

Proposal for updates to US Model Minimum Uniform Crash Criteria

P. G. Kovacs*

*Ohio Bicycle Federation
527 Haversham Dr, Gahanna, Ohio, USA 43230
email: pkovacs@att.net

Keywords: bicycle crashes, measuring safety data.

ABSTRACT

Bicycles are increasingly being used by citizens of the U.S. for transportation purposes. Cities are encouraging bicycle travel by providing infrastructure to support it, such as roadway improvements to accommodate cyclists, bicycle maps defining safe routes, bicycle parking and bike share programs. The American Association of State Highway and Transportation Officials (AASHTO) and state departments of transportation are designating U.S. and cross-state bike routes to encourage bicycling for longer distances. FHWA is educating and encouraging children to ride bicycles to school through their Safe Routes to School program. Despite these education, engineering and encouragement improvements, many cyclists are afraid to cycle on roadways for fear of being seriously injured or killed in a collision with an automobile. Analyzing bicycle crashes using standard crash report data would help educators, engineers and public safety officials to understand why crashes occur and how to prevent them. The Model Minimum Uniform Crash Criteria (MMUCC) provides standard crash reporting criteria which allows us to compare crash occurrences and safety improvements across the U.S.

Shortcomings exist in the way that bicycle crashes are categorized in the MMUCC. Treating a bicycle as a recreational device rather than a vehicle makes the crash report less useful in determining why these crashes occur. Some of the data elements in the MMUCC use the non-motorist attributes to categorize the crash, vehicle and person data elements. Such a categorization causes a loss of significant information to identify the cause or circumstances of the crash. An update of the MMUCC is in progress by the Governors Highway Safety Association. Several bicycle advocacy organizations submitted a proposal for updates to the crash report criteria to better categorize bicycle crashes. This will enable us to determine the best methods to overcome these problems and improve the safety of our roadways for cyclists.

In order to demonstrate the problems with the existing crash report data, a detailed study of bicycle crashes was undertaken in Columbus, Ohio for the year 2011 to categorize the crashes using the “critical behavior” identified in the Cross 1974 bicycle collision study (motorist right hook, motorist left cross, cyclist wrong way riding, etc). This study was performed by reviewing each crash report which included the police officer’s narrative and drawing of the crash.

An analysis of the crashes was then undertaken using downloaded crash report data available from the Ohio Department of Public Safety. Because of the problems with bicycle crash reporting, it was difficult to determine the crash type using the data in the crash report. Algorithms were used to derive the crash type from the data which was available. For example, a left cross of a cyclist by a motorist was identified by identifying motorists turning left in which the direction of travel of the motorist and cyclist were opposite. A comparison of the study which required analysis of the crash report narratives with analytics gathered from the crash report data will

provide evidence that the crash report elements do not adequately reflect the critical behaviors which cause bicycle crashes.

A summary of the proposal for updates to the MMUCC will be provided. The final version of the MMUCC should be available at the time of the 2017 ICSC, and the changes which will be implemented will be discussed. Hopefully, the changes which we proposed will be incorporated. The two highest priority proposals are that a bicycle is considered a vehicle so that all the vehicular attributes of the crash are reported, and that the manner of collision is reported appropriately for a crash involving a bicycle. Currently, the manner of collision for bicycles is coded as “not a collision between two vehicles in transport”. Lesser priority proposals include new traffic control devices such as bicycle signals, bike boxes and pedestrian beacons, and an additional driver action of opening a car door into overtaking traffic.

REFERENCES

- [1] Kenneth D. Cross, “Identifying Critical Behavior Leading to Collisions between Bicycles and Motor Vehicles”, 1974, <http://www.johnforester.com/Articles/Safety/Cross01.htm>.
- [2] Governors Highway Safety Association, <http://www.ghsa.org/MMUCC>.
- [3] Model Minimum Uniform Crash Criteria, <http://www.mmucc.us/>.