic Board of South Australia. Section 15 sets out the functions of the Board. Two of its functions relate to traffic control devices:

- (a) to make recommendations to the Minister and other authorities concerned with road construction or road traffic, on the use of traffic control devices and other measures to be taken to prevent road accidents, to improve the flow of traffic, and to eliminate causes of danger and traffic congestion on roads;
- (b) to promote uniformity in the design, specifications, location and proper use of traffic control devices.

Sections 16-19 and 25 of the Act relate to the installation of traffic control devices. Sub-section 16(1) states that "Authority" means the Commissioner of Highways, a council, the State Transport Authority, or any other body in whom the care, control and management of a road is vested. Sub-section 16(2) declares that a road is under the care, control and management of the Commissioner if the Commissioner has taken over the maintenance and repair of that road.

Section 17 provides that an Authority may with the approval of the Board, install, maintain, alter, operate or remove a traffic control device on or near a road. The section also provides a procedure for reviewing decisions of the Board in respect to an application by an Authority to do so.

Section 18 provides that the Board may direct an Authority to install, maintain, alter, operate or remove a traffic control device on or near a road and provides procedures for an appeal to the Minister.

Section 19 provides that the cost of installing, maintaining, altering, operating, or removing a traffic control device shall be borne by the Authority which has the care, control and management of the road.

Sub-section 25(1) provides:

Every traffic control device —

- (a) must comply with any regulations applicable to it;
- (b) subject to the regulations, must be of such design as is fixed or approved by the Board; and
- (c) must be erected or placed or marked so as to be clearly visible to drivers travelling towards the face of the device.

Sub-section 25(4) provides that an Authority shall maintain traffic control devices in good order.

The *Road Traffic Act*, 1961-1982 thus makes the approval of the Board a pre-requisite to the installation of a traffic control device as defined in s. 5 or proclaimed by s. 9. In respect of roads for which the Commissioner has the responsibility of maintenance, the Commissioner is the authority responsible for the installation, operation etc. of traffic control devices and thus would be the body likely to incur liability if the device was negligently located or of a negligent design. In respect of roads within a local council district and which are not the Commissioner's responsibility to maintain, the local council is the authority which is responsible for the device, and would thus be the body most likely to incur liability.

## 4.5 TASMANIA

When attempting to identify the appropriate authority in respect of a collision in Tasmania with a hazardous roadside object, such as a utility pole, street lighting column, traffic control signal or sign post, four Acts must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In Tasmania these provisions are found in the *Local Government Act* 1962 and the *Roads and Jetties Act*. 1935. In addition, these Acts also contain provisions relating to the specific powers of these authorities to erect certain types of objects on or along the road, such as street lights, traffic control signals and signs. In relation to the latter powers, reference must also be made to the *Traffic Act* 1925.



(It should be noted here that the *Local Government (Highways) Act* 1982 which consolidates the provisions relating to highways now found in the *Local Government Act* 1962 was passed in 1982. As yet only ss. 1 and 2 of that Act have been proclaimed. The analysis provided here is based on the law as it stood at 31st December, 1982, i.e. it is based on the provisions which are found in the *Local Government Act* 1962.)

In respect to the power to erect utility poles along the road and to some aspects of street lighting reference must also be made to the *Hydro-Electric Commission Act* 1944 which contains provisions regarding the powers of the Hydro-Electric Commission which is responsible in Tasmania for the supply and transmission of electricity.

The pattern of this section is firstly to provide an overview of the powers and duties of the authorities responsible for the care and management of the road. This is followed by sections relating to specific categories of roadside objects: street lighting poles, utility poles, traffic control signals and signs. The investigators have attempted to identify in each section, the authority or authorities legally responsible for the object.

#### **4.5.1 Care, Control and Management of Roads in Tasmania**

In Tasmania, there are two broad classes of roads: those which are declared roads under the *Roads and Jetties Act* 1935 and those which are not so declared. Roads which are not declared are vested in the corporation of the municipality through which the road runs.

Declared roads are further categorised as State highways and subsidiary roads. Control over these roads is vested in the Minister responsible for the administration of the *Roads and Jetties Act* 1935. Subsidiary roads are classified into four groups: main roads, secondary roads, developmental roads and tourist roads. For the purposes of this part, reference will be made to State highways and subsidiary roads.

**4.5.1.1 Municipal Roads.** The term municipal road is used here to indicate those roads which are not declared under the provisions of the *Roads and Jetties Act* 1935 as a State highway or subsidiary road.

The *Local Government Act* 1962 vests control over those roads in the corporation of the municipality in which the road is located. Section 332 of that Act provides that the duty at common law to repair is the responsibility of the corporation of the municipality. Section 335 states that every highway repairable by the corporation is vested in it and, subject to the *Traffic Act* 1925, the corporation has the care, control and management of such road.

Section 369 gives the corporation the power to "make, remake, or otherwise improve any highway repairable by it". The corporation is empowered to erect objects, such as lights, posts, statues, trees, etc., on or along a road "but not so as to create a serious obstruction to traffic" (s. 370). Section 372 provides that the corporation may exercise the powers conferred in ss. 370 and 371 in respect of State highways with the consent of the responsible Minister. Section 589 specifically empowers the corporation to light the streets.

It is arguable that in Tasmania the corporation of a municipality has had placed upon it a higher duty, in legal terms, in respect of hazardous objects located along the road than in other States. Section 806 provides:

Where a highway runs over land of the municipality that municipality's liability for torts in respect of the highway is —

- (a) as landowner, that of a private owner of land subject to a highway repairable by the inhabitants at large; and
- (b) as highway authority, where it is the highway authority, that of a highway authority for a highway over land of a private owner.

(It should be noted that this section will be repealed when the *Local Government (Highways) Act* 1982 is proclaimed.)

**4.5.1.2 State Highways and Subsidiary Roads.** State highways and subsidiary roads are the primary responsibility of the Minister although corporations may, at his direction, exercise maintenance functions and may, with his consent, place or erect certain objects along the road.

By s. 7 of the *Roads and Jetties Act* 1935 the Governor may by proclamation declare a road to be a State highway or subsidiary road with the appropriate classification of the latter. By s. 52A the Governor may declare that a State highway or subsidiary road or any portion thereof is a limited access road.

