Errata and Additions as of February 2012

Bicycle Collision Investigation by Roman F. Beck

Page	Description
3	In addition to Wilson's book on the physics of modern bicycles, much of the current knowledge about bicycle design and dynamics can be traced to Archibald Sharp's 1896 treatise, "Bicycles & Tricycles." This book was reprinted by Dover Publications in 2003.
60	Although suspension components are generally found are mountain bicycles built within the past 15 or 20 years, attempts at dampening tire-roadway vibration have a rich history. During the late 1800s, when solid tires had not yet been replaced by pneumatic tires, the "spring-frame" was a popular type of safety bicycle that incorporated springs into seat stays and down tubes. However, these bicycles had no suspension on the front forks. During the 1970s, Schwinn and other manufacturers revisited the spring concept with the Stingray-type bicycle, on both the front forks and the rear triangle.
116	An earlier mandatory helmet law was enacted on July 1, 1990 in Victoria, Australia. Victoria has about 4.4 million inhabitants, with about 3 million of them living in the city of Melbourne. This law required all bicyclists to wear helmets. For further details, read the 1994 paper titled "Mandatory bicycle helmet use following a decade of helmet promotion in Victoria, Australia—an evaluation" by Cameron, Vulcan, Finch, and Newstead in Accident Analysis and Prevention Volume 26, Number 3, pages 325-337.
135	An anecdote for the upper limits of maximum velocity on relatively flat ground serves here. In the fourth stage of the 2005 Tour de France, Lance Armstrong and his Discovery Channel teammates won the 41.85-mile (67.35 kilometers) time trial from Tours to Blois at a record average speed of 35.54 miles per hour (57.20 kilometers per hour). The second place Team CSC led by David Zabriskie was only two seconds behind.

135 Perhaps the earliest publication concerning bicycles that addresses the gear ratios for chain-driven bicycles is Archibald Sharp's 1896 treatise, "Bicycles & Tricycles." (page 397 of his text).

143 The labels for Figure 87 are reversed. The left line represents casual acceleration, and the right line represents aggressive acceleration.

144 Two of the labels for Figure 88 are reversed. The left line represents both brakes, the center line represents front brake only, and the right line represents rear brake only.

145 Wilson identified a reduction of 50 to 80% in braking efficiency during wet weather. However, many of these tests were conducted in laboratory conditions. In real-world tests conducted on a rainy day in April 2005 using a high-end full suspension mountain bicycle, the rear brake produced about 78 to 85% of the braking drag factor recorded during the 2003 dry weather tests. The AASHTO reference is on page 37, not on page 47.

146 Perhaps the earliest publication concerning bicycles that addresses the mathematical relationship among lean angle, velocity and path radius is Archibald Sharp's 1896 treatise, "Bicycles & Tricycles." (page 203 of his text).

147 The text "19.5 miles per hour" should be "19.5 kilometers per hour."