



Photo: Paul Voorham

## Traffic offences and crashes: is there a relation?

**There is a relation between the number of traffic offences that is committed in the Netherlands and the crash involvement. This is one of the findings in a SWOV study into the relation between traffic offences and crashes that has recently been completed.**

International research indicated that the more offences road users commit, the more they are involved in crashes. However, no research had yet been carried out into the relation between offences and crashes in Dutch traffic. SWOV therefore took a first step and investigated whether the Dutch data is sufficiently usable to determine whether a greater number of offences coincides with a disproportionate number and more serious crashes, and to which extent the types of offences or the road user characteristics play a role.

### Study

The SWOV study is important for road safety and enforcement policy, for the Dutch police, and for road safety organizations. Furthermore, it is in keeping with the discussions about, on the one hand, the importance for road safety of intentional offences versus unintentional errors, and the relation between the number and seriousness of offences and road safety, on the

other. The study intended to find an answer to three questions:

1. Will it be possible – technically speaking – to study the relation between traffic offences and crashes by linking the database containing data on offences and the database with data on crashes?
2. Does a higher number of offences go together with a disproportionately large crash involvement?
3. And if so, what is approximately the size of the group of multiple offenders who have a higher than average risk?

To find answers to these questions SWOV analysed two data files: a file containing crash data, made available by the Centre for Transport and Navigation, and files containing data on offences, made available by the Central Fine Collection Agency (CJIB). These files were used to investigate the relation between crash involvement and the number of offences for

the period 2005-2009. It must be noted here that the study had some limitations. In the Netherlands many offences are registered by camera; in camera offences the actual driver is unknown. Therefore, the relation between offences and crashes has been investigated for vehicle registrations and not for individual drivers. Furthermore, the history of offences for vehicles has only been investigated on the basis of the information in CJIB data files, and not through other information in registers owned by the administration of justice or insurance companies; this information is often confidential and difficult to access for research purposes. Thirdly, the severity of the crash was not taken into consideration as these less serious crashes are much more frequent in the statistics. Finally, important information, e.g. the distance travelled per vehicle registration, was not available.

### Findings

The answer that was found to the first, the technical question was that it was indeed possible to further investigate the relation between traffic offences and crash involvement by link-

ing the data file on crashes and the data file on offences.

The second question, whether more offences are related to more crashes, must be answered with 'yes'. The analysis indicates that vehicles that commit more than one offence per year are involved in crashes more frequently than vehicles that commit one offence per year. The study also showed that this growth factor increases exponentially with the offence frequency (the number of offences per year). In other words: at a growing offence frequency the crash involvement of vehicles increasingly deviates from the crash involvement of vehicles with just one offence per year. This exploratory study for example estimates that a group of vehicles with eight offences per year more than another group of vehicles, has a ten times higher crash involvement.

For the third question about the group of multiple offenders with a higher than average risk,

a provisional distinction was made between average offenders and multiple offenders. It was found that the majority (two thirds) of vehicle registrations that were involved in crashes commit no more than two offences per year – an average number of offences. More than six per cent of the vehicle registrations that were involved in crashes was found to commit nine or more offences per year. This while these multiple offenders form less than one half per cent of the entire group of offenders.

### Follow-up studies

This preliminary study shows that it is possible to carry out further research into the relation between offences and crashes in the Netherlands. It is also advisable to further investigate the relation between traffic offence and crashes stratified as much as possible by age and by sex, and by seriousness of the offence. Such knowledge is important to allow distinguishing between different target groups for education policy, enforcement policy and information

policy. Furthermore, it is recommended to perform follow-up research to come to an operational definition of 'multiple offenders' in Dutch traffic by answering the question when someone should be considered to be a multiple offender.

Finally: if the relation that was found between the number of offences and crash involvement also appears to be correct and accurate in follow-up research, this can be used in road safety policy and enforcement policy.

**This study has been described in the following SWOV report:**

[The relation between traffic offences and road crashes.](#) Ch. Goldenbeld, M. Reurings, Y. van Norden & H. Stipdonk (2011). SWOV, Leidschendam