Sub-section 8(1) provides that "All State highways and subsidiary roads shall be vested in Her Majesty, and shall be under the control and direction of the Minister." Sub-section 8(2) states that "the Minister shall cause all State highways and subsidiary roads to be maintained", except as otherwise provided.



The Minister is further empowered to prevent the placement or erection of objects or structures along a State highway or subsidiary road. Sub-section 15(1) provides that if a service authority (which is defined in s. 3 of the Act as including a person supplying electricity etc.) “desires to erect any pole or tower for carrying electric mains or wires along any portion of a State highway or subsidiary road”, it shall apply for permission from the Minister to do so and shall submit plans.

Sub-section 15(2) provides that the Minister may grant permission in accordance with the submitted plan or with such alteration as the Minister thinks fit. Sub-section 15(3) states that, should the service authority erect any pole or tower otherwise than in accordance with the permission, the Minister may direct that the erection be removed at the authority’s expense.

Section 16 clearly indicates that the Minister has absolute control over the placement of objects along a State highway or subsidiary road and suggests that liability may attach to the Minister for consenting to the placement of a hazardous object. Section 16 states:

- (1) Structures shall not be erected or placed and other works shall not be done in a State Highway or subsidiary road without the consent in writing of the Minister.  
[a penalty is provided]
- (2) This section —
  - (a) extends to local authorities acting under section eleven;
  - (b) does not authorize a common nuisance;
  - (c) does not affect the operation of Chapter XV of the *Criminal Code*; and
  - (d) does not affect civil remedies.
- (3) The Minister’s consent under this section may be, at his discretion, granted absolutely or on condition, withheld, or withdrawn.

#### **4.5.2 Street Lighting**

Street lighting on municipal roads is the responsibility of the corporation of the municipality (s. 370 of the *Local Government Act* 1962). Sub-section 589(2) provides that, for the purpose of lighting streets within its own district, a corporation may “erect posts, wires, stays and other works” and “attach lamps, brackets, wires, insulators, and stays to nearby trees and structures”. It further provides that the corporation may construct or purchase works for this purpose or may contract with another to do so. A corporation may exercise this power over State highways but only with the consent of and according to the conditions imposed by the Minister (sub-s. 589(3)).

Although no specific provisions have been found in the *Roads and Jetties Act* 1935 empowering the Minister to light streets under his control, it is assumed that this power is part of his general powers of control and management.

Paragraph 15(2)(c) of the *Hydro-Electric Commission Act* 1944 empowers the Commission to “provide, sell, let for hire, fix, repair, maintain, and remove electric lines, fittings, apparatus, or appliances for lighting” etc.

Section 56 of the *Hydro-Electric Commission Act* 1944 states that all fittings, appliances, etc. let on hire or belonging to the Commission remain its property wherever situate.

It therefore follows that a local corporation may erect street lighting, or contract with the Commission or other persons to do so, on streets under its control or, with the consent of the Minister, on a State highway. Where the corporation contracts with the Commission to provide street lighting, the fittings (e.g. poles and lamps etc.) remain the property of the Commission.

It would appear from the general powers contained within the *Roads and Jetties Act* 1935 (and specifically from the provision in the *Local Government Act* 1962 that the Minister’s authorisation is required before a corporation may light a State highway) that the Minister may exercise the same powers of lighting over roads under his control.

It is submitted that the road authority (either the Minister or the corporation) which installed or contracted for the installation of the street lighting, would be the body most likely to incur liability in respect of a hazardous pole, irrespective of the fact that the pole may be the property of the Hydro-Electric Commission. This conclusion is reinforced in respect of State highways and subsidiary roads by the provisions in the *Roads and Jetties Act* 1935 which provide that the Minister’s consent is required for the erection of poles or towers on

such roads and by the provisions in the *Local Government Act* 1962 requiring his consent for the erection of street lighting by corporations. It would appear that by virtue of the Minister's powers of absolute control over these categories of roads that he would be liable in respect of street lights which were erected with his approval.

#### **4.5.3 Utility Poles**

The supply and transmission of electricity is carried out in Tasmania by the Hydro-Electric Commission pursuant to the *Hydro-Electric Commission Act* 1944.

Sub-section 15(2) of the Act sets out the powers of the Commission in respect to the generation and transmission of electricity. Paragraph 15(2)(a) states that the Commission may "construct any works, and may operate, manage, control, . . . any business whatsoever, relating to . . . the generation, reception, transmission, distribution, supply and sale of electrical energy."

Sub-section 45(1) empowers the Commission to place standards on any streets and to place and maintain wires and cables under, over, across or along any road or street.

Unlike some of the other States, there is no doubt in Tasmania that the Commission retains ownership of poles placed along a road or on the property of another person. Section 56, mentioned in the previous section on street lighting, states:

All electric lines, conduits, fittings, apparatus, meters, and appliances let on hire or belonging to the Commission shall, whether they are or are not fixed or fastened to any part of any premises, in or upon which they may be situate, or to the soil under any such premises, at all times continue to be the property of the Commission.

The sections setting out the power of the Commission to erect poles and wires along streets must be read in conjunction with the provisions contained in the *Roads and Jetties Act* 1935 which expressly prohibit the erection of poles or towers along State highways or subsidiary roads without the Minister's consent.

The investigators have concluded that in respect of a municipal road, a corporation would not incur liability in respect to a hazardous utility pole. A corporation has no control over, nor ownership rights in, the pole. Liability would attach solely to the Commission for negligence in the location or design of a pole placed on a road under the control of a corporation.

The position in respect of State highways and subsidiary roads is slightly different. Although the Commission is undoubtedly the owner of the pole and is responsible for the day-to-day control and maintenance of the pole, the Minister responsible for administering the *Roads and Jetties Act* 1935 also has certain responsibilities which indicate that he, too, exercises some control over the location of poles. The Minister has the responsibility of approving the siting and design of the pole and thus has control over its location along a State highway or subsidiary road. Should there be negligence in the design or location of the pole and such negligence result in injury, it is possible that both the Commission and the Minister could jointly incur liability.

#### **4.5.4 Traffic Control Signals and Signs**

The installation of traffic control signals and signs and other traffic devices is covered by the provisions in the *Traffic Act* 1925.

