

Ralph's Accident Reconstruction Newsletter

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probably be marketed by or through the University of Massachusetts, where he is working on his Ph. D. in the Human Performance Laboratory of the Mechanical and Industrial Engineering Department, he has evaluated over 300 real-world, unstaged collisions to validate the accuracy of his formulas. So far, the driver reactions demonstrated in these real-world collisions have been accurately predicted by his formula for that event, when considering standard deviations, in every case. In other words, the formulas based on over ten thousand tests have now been validated by analysis of over 300 real collisions.

Where does he get these real collisions to study? Many intersections have cameras which operate continuously and, when a sound activates the recorder, the camera records the four or five seconds before and after the sound. Also, some accident reconstructionists provide him with detailed reconstructions of collisions, including downloads from event data recorders. His ongoing exhaustive analysis of those materials continues to demonstrate the accuracy of his equations.

So, what is the correct perception-reaction time for a driver? One and one-half seconds? Maybe; depends on the situation. Now, thanks to his relentless pursuit of useful data and modern computers which provide the means for regression analysis of huge volumes of data, Jeff Muttart has provided us with tools to more accurately assess what a typical perception-response time is for a particular situation and what the range is for various percentiles. For instance, an average PRT for a given situation might be 1.3 seconds, with an 85th percentile range of 0.9 to 1.7 seconds. But site conditions and physical evidence might indicate that a particular driver had four seconds to perceive the hazard before reaction began. To what was that driver attentive? The cell phone? Tuning the radio? Disciplining an unruly child? Reading? Eating? Applying make-up? Does it matter? ☺

I was recently able to use the results and conclusions of his research to put the pieces of a collision puzzle together where no physical evidence remained; this is a valuable resource. Please call me when you need services in the field of accident reconstruction or motor vehicle component failure evaluations.

Ralph Cunningham, Inc.
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