

Motorists turning (left and right) into a cyclist's path combined to be a common adult bicyclist/motor vehicle crash type. Low speeds, however, accounted for the low percentages of fatalities and injuries. The primary errors included the motorist's failure to yield right-of-way; failure to signal a turn, failure to search for and see bicycle traffic; an inability to interpret the cyclist's speed accurately. Cyclist errors in these situations included wrong-way riding and traveling too far to the right side of the roadway, resulting in being inconspicuous.

### ***Severity of Incident***

If there is one message for cyclists to grasp that will reduce their risk while riding in traffic, it is that they should NOT ride facing traffic. Wrong way riding by the cyclist shows up in some aspect of nearly 25% of all crashes in this study, and accounts for a significant proportion of serious or fatal injuries. The next most severe type of crash is that of the motorist overtaking the cyclist. Most typically, this situation occurs on rural roadways after dark with poor lighting with the motorist failing to detect the cyclist.

- ◆ Funded by a grant from the NYS Governor's Traffic Safety Committee.
- ◆ For more information, please refer to: FHWA-RD-96-104 – Bicycle Crash Types: a 1990's Informational Guide.
- ◆ For more information about bicycle safety education materials, contact your local Cornell Cooperative Extension office or Lois Chaplin, Biological and Environmental Engineering Department, 326 Riley Robb Hall, Cornell University, Ithaca, NY 14853. Email: lec4@cornell.edu. Website: [www.bike.cornell.edu](http://www.bike.cornell.edu).

1/02 IB#3



## ***Bicycle - Motor Vehicle Crashes***

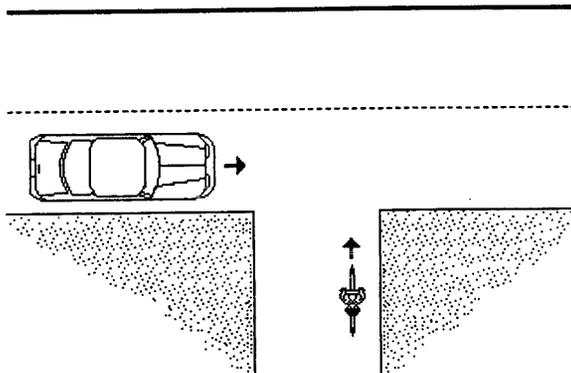
In about half of all bicycle crashes, the bicyclist falls by simply losing control of the bike and falling to the ground. Most serious injuries, however, involve crashes with motor vehicles, even though they account for less than 20% of all bicycle-related crashes.

To better understand bicycle/motor vehicle crashes, in 1997, a National Highway Traffic Administration study applied the basic crash typologies developed in earlier research to a sample of recent crashes. This resulted in a refinement and update of the crash type distributions with particular attention to roadway and locational factors. Three thousand bicycle-motor vehicle crashes were analyzed. To follow is a summary of the most common types of crashes with the percentages assigned to each type.

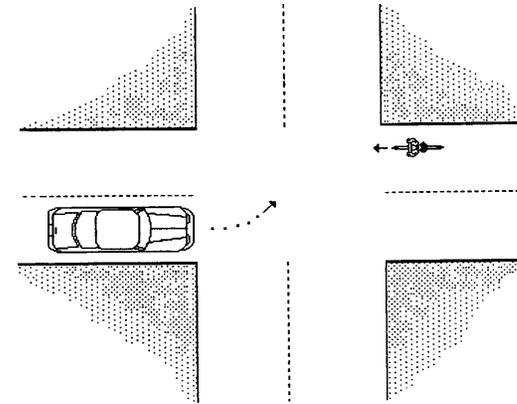
## 1. Crashes Involving Children

Crashes involving children – overwhelming involvement of children under the age of 14 – accounted for 38.7% of all crashes. Note that in these categories, the bicyclist made the primary error and the motorist had insufficient time to adjust and avoid a collision. These bicyclist errors were often the result of inexperience and improper or deficient bicycle training and education. Many crashes occurred in residential neighborhoods, where children with poor bicycle skills have little fear of riding.