Sub-section 59(1) of the *Traffic Act* 1925 provides that the Transport Commission may issue to highway authorities "general or particular directions as to the traffic signs to be used on public streets generally or on specified classes of such streets or in any specified cases".

Sub-section 59(3) requires that a highway authority use the traffic signs supplied by the Commission in conformity with the directions of the Commission and to provide such holders and posts as are necessary.

Sub-section 59(8) of the *Traffic Act* 1925 defines the expression "traffic sign" as meaning "any signal, warning, sign-post, direction post or other device for the guidance and direction of traffic on public streets . . ." and further defines a "highway authority" as "the person responsible for the maintenance of the public street in relation to which the expression applies".

It is clear from the foregoing provisions that the body most likely to incur liability for a hazardous traffic control signal or sign is the appropriate highway authority. It would appear, having regard to the provisions in the *Roads and Jetties Act* 1935 and the *Local Government Act* 1962 (discussed in previous sections), that a local corporation would be the appropriate body to be sued for injuries which result from a collision with a

hazardous traffic signal or sign located on a municipal road (or on a State highway which the Minister has directed a local corporation to maintain) whereas the Minister would be the appropriate body to be sued where the collision occurred on a State highway (which the Minister has not directed to a local corporation to maintain) or a subsidiary road.

## 4.6 VICTORIA

When attempting to identify the appropriate authority in respect of a collision in Victoria with a hazardous roadside object, such as a utility pole, street lighting pole, traffic control signal or sign post, five Acts and, in one instance, regulations made thereunder must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In Victoria these provisions are found in the *Local Government Act* 1958 and the *Country Roads Act* 1958. In addition, these Acts also contain provisions relating to the specific powers of these authorities to erect certain types of objects, such as street lights, traffic control signals and signs, on or along the road. In relation to the powers to erect traffic control signals and signs, reference must also be made to the *Road Traffic Act* 1958 and the *Road Traffic Regulations* 1973.

(It should be noted here that the *Transport Act* 1983 repeals the *Country Roads Act* 1958 and the *Road Traffic Act* 1958 and other Acts and re-enacts with amendments the law relating to transport with respect to railways, roads and tramways. The analysis provided here is based on the law as it stands at 31st December, 1982.)

In respect to the power to erect utility poles along the road and to some aspects of street lighting, reference must be made to the *State Electricity Commission Act* 1958 and the *Electric Light and Power Act* 1958 which contain provisions regarding the powers and duties of the State Electricity Commission and the eleven electrical undertakers who are responsible in Victoria for the transmission of electricity.

The pattern of this section is firstly to provide an overview of the powers and duties of the authorities responsible for the care and management of the roads. This is followed by sections relating to specific categories of roadside objects: street lighting poles, utility poles, traffic control signals and signs. The investigators have attempted to identify in each section, the authority or authorities legally responsible for the particular object. Thirdly, the section concludes with a summary regarding the potential liability of the authorities involved.

### 4.6.1 Care, Control and Management of Roads in Victoria

In Victoria, there are two broad classes of roads: those which are declared under the provisions of the *Country Roads Act* 1958 and those which are not declared. Roads which are not declared are here termed unclassified roads and pursuant to the *Local Government Act* 1958, control is placed in the hands of the local council of the municipality in which the road is located.

Of the six categories of declared roads, only the three most numerous have been considered for the purposes of this section: main roads, State highways and freeways. Control over these categories of roads is vested in the Country Roads Board.

The provisions of both the *Local Government Act* 1958 and the *Country Roads Act* 1958 relating to the care and management of the road, which are discussed in detail below, are of importance in that they may have the effect of making the road authority responsible for objects placed on roads under their control even though the road authority is not the body which actually installs or exercises day-to-day control over the particular category of object. This may lead, in some circumstances, to the road authority incurring liability, either solely, or jointly with the installing/controlling authority, in respect of a collision with the object.

**4.6.1.1 Unclassified Roads: Local Councils.** The term unclassified roads is used here to indicate those roads which are not declared under the provisions of the *Country Roads Act* 1958. This category includes a wide range of streets, both made and unmade, passing through residential and shopping areas, with low or middle range speed limits, and open roads where the State maximum speed limit is permitted.

According to the *Local Government Act* 1958, local councils are intended to exercise control over roads within their area. Sub-sections 535(1) and (2) of the Act give the local council the "care and management" and the power to "make improve and maintain" these roads. Sub-section 553(1) states that the local council has the duty to keep the roads open for public use and free from obstruction.

Sub-section 551(a) states that "the materials of all public highways-streets roads . . . and all matters and things appurtenant thereto . . . shall belong to the municipality of the district within which the same respectively are". This provision is of importance in that it can be interpreted to mean that a local council is the owner of objects located along a road under its control.

There are no relevant judicial decisions clarifying the meaning of this sub-section but, when read with provisions found in other Acts relating to the placement of poles and other objects along the road (which are discussed in later sections), it is submitted that a local council could incur liability in some situations, on the basis of ownership.

4.6.1.2. Main Roads, State Highways and Freeways: Country Roads Board. Generally, main roads, State highways and freeways are the responsibility of the Country Roads Board, although local councils exercise some functions.

By ss. 18, 70 and 101A of the *Country Roads Act* 1958 the Board has the responsibility of declaring which roads shall be main roads, State highways and freeways. The Governor in Council by Order published in the Government Gazette shall confirm such declaration in respect of main roads and State highways. In respect of freeways, the Board's declaration, published in the Government Gazette, is sufficient.

By s. 24 of the *Country Roads Act* 1958, local councils are required to maintain main roads within their area. Section 23 states that the local council shall carry out all permanent works to main roads, but such work shall be carried out to the satisfaction of the Board. The definition of "permanent works" in s. 3 of that Act includes "permanent improvement" a category which is defined as including:

all works . . . which are in the opinion of the Board calculated to increase the utility safety capacity or amenities of the road . . . and includes traffic engineering works . . . and lights for illuminating the road . . .

By virtue of sub-s. 72(1) and s. 74 of the *Country Roads Act* 1958, local councils have no financial responsibilities in respect of either the maintenance of, or the construction of, permanent improvements to State highways, except in relation to cost-shared lighting. In relation to freeways, sub-s. 99(1) provides that the Board is solely responsible for the construction, improvements to, and maintenance of freeways. Section 193 provides that local councils have no financial responsibilities in relation to freeways.

