

Traffic Signal Intersection Accident Reconstruction

- another book review by Joseph E. Badger

There are any number of accident reconstruction books out there and most cover a wide gamut of situations and are full of equations and messy physics stuff. A few texts, however, target specific types of collisions – such as the wonderful *Trailer Underride: Conspicuity, Human Factors, and Rear Bumpers*.

But now there's a book that targets specific accident locations. I call it Traffic Signal Intersection Accident Reconstruction or TSIAR.

The actual mouthful title is *Accident Reconstruction at Traffic Signal Intersections: A Manual for Law Enforcement Personnel, Accident Reconstruction Professionals, Traffic Engineers, and Forensic Engineers* by Daren E. Marceau, P.E.

The author is a former Raleigh, N.C police officer who is now traffic signals project manager at Kimley-Horn and Associates in Raleigh. That company, according to Fortune magazine is one of its 100 Best Companies to Work For in 2005 and 2006. Says so right at their website:

<http://www.kimley-horn.com/kha/>

In his Introduction, Marceau tells the reader: “This text is **not** intended to be an exhaustive book on the precise details that go into traffic engineering. It **is** intended to serve as a manual for reconstructing traffic accidents that occur at intersections controlled by traffic signals.”

Marceau adds, “This is the first edition of this text. The reconstruction methods and traffic engineering explanations presented here are reliable and time-proven. As any experienced investigator knows, however, more than one way to solve any given case usually exists.”

You may purchase the book without the book.

Let's go over that again.

For \$39.99 you can purchase a CD-ROM version. For \$10 more you can get a printed version of the book. I like having the printed text because I can keep it on a shelf and refer to it without having to crank up the computer.

That said, there are advantages to the CD. For instance, where the book's photographs are black and white, the CD pictures are in color. Any and all text, as well as the photos and diagrams, may be copied to the clipboard and pasted in a report or other document. There are, however, a few places – at least in the Glossary – where you cannot copy an entire paragraph.

The CD version of the book includes the entire text and graphics in PDF form, plus you get version 7.0 of Adobe Acrobat to download if you don't already have it. On the off chance you would like to print the entire book yourself, there are separate PDF files of the front cover and inside cover.

Also, even though the book has an index, there always seems to be something you want to find that isn't listed in the Index or Table of Contents.

Speaking of the Glossary, if you happen to look under “Protected/permitted,” you will see a reference to a “permitted green ball.” *Green ball*, however, is not defined in the Glossary. So it’s handy to be able to search the text to see the term explained on page 26.

Or you may come across this statement: “Without this understanding of the difference between permitted and protected left turns, some crashes occur when drivers think they can turn left in front of oncoming traffic during the display of a circular green signal indication.” You may ask, “What’s a *circular green signal* indication?” Again, that handy search feature is, uh, handy.

Among the text’s 187 pages are seven case studies or as Marceau calls them, “Accident Scenarios.” I don’t know if they are actual cases or made-up situations to illustrate particular points.

Chapter topics include Traffic Engineering Basics; Traffic Signals, Controllers, Phasing, and Design; Traffic Signal Timing; Vehicle and Pedestrian Detection; Signal Preemption; Detailed Case Studies; and of course, Accident Reconstruction at Traffic Signals.

Section 3.14 is about “Pedestrian Signals.” You know, I always thought those little “Pedestrian Buttons” on traffic signal poles were probably not hooked up to anything, but that they were just put there to appease pedestrians into believing that one day the light would change. But the device buttons really are programmed to convey an actuation to the controller for pedestrian and wheelchair subjects to eventually get a green light.

There are some illustrations that may be confusing, such as the ones called “Two-Phase Signal with Multiple Preemption Directions” and “NEMA Controller with Concurrent Phase Combinations.”

If you’re working a signalized intersection collision and you obtain a similar diagram from the highway department, you may just want to have the prosecutor or civil attorney subpoena someone at the highway department who can interpret the diagram for the jury. Some such graphs may be more difficult to describe than explaining where the 30 comes from in “30df.”

You can find out more about *Accident Reconstruction at Traffic Signal Intersections: A Manual for Law Enforcement Personnel, Accident Reconstruction Professionals, Traffic Engineers, and Forensic Engineers* or place an order by contacting Kinetic Energy Press, 4676 Commercial Street SE #177, Salem, Oregon 97302. Phone (503) 540-3244 – FAX (503) 540-3479. Online at <http://www.kineticenergypress.com/>.

Note that the prices mentioned above will increase on January 1, 2007.