



# Motorcycle Notes

No. 3 April 2000

## Loose Surfaces and Motorcycles

This is the third in a series of VicRoads MOTORCYCLE NOTES. The purpose of MOTORCYCLE NOTES is to provide regular practical advice on motorcycle-specific aspects of road design, maintenance and safety for VicRoads, Local Government, Government Agency and Consultant engineers and planners. MOTORCYCLE NOTES should be read in conjunction with: 'Guide to Traffic Engineering Practice Part 15 – Motorcycle Safety'. (GTEP Part 15) Austroads. Sydney 1999.

### The Need

Motorcycles have different needs to cars and trucks, and share with bicycles a sensitivity to loose gravel and other unexpected surface problems. They have only a single wheel front and rear, and their riders are particularly vulnerable to falls due to loss of road adhesion. Loose stones and gravel can therefore be of great concern.

As motorcycles have a similar performance profile to cars, their speeds are higher than bicycles. This magnifies the potential vulnerability of motorcycles.

### Significance of the Issue

The Austroads GTEP Part 15 summarises a range of motorcycle accident circumstances by the type of objects that were hit.

Loose stones are not specifically mentioned in Part 15, although 1991-92 NSW data is included on motorcycle crashes involved with objects on the highway and objects subsequently hit.

However, 16% of the crashes were associated with rocks (loose material) on the roadway, emphasising the vulnerability to small objects on the road surface.

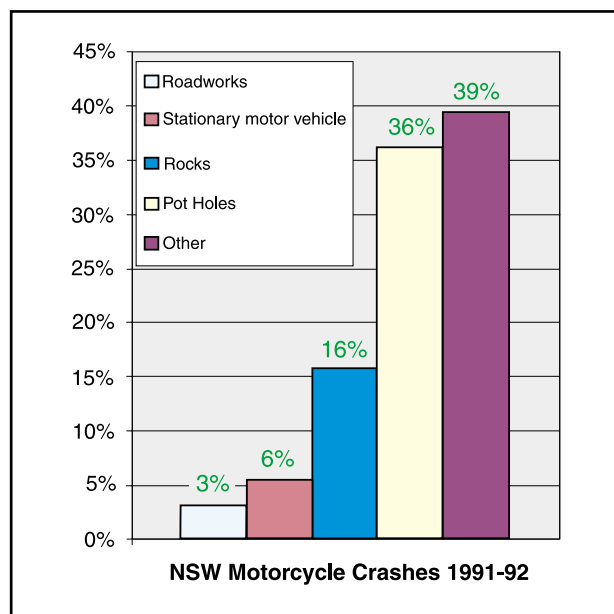
### Victorian Evidence

More recently the Victorian Case Control Study of Motorcycle Crashes looked at the locations where crashes occurred, and found that loose stones were present at 16% of the motorcycle crash sites. From both NSW and Victorian perspectives, loose materials are a significant factor associated with motorcycle crashes.

### What Situations?

Motorcycles are most at risk when loose surfaces are encountered unexpectedly. Where road maintenance or surfacing is under way, signage usually offers due warning.

However, after works are complete there may be substantial areas of deep gravel or build-ups of loose stones left unsigned. These beds may be quite deep, and any enforced deviation from the channels created by car tyres can be hazardous to motorcyclists.



On winding roads, gravel build-up can occur as a result of traffic movements over time. This can lead to increased hazards on bends.

## Practical Situations

There are four different types of situation that can be addressed:

- ☐ Overfilling of cracks being patched and repaired.
- ☐ Clearance of loose gravel or stones after works have been completed.
- ☐ Monitoring loose gravel build-ups, especially on winding roads.
- ☐ Signage of roadworks and areas covered with gravel.

**Overfilling cracks** with grit when being patched is covered in Austroads Pavement Work Tips No 8. "Cracks should be filled to a level just below the surface to prevent pickup and minimising bleeding in subsequent reseals".

Specifications for road works and patching may provide for **clearance of loose gravel after completion**. In such cases the loose materials are swept up shortly after the works have been done.

**Monitoring loose gravel build-ups** is not so easily addressed, and road users have a role in reporting such build-ups. This is a useful item to feed back through the **Road Conditions Reporting Line - Tel (03) 9854 2899**.

Gravel spills from moving trucks is another source of loose gravel outside road construction and repair, and where road users have a major reporting role to play.

VicRoads standards for **roadworks require appropriate signing**, and warnings of loose stones when road sealing is being laid. These signs usually remain until initial compaction has taken place. However, it is important for motorcyclists that the signs remain in place until the loose stones have been removed.

### Information sources:

Haworth, N., Smith, R., Brumen, I and Pronk, N. (1997). *Case-Control Study of Motorcycle Crashes*. Report CR 174. Federal Office of Road Safety, Canberra.

Haworth, N. (1999). *Road Factors in Motorcycle Crashes*. VMAC Workshop: Motorcycling and the Road Environment. VicRoads, Kew June.

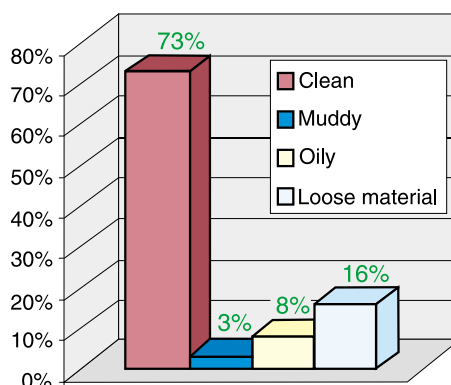
## Who Manages the Roads?

VicRoads is the responsible authority for declared roads (freeways, State highways and tourist roads) and produces performance and contract specifications for its contractors. These are available to Local Government. Contractors may be required to remove loose stones after works have been completed. In most cases Local Government manages main roads as agents of VicRoads, and will normally use VicRoads specifications for such work.

Local Government is the responsible body for local roads. Local Government determines the contracts for such work, and may include a requirement to sweep loose stones after works have been done. Local Government would then also be responsible for monitoring contractor performance to ensure that the stones are removed.

Loose stones can also build up from the traffic impact on roads treated with chip seals or gravel surfaces. Problems with loose gravel are most likely to occur in country areas and on local roads.

**Road surfaces at motorcycle accident sites**



**Victorian Case Control Study of Motorcycle Crashes. Haworth et al (1997)**

## Practical Steps

Loose stones are a real hazard to motorcyclists. It is therefore desirable that specifications for works on all types of roads include loose stone clearance clauses, and that there is positive monitoring of their execution. This should be monitored by VicRoads and Local Government as part of the Quality Assurance process.

Motorcyclists themselves should use the **Road Conditions Reporting Line - Tel (03) 9854 2899** to ensure that loose stone build-ups are identified and corrected.

### For further information, contact:

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