Sections 64, 74 and 101 of the *Country Roads Act* 1958 preserve the rights of local councils in respect of these three categories of roads. Local councils are given the same powers over these roads as they have in respect of other public roads within their municipality, except where inconsistent with Part II of the Act.

Other provisions in the *Country Roads Act* 1958 indicate that the Board is the body primarily responsible for the care and management of the road including the placement of objects on or along the road. Sub-section 43(2), together with ss. 74 and 101 are of major importance in this respect. This provision, couched in terms similar to but stronger than those in the *Local Government Act* 1958, states that the materials of these roads, and all matters and things appurtenant thereto, and all buildings, gates, posts etc. and erections placed thereon and all scrapings thereof belong to the Board.

Other indicia of the Board's control are the Board's general powers of supervision: ss. 53, 74 and 101 which make the placement of an obstruction on a road without the Board's consent or other lawful authority unlawful and hence liable to a penalty; ss. 52A, 74 and 101 which provide that any person who damages or interferes with a roadside fixture is liable to a penalty.

Section 106 is of special importance in that it prohibits any authority or person, irrespective of powers conferred on them in any other Act, from placing certain objects along freeways. It states:

Notwithstanding anything in any Act no tower pole wire pipe or other structure or apparatus shall be placed on over or under any freeway by any public authority or Government department or any person without the prior consent in writing of the Board.

The provisions of the *Country Roads Act* 1958 mentioned above clearly indicate that the primary responsibility for main roads, State highways and freeways vests in the Country Roads Board.

The Board has the financial responsibility of main roads, State highways and freeways. In addition, the Board also has general supervisory powers over these categories of roads and is deemed to be the owner of any erections placed on or along the road. This is of prime importance, as works placed on or controlled by other bodies are not excepted from this provision. If another Act stated unequivocally that an object placed by

another authority remained that other authority's property, the statutory presumption of ownership in the Board might be displaced. This matter is discussed in more detail below.

Local councils have a responsibility for the maintenance of main roads in their district. In respect of construction of permanent works (which includes street lights and traffic engineering), a local council can undertake such work only on main roads in its district and such works must be carried out to the satisfaction of the Board. It is unlikely that such limited powers would be sufficient to view the local council as a potential defendant in respect of this category of road.

In relation to freeways, the Board has the power to prevent any objects from being placed along it, irrespective of any provision in any other Act and, in this respect, the Board might incur liability if it consented to the erection of a hazardous object.

#### **4.6.2 Street Lighting**

Street lighting on unclassified roads is the responsibility of the local council. Sub-section 687(2) of the *Local Government Act* 1958 empowers a local council to erect lamps and lamp posts for the lighting of these streets or to contract with another body to do so, in which case it may be provided that the lamps and lamp posts be vested in the council.

The normal practice for most councils, except those which are also electricity undertakers, is for them to contract with the State Electricity Commission (S.E.C.) which carries out the design and installation of the lighting and is responsible for the day-to-day care of the equipment. The S.E.C. submits its plans for the design and location of the pole to officers of the local council for approval. The local council pays an annual tariff to the S.E.C. in respect of running costs and maintenance of the lights. Most councils do not, in their arrangements with the S.E.C., specifically provide for the lamps and lamp posts to be vested in the council.

Even though the local council initiates action for street lighting on unclassified roads and pays for it, it is the S.E.C., for the most part, which controls it. If a light pole is damaged, for example, by a motorist, s. 52 of the *Electric Light and Power Act* 1958 and s. 107 of the *State Electricity Commission Act* 1958 empower the electricity supplier (which in most cases is the S.E.C.) to recover for the damage caused.

It is submitted that, in respect of street lighting on unclassified roads which constitutes a hazard, either the local council or the S.E.C., or both, could be liable. It is arguable that the local council could be liable on either or both of two grounds:

- (i) it is legally deemed to be the owner of the pole due to the effect of s. 551 of the *Local Government Act* 1958, or
- (ii) it is the owner, in fact, and creates an agency relationship with the S.E.C. to install it on the council's behalf after independently approving its design and location and for which the local council pays an annual fee.

The issue of ownership could be further affected by any written agreement reached by the S.E.C. and local council regarding the street lighting in question.

The S.E.C. could be the appropriate defendant if s. 551 of the *Local Government Act* 1958 does not have this effect and if the fact of the council's initiation, approval and payment for the pole does not displace the S.E.C.'s ownership of the pole.

Both the local council and the S.E.C. could be jointly liable on the basis of the division of ownership and control.

Street lighting on main roads and State highways may fall into one of two categories: street lighting installed by the S.E.C. at the request of a local council, or cost-shared lighting installed by the S.E.C. but jointly paid for by the S.E.C., the Board and the local council.

In relation to the first category, a local council may install street lighting pursuant to the powers under the *Local Government Act* 1958 which permit it to place lamps and lamp posts on streets and roads within its area. However, any permanent works (which include street lighting) must be installed to the satisfaction of the Board, as per sub-s. 23(2) of the *Country Roads Act* 1958, discussed above.

In addition, by virtue of sub-s. 43(2) and s. 74 of the *Country Roads Act* 1958 the Board is deemed to be the owner of "all matters and things appurtenant" to main roads and State highways and "all buildings fences gate posts boards stones and erections placed" upon main roads and State highways. If street lights can

be considered as either “appurtenant to” or an “erection upon” the road, then the Board is deemed to be the owner.

This ownership provision together with the requirement that permanent works undertaken by a council must be carried out to the satisfaction of the Board, indicate that the Board exercises control over and possibly owns street lighting which is placed along a main road or State highway by the S.E.C. at the initiative of a local council. Because of these provisions, it would appear that the Country Roads Board could be liable for street lighting of this category, at least if the Board knew, or reasonably should have known, that the work had been erected. It is also likely that the local council and the S.E.C. could be liable on the same basis as was discussed in relation to street lighting on unclassified roads.