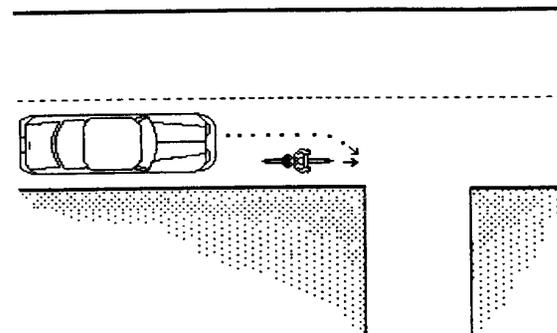
**1a. Ride out at Driveway** (from either residential, commercial, or sidewalk or darting from mid-block) accounted for 12.5% of all crashes. In this situation, the bicyclist rode out of a driveway, side street or parking lot into traffic without scanning, usually in a residential neighborhood. The bicyclist was accustomed to a quiet neighborhood and had a false sense of security. The primary errors included the cyclist's failure to stop, search and yield right of way; the inability of the cyclist to judge closing speeds; and the cyclist entering the road suddenly and from an unexpected location.



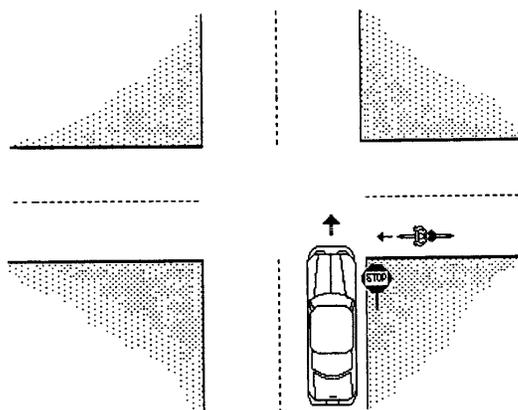
**2d. Motorist Turning Left into the Path of the Oncoming Cyclist** (5.9%). The motorist made a left hand turn into the path of a bicyclist who was usually riding in the opposite direction (either on the street or on the sidewalk). Occurred mostly on multilane, urban roads.



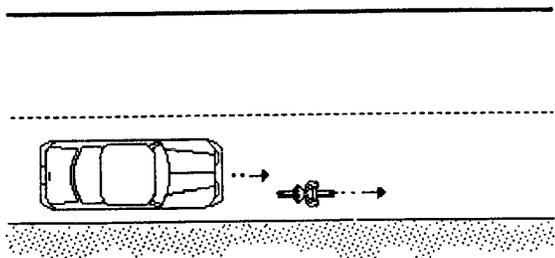
**2e. Motorist Making a Right Turn into the Path of Cyclist**, either same or different direction (4.7%). The bicyclist was usually riding on the right side of the road when the motorist approached from behind and cut off the cyclist.



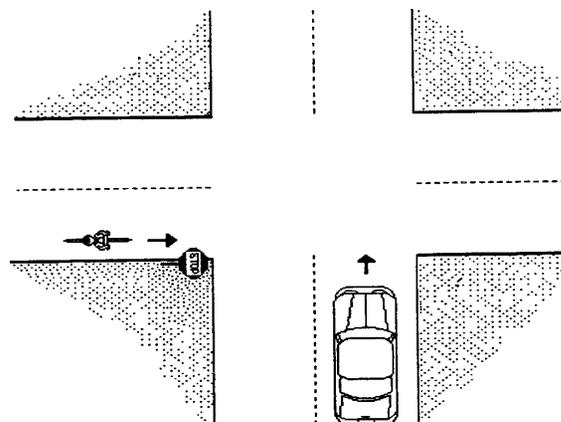
**2b. Drive out at a Stop Sign or Signal** (10.8%). The motorist was facing the traffic control device. Most cases involved cyclists riding the wrong way, facing traffic.



