



motosafe

By David Grant

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Being Seen, Passively

We're closer than they think...

Finish this sentence: "Those darn car drivers..." Did you say, "...never see motorcyclists.?"

Why does this occur, and where does this happen on a roadway? Trends from Air Force studies, as well as the Hurt Study, show that about three-fourths of all multi-vehicle motorcycle-crash collisions occur at intersections, with the car, truck or SUV operator being the at-fault party, typically for failing to yield the right-of-way to the motorcycle. Multi-vehicle motorcycle crashes account for 56% of all motorcycle crashes. Studies using a French driving simulator study, conducted to see why this occurs so frequently, indicated that vehicle operators usually spend 0.5 - 0.7 seconds to glance either way, looking for oncoming traffic; four-wheel drivers must recognize the objects in their field of vision, identify the closing speed of those objects, determine when it is safe to turn, then take physical action accordingly. Add in the urban driving environment that includes many, many vehicles, pedestrians, bicyclists, traffic lights, and more ... that's a lot to both see, visually, and to comprehend with the brain. Add in distractions such as other vehicle occupants, radio, cell phones, and a driver's mental instabilities, and this can be a trying time to perform all the tasks in those seven-tenths of a second or less (i). Now consider that these mishaps occur during mostly daylight hours, in clear weather, and we can understand that the solution to getting vehicle drivers to both see and recognize us as motorcyclists is getting more difficult all the time. First, let's review a little bit of human physiology.

The human brain picks out objects that are fast-moving, bright, and small (ii). The brain will take these inputs from the eyes

first, before mentally recognizing a large object; This is one reason why we see the small gray squirrel, perhaps eight inches long, dart across the road, but we often fail to see motorcyclists who are clad in bright orange riding gear, riding with the headlight shining brightly. Now, the brain has to take what it sees, and places it against a reference of an object that the driver has seen before, and then correlate that object with a 'known' distance and speed. Unfortunately, we don't carry a sign in front of us saying, "CAUTION: THIS MOTORCYCLE IS CLOSER THAN YOU THINK!" So, the human brain uses the next best thing from its past experience; a car or truck. Now, let's look at relative size. Try this little experiment; hold your thumb in front of your face, close one eye and cover these words with the thumb:

"BAVARIAN MOTOR WORKS"

Notice that the words on the magazine page are much wider and larger than your thumb, but in order for your thumb to be as large, or larger, as the words on the page, it must be closer to your eyes. Transpose this to the street, the words on your page represents the automobile, and the thumb, the motorcycle and rider. Your

eye represents the oncoming driver. The auto-driver's brain will immediately correlate the size, mostly the width, with the distance away, and speed, of the objects most frequently seen in traffic, such as cars and trucks, and then transposes that information to any new, unfamiliar or



rarely-seen object (you on your motorcycle), and hence, the person operating the oncoming vehicle often believes that we are farther away (*image 1, above*), and that our speed is likely lower than it actually is. A riding tactic found useful (Ouellet, 1990) is to increase your distance away from a possible left turning vehicle using an oblique line, riding slightly away from the oncoming, potentially left-turning



headlights, and this was their answer: Yes and no!

In this test, under controlled and random conditions, no particular headlight configuration was found to be better than the other; flashing, steady, multiple, locations, etc. The researcher did mention that design and alignment of the lights along with the flashing patterns may be beneficial in some circumstances. So, those modulated headlights may work on that one person you meet on the road; you'll just never know who or when, but they may be working in your favor - helping other motorists both see and recognize you as a motorcyclist!

vehicle, (i.e. changing our position within our lane, or changing to a different lane - MotoSafe) which would give you more space and time to react if the driver unfortunately falls prey to this lapse in judgment (image 2, above).

A New Zealand (Wells, et al 2004) study found some correlation between certain strategies, such as having the headlight on, the color of clothing and helmet-color, which reveals an under-representation in crash-related injuries. Now, this is not the end-all for reducing collisions, but the study found that white helmets and any brightly-colored upper garments were substantially under-represented among the mishap-injured riders; this may give us a good clue... perhaps by adopting lighter-colored helmets and riding jackets, we stand a better likelihood of being seen and recognized by that distracted car driver. (Note; there was no way to determine the pre-crash numbers of individual color of clothing and helmets in the rider-population to determine the mishap rate for each individual color.)

What was verified in the Wells study, and was also noted in the Hurt Report, was that riding with the headlight on is the only verifiable strategy proven to increase motorcyclists' visibility. Using the previous human physiology of the human brain and eye, a modulating headlight should better. So NHTSA conducted a study (Binder, et al 2005) of modulating

The major reason for collisions may be that motorists simply fail to recognize motorcycles, and to combat this, the National Association of State Motorcycle Safety Administrators (<http://www.smsa.org/>) has created an online database of material to use as ideas to increase our visibility in traffic, and for use as public-service announcements. The Motorcycle Safety Foundation (<http://www.msfsf-usa.org/>) has developed a complete training kit with video and handouts; "A Common Road - A Motorist Awareness Program." Additionally, NHTSA has designated each May as "National Motorcycle Awareness Month." Yes, it might seem weird to spend your time standing at a booth in a local shopping mall, telling passers-by to "Watch out for motorcycles!", but it could be a most effective method in reducing auto vs. motorcycle collisions. How? Adults are proven to learn new knowledge presented using unique delivery methods - such as an interactive conversation with you, a rider - as opposed to simply having the new material offered to them passively (iii).

Imagine that motorcycle-car collisions are a three-dimensional puzzle - each piece unrelated to the others until placed next to another piece to see if it fits. You already are 'marked' in society when carrying a helmet (Thanks for nothing, Hollywood!); Now, DO something to make a difference, to change that attitude

in the minds of the two-track motorists, and help the motorcyclist you may never meet. Do this by taking a piece of this puzzle, and making it your own! Wear that bright-colored or white helmet, wear that brightly-colored upper garment, be sure to ride with a working headlight, add additional lighting or modulators, and maybe most importantly become educated yourself. Join many of us as we inform the non-motorcycling public that *we are closer than they think we are!*

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- i. Brooks, et al, *A Driving Simulator Methodology for Evaluating Enhanced Motorcycle Conspicuity*, 2005
- ii. Reinhart, R, *Basic Flight Physiology*, 2nd edition, McGraw-Hill, pp95-115
- iii. Powers, S, *Prevention of Motorcycle Conspicuity Accidents*, British Motorcycle Federation, 27 November 2000
- iv. Shanteau, James et al, *Teaching Decision Making Skills to Student Nurses*, Univ. of Illinois Medical Center.

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