The other category of street lighting on main roads and State highways is cost-shared lighting which is governed by ss. 72, 72A, 72B and 112B of the *Country Roads Act* 1958. The Act provides that where a main road or State highway is unlit or is not lit to a high enough standard, the Board is to initiate action to have street lighting installed on those sections which, in the opinion of the Board, require it. The Board, by virtue of ss. 112B and 72B must initiate this action and, once initiated, it is the duty of the Board to obtain the approval of the Street Lighting Committee.

Section 72A of the *Country Roads Act* 1958 sets out the function of the Street Lighting Committee. Its function is to determine a minimum level of street lighting, to examine plans and, where the lighting provided is not lower than the standard, to approve them, to resolve problems or disputes associated with street lighting schemes, and generally to do whatever is required by the Act.

Once the street lighting meeting the required standard is approved, sub-s. 72(5) of the *Country Roads Act* 1958 provides that the cost of the installation, operation and maintenance of the light shall be borne in equal thirds by the Board, the S.E.C. and the council of the municipality in which the road is located or, where the council is also the electrical undertaker, it bears two-thirds of the cost.

The investigators are of the opinion that primary liability in respect of cost-shared lighting should be borne by the Board. It is the body which decides that the particular section of road should be lit and it is its responsibility to make the arrangements with the S.E.C. and the local council. It is also responsible for the submission of plans to the Street Lighting Committee.

Additionally, as with the category of lighting discussed above, the Board may be deemed to be the owner of the lighting columns by virtue of sub-s. 43(2) and s. 74. For these reasons the Board is the authority most likely to incur liability in respect of cost-shared lighting, although it is possible that the S.E.C. and local council could be jointly liable.

In relation to freeways, the Board has exclusive control over the construction of permanent improvements, such as street lighting, by virtue of ss. 99, 100 and 192 of the *Country Roads Act* 1958. The Board may construct street lighting itself or it may contract with another body, such as the S.E.C., to do it.

The provisions relating to the Board's ownership of appurtenances and erections along the road are deemed by s. 101 of the Act to apply to freeways. In addition the Board is solely responsible for street lighting along freeways. Section 106 of the Act makes it clear that no tower or pole can be erected without the Board's consent. Irrespective of whether the Board undertakes the installation of street lighting itself or not, it is by dint of both ownership and control, that the Board is solely responsible for street lighting on this type of road and that no other authority could incur liability in respect of a hazardous pole placed here.

#### **4.6.3 Utility Poles**

The supply and transmission of electricity is carried out in Victoria by the S.E.C. or, in some areas, electrical undertakers. For the most part, their powers and duties are similar, and reference in this part will be to the S.E.C. and its controlling legislation, the *State Electricity Commission Act* 1958.

Section 21 gives the S.E.C. the power to “construct maintain and work” any electrical undertaking and to supply electricity. Paragraph 106(1)(b) gives the Commission the power to conduct or transmit electricity via poles (and other devices) “over through under along or across any lands street road bridge”. Paragraph 106(1)(f) gives the Commission power to enter upon any public or private lands streets or roads and construct any works and erect on under over along or across the same any poles and electric lines and to repair and remove such works. Section 106 thereby empowers the S.E.C. to place utility poles along any road under the control of either a local council or the Country Roads Board. The only exception is in relation to freeways

where s. 106 of the *Country Roads Act* 1958 expressly prohibits their placement without the prior written consent of the Board. Therefore control in the legal sense rests with the S.E.C. of Victoria.

The position of ownership, however, is not as clear. Unlike the controlling legislation in some of the other Australian States, the *State Electricity Commission Act* 1958 does not explicitly state that poles placed on land belonging to another continue to remain the property of the S.E.C. A difficulty arises because there are sections in the *Local Government Act* 1958 and the *Country Roads Act* 1958 which appear to provide that the local council in respect to undeclared roads and the Country Roads Board in respect to declared roads, is deemed to be the owner of matters appurtenant to or erections upon the road. Nothing in either of these two Acts, unlike those in some other States, suggests that these provisions do not extend to objects placed there by a different authority, such as the S.E.C. It is therefore arguable that a local council or the Board could be deemed to be the owner of a utility pole placed by the S.E.C. along a road. Another legal basis upon which it could be declared that the owner of the poles is not the S.E.C. is by operation of the common law (non-statutory). If the poles are considered fixtures, then they will belong to the owner of the land and not to the S.E.C. Until the relevant section of the statute is construed judicially, or the legislation amended, some doubt may continue to be expressed.

In summation, there is no doubt that the S.E.C. has the control over utility poles installed by it and is the body responsible for their maintenance and day-to-day control. On the basis of this control, it would seem likely that the S.E.C. is the body which would incur primary liability in respect of a hazardous pole. On the basis of ownership, it is conceivable that a local council or the Board could be jointly liable as well.

In respect to a pole located along a freeway with the consent of the Board, it is possible that the S.E.C. and the Country Roads Board could be jointly liable, the S.E.C. because of its control and the Board because it expressly permitted a hazard.

The statutory position regarding motorists who damage roadside utility poles is unequivocal. Section 107 of the *State Electricity Commission Act* 1958 incorporates s. 52 of the *Electric Light and Power Act* 1958 which allows the Commission to recover compensation for damage caused by a motorist to equipment either belonging to or controlled by the S.E.C.

#### **4.6.4 Traffic Control Signals**

As with other roadside objects, an instrumentality will be potentially liable for its negligent act if it either owns, or manages or controls a traffic control signal or sign. Ownership and control over signs and traffic signals is regulated by statute, and regulations made pursuant to statute. By sub-s. 4(1) of the *Road Traffic Act* 1958 the Governor in Council is empowered to make regulations with respect to the control of traffic. In particular, para. 4(1)(b) empowers the Governor in Council to make regulations prescribing standard warning and operative signs and their siting. Sub-section 5(1) of the Act provides that the Governor in Council may by Order require any council, the Country Roads Board or the Melbourne and Metropolitan Board of Works to remove, alter or improve any sign or device.