**2c. Motorist Overtaking the Cyclist** (8.6% of all crashes, although accounts for the most severe for the cyclist). The bicyclist was riding legally along the right-hand edge of the roadway and was struck from behind by an over-taking motor vehicle. The primary errors included the bicyclist's decision to travel on a narrow rural-type road after dark with inadequate lighting. Motorist errors included improper passing, failure to see the cyclist and alcohol impairment. In almost all of the over-taking crashes, the bicyclist did not have an active red taillight or rear reflector.



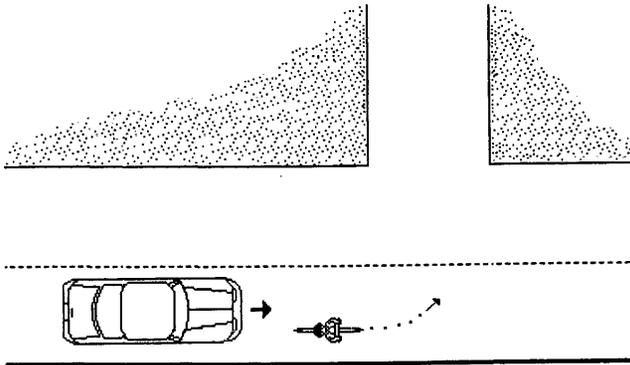
**1b. Ride out at an Intersection** accounted for 16.8%. The bicyclist typically entered a "signed" intersection and collided with a motor vehicle approaching on an uncontrolled leg of the intersection. The bicyclist failed to slow down and search for approaching traffic before entering the intersection. Studies showed that although teenage bicyclists were fully aware of traffic rules, they neglected to stop out of distraction, haste, or they assumed that a lead bicyclist would search for and see oncoming vehicles.



### ***Of Interest***

A drive out from on street parking accounted for 0.3% of all crashes; a cyclist striking a parked car occurred in 1.4% of the cases.

**1c. Unexpected Left Turn** (5.1%). This situation occurred most often while a bicyclist was traveling in the same direction as motor vehicle traffic. Without looking to the rear and without signaling, the bicyclist made a left-hand turn or swerved and collided with an over-taking motor vehicle. The motorist saw the rider well in advance, but did not have time for evasive action. The primary errors included the cyclist's failure to search or scan traffic to the rear; failure to signal; failure to keep watch and recognize road hazards in time to respond appropriately; failure to take the entire lane, if necessary to avoid road hazards (like an open car door); inability of the cyclist to hear the sound of vehicles approaching because of headphone use.

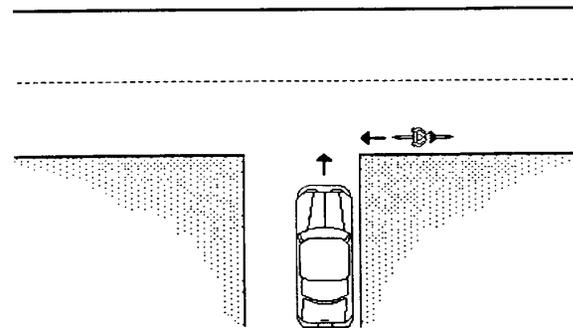


**Of Interest**  
Sidewalk riding appears as a significant factor in approximately 7% of all crashes.

## 2. Crashes Involving Adults

Crashes involving adults tended to occur in more complex traffic environments and were more severe. Motorist error became a more significant factor. The following five groups accounted for 36.9% of the crashes.

**2a. Drive out at Mid-block** (6.9%). Nearly 75% occurred at driveways; almost half involved sidewalk bicycling. This type of crash involved a motorist coming from a driveway or side street, pulling out and colliding with a cyclist and also included the motorist driving out from a side street that had a stop sign or traffic light. The primary errors included the failure of the motorist to search and see bicycle traffic; failure to yield; and failure of the motorist to obey the traffic control device. A bicyclist error in 60% of these situations involved wrong way riding.



**Of Interest**  
A non-roadway crash typically occurs in a parking lot or driveway and accounts for 3.7% of all crashes.