

AT-SCENE IN-DEPTH RURAL ACCIDENT STUDY

Robert Hinrichs
Road Safety Division, South Australia

Rural road accidents account for more than half of South Australia's road deaths and it appears that the proportion is increasing. We know from existing mass data that rural crashes are different in many ways to metropolitan crashes. They tend to involve more accidents where cars run off the road and hit fixed objects (usually trees) and commonly involved roll over. In the metropolitan area accidents appear to be more rear collision or right angle accidents and in the country accidents tend to be more severe. Little research has been done on the real causes of rural road accidents. At the moment a national study of aspects of rural road accidents is under way. As part of this study the National Health and Medical Road Accident Research Unit has been commissioned to undertake an indepth study into a sample of SA rural road crashes.

An in-depth study is rather a descriptive and qualitative study. This type of study is intended to provide the real details of the usually complex causal pattern leading to accidents. The interaction between human factors, vehicle features, and environmental factors combine to produce the accident circumstances. Accuracy and richness of detail are the essence of an in-depth study. We attend the scene of the accidents and this has benefits we often see. e.g.:

1. The marks left by some vehicles were completely invisible 3 days after the accident occurred.
2. Quite often the vehicle itself may be disturbed before detailed examination can be done. In the case shown you can see the radiator of the vehicle is approximately 180° from where it normally would be. By the time we came to look at it again someone had tried to put back together.
3. Very commonly, vehicle positions are completely lost as soon as the vehicle is moved. It is almost impossible to find where it came to rest and this is often very important when trying to reconstruct the dynamics of the accidents.
4. While the conventional means of doing sight mapping has served us very well over the years we try to do it a bit more accurately.

The team of 2 people are paged by St. John Ambulance for all out of town (which we define as occurring in 80 kmp/h zones or greater) vehicle accidents within about 1 hours drive from Adelaide. Our objective is to arrive before the vehicles have been moved. Usually we are on the scene very promptly. Once we arrive at the scene the team shares the tasks of firstly ascertaining what details can be obtained from the people who were at the scene the earliest. We take photographs of whatever features are available. Sometimes subtle features are lost very quickly. We mark where the vehicle came to rest as well as any skid marks and scrapes on the road and we record all participant's BAC in so far as the number who remain at the site. They tend to have been taken away to hospital before we have the chance to do that.

Most of our data is acquired during the follow up process. We conduct extensive active participant interviews. We record injury detail of all persons involved. We do extensive vehicle examination, recording vehicle damage plus the condition and predisposing factors. We conduct extensive site surveys using tacheometric plane tabling. We record what traffic parameters we can for the site - vehicle speed, restraint wearing frequency, number of occupants, and we obtain the accident history for the sites. All this leads to a process of synthesis and review of all the available information e.g. we try to match the injury detail with the occupant contacts which are often evident in vehicles. We try to get some idea of how design rule type safety measures have or have not been effective. The ultimate objective is to reconstruct the causal chain.

We have been attending accidents since the 1st July, 1986 and to date have attended 35 crashes. They are spread reasonably well throughout the study region. Seven of the crashes have involved fatalities. Eighteen were single vehicle accidents. Eight involved heavy vehicles. Five involved motorcycles. Thirteen of the accidents happened at night.

Overall we are happy with the way the study is progressing. We have had some problems with notification and sometimes over 2 weeks have passed between being notified of accidents so we are working constantly to keep a reasonably high profile with St. Johns Ambulance centres to increase the rate of notification.

The main constraint on the study is the massive follow up time required to chase not only the scene, but to where the vehicles have been taken, follow up of drivers from hospital to home, to do the mapping and so forth. It really adds up to a fairly involved task and we are really flat out keeping up to the planned rate of 2 accidents per week. We would like to get something like 100 in the 12 months of the study period.