In order to ascertain which government body is responsible for the traffic control signals and signs along the roads, one must consult the *Road Traffic Regulations* 1973 made pursuant to the powers cited above. The highway authority responsible for these items varies by type of device, and by category of road. By regulation 102, the responsible highway authority is:

- (a) in respect of warning signs, direction signs, traffic islands and signs and marks for the control of moving traffic (other than signs and marks associated with school and pedestrian crossings) on any highway which is a State highway, a main road, a tourists' road, a freeway or a forest road under the *Country Roads Act* 1958 — the Country Roads Board;
- (b) in respect of no-standing signs or parking signs on any highway which is a freeway under the *Country Roads Act* 1958 — the Country Roads Board; and
- (c) in every other respect —
  - (i) the authority legally responsible for the care and management of the highway; or
  - (ii) if the Country Roads Board is so responsible — the municipal council in whose district the highway in question is situated.

By virtue of this definition, the Country Roads Board is the responsible highway authority in respect of certain types of signs and devices on the five categories of roads mentioned, and the local council is the responsible authority for all other items which are not included in the definition. It is not clear whether it would



be local councils or the Country Roads Board that is the responsible authority in relation to traffic control signals, as signals are not specifically mentioned in the definition. In respect of unclassified roads the local council is the highway authority for all purposes.

The responsible highway authority does not necessarily have exclusive management or control over traffic devices. Major traffic control items may be erected, removed, or altered by the relevant highway authority only with the written consent of the Road Safety and Traffic Authority. Minor traffic control items may be erected, removed or altered by a highway authority on its own initiative (Regulation 307).

The differentiation between "Major Traffic-control Items" and "Minor Traffic-control Items" is found in regulation 102 of the *Road Traffic Regulations* 1973. Traffic signals, as well as many of the more important roadside signs such as clearway signs, intersection stop signs, de-restriction and restriction signs, etc. fall into the category of Major Items. Minor Items are defined as all devices which are not included in Major Items.

Section 113B of the *Country Roads Act* 1958 empowers the Board to install and maintain traffic control signals, after consultation with the Road Safety and Traffic Authority, on roads which the Board is constructing, widening or on which it is carrying out works of permanent improvement.

4.6.4.1 Legal Implications of Foregoing Statutes and Regulations. In relation to unclassified roads, a local council is responsible for the installation and maintenance of signs and traffic control signals although, in relation to the latter and to other items included in the definition of Major Items, the consent of the Road Safety and Traffic Authority must first be obtained. This power of control is complemented by s. 551 of the *Local Government Act* 1958, which deems a local council to be the owner of matters and things appurtenant to the road. Therefore, in relation to unclassified roads, ownership and control coincide and it is suggested that a local council would be the appropriate body to incur liability in respect of hazardous signs or traffic control signals.

In relation to main roads, State highways and freeways the matter is more complicated. By virtue of the *Road Traffic Regulations* 1973 the Board is the responsible authority for the installation and maintenance of those categories of devices which are mentioned in the definition; local councils are responsible for those devices not included. Section 113B of the *Country Roads Act* 1958 empowers the Board to erect traffic control signals, after consultation with the Road Safety and Traffic Authority, where other works are undertaken on that segment of road. Local councils may initiate action to have traffic control signals and other devices which fall into the category of Major Items installed, providing the consent of the Road Safety and Traffic Authority is first obtained.

It is therefore arguable that on a main road or a State highway a local council, having obtained the consent of the Road Safety and Traffic Authority, would be the authority responsible for the installation and maintenance of a traffic control signal or other device included in the category of Major Items. In this situation, control and management, on the one hand, would be vested in a different body than would ownership. While the local council would be in control of the object, the Country Roads Board, by dint of sub-s. 43(2) of the *Country Roads Act* 1958, is deemed to be the owner of all matters and things appurtenant to and all erections on the road. The Board, as owner, would, in the opinion of the investigators, have the power in law to alter the location or design of the object, or even effect its removal. Such rights, inherent in ownership, would also contain within themselves, the responsibility for damage negligently caused. Where ownership and day-to-day control of a particular device is vested in two different bodies, both bodies could incur liability.

In respect of freeways, a local council is legally permitted to initiate action to have a Major Item installed though in practice, this situation is unlikely to occur. Section 106 of the *Country Roads Act* 1958 which binds all authorities states that objects are not to be installed on a freeway without the prior written consent of the Board.

The legal position of the Road Safety and Traffic Authority (RoSTA) in regard to potential liability for roadside objects is a matter of some uncertainty. As mentioned previously, it must give its consent before major items of traffic control are installed. RoSTA itself, owns no roadside hardware, nor does it install, maintain, construct or control roadside objects.

Is the mere fact that its consent is a necessary condition of installation enough to impose liability upon it for a negligently designed or located roadside object? The investigators are unaware of any legal action in which RoSTA has been joined as a defendant. Undoubtedly, one of the reasons which persuaded the legislature to condition the installation of major items of traffic control upon the approval of RoSTA was to promote road



safety. This intention does not, however, necessarily mean that a suit for damages will ensue for the injured motorist. It is at least possible that RoSTA would be liable, but until an action is commenced, it must remain speculative.

## 4.7 WESTERN AUSTRALIA

When attempting to identify the appropriate authority in Western Australia in respect of a collision with a hazardous roadside object, such as utility pole, street lighting pole, traffic control signal or sign post, four Acts and, in one instance, regulations made thereunder must be consulted.

Of prime importance is the legislation setting out the powers and duties of those authorities which are responsible for the care, control and management of the road. In Western Australia these provisions are found in the *Main Roads Act*, 1930-1982 and the *Local Government Act*, 1960-1982. In addition, these Acts also contain provisions relating to the specific powers of the road authorities to erect certain types of objects, such as street lights, traffic control signals and signs, on or along the road. The provisions enabling the erection of traffic control signals and signs are located in the *Road Traffic Act*, 1974-1982 and the *Road Traffic Code*, 1975.

In respect to the power to erect utility poles along the road and to some aspects of street lighting, reference must be made to the *State Energy Commission Act*, 1979-1981 which contains provisions outlining the powers and duties of the State Energy Commission which is responsible for the supply and transmission of electricity.

The pattern of this section is, firstly, to provide an overview of the powers and duties of the authorities responsible for the care and management of the roads. This is followed by sections relating to specific categories of roadside objects: street lighting columns, utility poles, traffic control signals and signs. The investigators have attempted in each section to identify the authority or authorities responsible for the particular object. Each section concludes with a summary regarding the potential liability of the authorities involved.

### 4.7.1 Care, Control and Management of Roads in Western Australia

In Western Australia, there are two broad classes of roads: those which are declared under the provisions of the *Main Roads Act*, 1930-1982 and those which are not declared. Pursuant to the *Local Government Act*, 1960-1982 control over non-declared roads is placed in the hands of the local council of the municipality in which the road is located. The *Main Roads Act*, 1930-1982 vests control over declared roads in the Commissioner of Main Roads, a body corporate established by the Act.

4.7.1.1 Non-declared Roads: Local Councils. Responsibility is given to local councils for those roads within their area which are not under the care and management of the Commissioner of Main Roads or any other body. Section 300 of the *Local Government Act*, 1960-1982 provides in part:

A council has the care, control, and management of public places, streets, ways, . . . which are within the district, . . . except where and to the extent that under an Act, another authority has that care, control, and management.

Sub-section 301(a) gives the council the power to make, improve and maintain and keep in good order and condition streets, ways and public places, etc. Sub-section 331(1) states that the council shall keep the road open and free from obstruction.

In Western Australia, as in other States, there is a provision deeming certain materials connected with the road to be the property of the council. Unlike most of the other States, s. 304 provides that the property is to be regarded as vesting in the council only where the council is bringing proceedings in respect of it. The relevant portion of s. 304 states:

The property in —

(a) materials of, and matters and things appurtenant to, public streets, ways, and other public places bridges, culverts, fords, ferries, wharves, jetties and drains; . . .

in, or regarded under this Act as being in, a district may, in proceedings brought by the council of the municipality in relation to the property, be alleged to be the property of the municipality, and where so alleged may for the purposes of the proceedings be regarded as the property of the municipality.

It appears that the effect of this section is to make matters and things appurtenant to the road which have been placed there by a body other than the local council, the property of the council for the purpose of any

proceedings brought by the council. This would mean that if, for example, a council was attempting to recover for damage caused by a motorist to a roadside object erected by another body on a council road, the council could allege that it has a property interest in the object and stands in the position of owner. It would thus be able to recover damages.

In such a proceeding a motorist would be able, assuming that the placement or the design of the object constituted negligence, to counterclaim against the council as the council would be estopped from denying ownership. But, if the council did not institute proceedings, and the object was not placed on the road by the council, a motorist would be unable to allege that the council owned the object.

Therefore in respect of a collision with a roadside object on a road under the control of a local council, the council could only incur liability in those situations where it is the actual owner of the object in question or where, pursuant to s. 304, it institutes proceedings and alleges that it is the owner.

**4.7.1.2. Declared Roads: Commissioner of Main Roads.** In Western Australia there are three categories of declared roads: main roads, highways and secondary roads. In addition, in respect of any declared road, portions may be made subject to controlled access, which entails the imposition of additional restrictions on the placement of roadside objects.

Generally, the Commissioner of Main Roads has the responsibility for declared roads and those portions which are subject to controlled access. Sub-section 15(2) of the *Main Roads Act*, 1930-1982 states that "The Commissioner shall have the care, control and management of the land over which a highway or main road is declared". Sub-section 16(1) of the Act empowers the Commissioner to make, improve and maintain highways and main roads. The provisions in the Act relating to the construction of main roads and highways apply *mutatis mutandis* to secondary roads (s. 26).

Sections 13, 14, 24 and 28A of the Act provide that the Governor may proclaim, on the recommendation of the Commissioner, which roads shall be declared main roads, highways and secondary roads and whether any portion shall be subject to controlled access.

Local councils are charged, by sub-s. 24(5) of the Act, with the responsibility of maintaining secondary roads. Local councils have no other financial responsibilities, although they may, by sub-s. 16(3), contract with the Commissioner to construct a main road, highway or secondary road, or maintain a main road or highway.

The ownership of matters and things appurtenant to the road or erections upon the road vests in the Commissioner. Sub-section 15(3) states, in part:

The property in —

- (a) the materials of all highways and main roads, and all live and dead timber and vegetation thereon, and all matters and things appurtenant thereto; and
- (b) all buildings, fences, gates, posts, boards, stones, erections, and structures placed upon any highway or main road; and

. . .

shall vest in the Commissioner.

On controlled access portions of declared roads, all authorities or persons, irrespective of powers conferred on them by any other Act, are prohibited from placing certain objects along freeways. Sub-section 28B(1) states:

Notwithstanding the provisions of any Act, no person, local authority or agent or instrumentality of the Crown, except the Commissioner, shall place on, over or under a section or part of a road subject to control of access or any land acquired, set apart, taken or resumed for a section or part of a road subject to control of access, any tower, pole, wire, pipe or other structure or apparatus of any kind, without the prior consent in writing of the Commissioner.

Sub-section 28B(2) provides that the Commissioner may direct the removal of any object placed contrary to sub-s. 28B(1) and, if the offending person or authority does not comply, the Commissioner is empowered by sub-s. 28B(3) to remove the object and recover, as a civil debt, the expenses of doing so.

On the basis of the aforementioned provisions of the *Main Roads Act*, 1930-1982 it may be concluded that the primary responsibility for declared roads vests in the Commissioner of Main Roads.

The Commissioner has the financial responsibility for declared roads with the exception of the maintenance of secondary roads, which is a local council responsibility. In addition, the Commissioner has general supervisory powers over declared roads and is deemed to be the owner of any erections placed on or along the

road. This is of prime importance, as works placed on or controlled by other bodies are not specifically excepted from this provision. If another Act stated unequivocally that an object placed by another authority remained that other authority's property, the statutory presumption of ownership might be displaced. This matter is discussed in greater detail below.

In relation to controlled access portions of roads, the Commissioner has the power to prevent any objects from being placed thereon, irrespective of any provision in any other Act and, in this respect, the Board might incur liability if it consented to the erection of a hazardous object.

#### 4.7.2 Street Lighting

Street lighting on non-declared roads is the responsibility of the local council. Section 301 and para. 306(1)(d) of the *Local Government Act*, 1960-1982 empower local councils to provide lighting and lamp-posts on streets under their control. Section 436 sets out this power in more detail:

A council may, by contract or otherwise —

- (a) cause the streets, ways, and other public places in its district to be lighted by gas, oil, electric, or other lights;
- (b) provide such lamps, lamp posts, lampirons, poles for erecting or connecting gas pipes, electric wires, and other works and materials as are necessary for that purpose; and
- (c) manufacture or contract for the manufacture or supply of gas or electric light for the lighting of those streets, ways, and public places, and provide or contract for gasometers, electric lighting plant and any requisite apparatus and machinery.

On declared roads, the provision of street lighting is the responsibility of the Commissioner of Main Roads. Paragraph 16(1)(a) of the *Main Roads Act*, 1930-1982 states that the Commissioner may exercise the same powers in respect of main roads and highways as a local council may do in relation to roads within its district. As mentioned in the previous part, by dint of s. 26 of the Act, this provision is made applicable to secondary roads.

Additionally, as the Commissioner has the power to construct main roads, highways and secondary roads, he also has, by virtue of the definition of "road construction", the power to light those roads. "Road construction" is defined in s. 6 of the Act as including "the maintenance of roads and the provision and maintenance of street lights and traffic lights".

Irrespective of whether the road authority lights the streets itself, or contracts with some other body to do so, the road authority would be the body most likely to incur liability in respect of a street lighting column which constitutes a hazard. Therefore a local council could incur liability in respect of street lighting on non-declared roads and the Commissioner could incur liability in respect of street lighting on declared roads and controlled access portions thereof.

#### 4.7.3 Utility Poles

In Western Australia, the supply and transmission of electricity is under the control of the State Energy Commission (S.E.C.) and is governed by the provisions of the *State Energy Commission Act*, 1979-1981.

Sub-section 27(2) states that it is the duty of the S.E.C. to "provide, maintain and extend throughout the State" a supply of energy in the form of gas or electricity. Paragraph 28(3)(c) gives the S.E.C. the power to

. . . enter and occupy any land or premises . . . [and to] . . . construct, extend or improve works, maintain and conduct undertakings and facilities, and carry on undertakings or works requisite, advantageous, or convenient to the exercise or performance of the functions of the Commission or any such function;

Sub-section 49(c) of the Act further empowers the S.E.C. to enter upon any land and establish and operate any supply, service or undertaking. Sub-section 49(f) additionally empowers the S.E.C. to "do all such things as may be necessary or convenient for constructing, maintaining, altering, repairing, or using any supply system, undertaking or related works."

These sections read together, clearly empower the S.E.C. to erect poles for the transmission of electricity along any road under the control of either a local council or the Commissioner of Main Roads. The only constraints found in the *State Energy Commission Act*, 1979-1981, are found in ss. 50-53, which provide *inter alia*, that the S.E.C. when placing works on streets should cause as little damage and inconvenience as possible,

should consult with the authority responsible for the street as to the levels and proposed resurfacing of the street affected, should act with speed, erect warning lights and indemnify the responsible authority for any liability arising from the acts of the S.E.C. in carrying out the work. The other constraint on the S.E.C.'s power to place poles along the road is found in the *Main Roads Act*, 1930-1982. Section 28B expressly prohibits the placement of poles along controlled access portions of roads without the prior consent of the Commissioner of Main Roads. On the basis of these provisions, it would seem clear that control in the legal sense rests with the State Energy Commission.

The position of ownership is also clear. Sub-section 43(1) provides that where works or things have been placed on land "... in the exercise or purported exercise of a power conferred by this Act or any Act repealed by this Act" those works are the property of the S.E.C.

In summation, there is no doubt that the S.E.C. has the control over utility poles installed by it and is the body responsible for their maintenance and day to day control. The S.E.C. is also clearly the owner if it has placed the pole in the exercise of its powers under the Act. It seems likely that the S.E.C. is the body which would incur primary liability in respect of a hazardous pole.

In respect to a pole located along a controlled access road, it is possible that the S.E.C. and the Commissioner of Main Roads could be jointly liable: the S.E.C. because of its control and the Commissioner because he expressly permitted a hazard.

#### **4.7.4 Traffic Control Signals and Signs**

The installation of traffic control signals and signs and other traffic devices is covered by provisions in the *Main Roads Act*, 1930-1982, the *Road Traffic Act*, 1974-1982, and the *Road Traffic Code*, 1975.

As mentioned in the previous section, the definition of "road construction" in s. 6 of the *Main Roads Act*, 1930-1982 includes the provision and maintenance of traffic lights. It is therefore clear that the Commissioner has the power to provide and maintain traffic lights on any declared road or on any other road constructed pursuant to the power contained in s. 22 of the *Main Roads Act*, 1930-1982.

Section 111 of the *Road Traffic Act*, 1974-1982 empowers the Governor to make regulations required by the Act for the general control of traffic. Sub-paragraph 111(2)(a)(iii) specifically gives the Governor the power to make regulations empowering an authority to "erect traffic signs and traffic control signals and similar devices". Regulations made pursuant to this power are found in the *Road Traffic Code*, 1975.

Regulation 103 of the *Road Traffic Code*, 1975 defines a "traffic-control signal" and "traffic sign" as follows:

"traffic-control signal" means any device, however operated, for the control or regulation of traffic by the use of a word or words, a symbol or symbols, a coloured light or coloured lights or any combination of those things;

"traffic sign" means a sign, mark, structure or device placed, or erected, on or near a road, for the purpose of regulating, guiding or directing traffic.

Regulation 301, so far as is relevant, states:

- (1) The Commissioner of Main Roads may erect, establish or display, and may alter or take down any traffic sign or traffic control signal.
- (2) The Commissioner of Main Roads may authorise the Council of any municipality to erect, establish, display, alter or take down any particular traffic sign or traffic control signal or traffic signs or traffic control signals of a class or type of classes or types specified in his instrument of authorisation.

In other words the Commissioner may erect or alter any traffic sign or traffic control signal. A local council is empowered to do the same, either if specifically authorised by the Commissioner or, alternatively, without specific authorisation if the type of signal or sign falls within a general category which the Commissioner has authorised.

It would appear that the Commissioner would be the body most likely to incur liability for signs and signals erected on declared roads which constituted a hazard and also for any signs and signals which were erected by the Commissioner on other roads. Where a local council has erected a hazardous sign or signal on a road under its control, the local council would be the body most likely to incur liability.