Early Hazard Perception Course

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INTRODUCTION

About motorcycle accidents

Types of accidents

Motorcycle accidents can *be* divided in three categories of about the same size:

- No other vehicle involved: slipping, sliding off the road and so on: 29%,
- Collisions with other vehicles: 60% of which
    - Collisions with other vehicles in the same direction of the traffic (30%), of which many rear-end collisions (motorcycle collides on the back of a car, 11%),
    - Collisions with crossing vehicles (30%).

Causes and backgrounds

Let's take a look at the causes of the accidents.

Many researches (accident statistics but also interviews with motorcyclists who have had an accident) show that the main accident backgrounds concerning motorcycle accidents are the following:

- Own visibility
- Own speed
- Own viewing technique/insight/assessment ability.

We will discuss these problems thoroughly. Remember that there are overlaps between the causes: many accidents happen because

- something/someone has not been seen, or and because that the speed was too high (perhaps since someone/something has not been seen!)
- Being aware of this the KNMV started to develop a new training for motorcyclists; far different from the yet existing advanced *training*. This new training was based on behavior and hazard perception!

METHODS

After *initiating* this project we had to realize it should not be just another advanced training.

That safe feeling...

Whether you *like* it or not:

- In general people *underestimate* the chance that they end up in a awkward situation.
- In general people *overestimate* the chance that they may escape from it.

All traffic participants and therefore also all motorcyclists overestimate *themselves*. This overestimation might bring one in dangerous situations, which will be clear. Therefore we must do something about it.

About risks

Risk

A risk is the chance that something goes wrong x the *consequences* of that failure:

For example: the chance on a collision and the pain and damage which are the consequence of that collision. We talk about "real", objective risk.

Risk observation

But you also have the observed risk of the motorcyclist, which is much more important, because that determines what he will do in reality.

If you want to observe, "feel" a certain risk, firstly you have to remark that something might go wrong and secondly you must have an instinctive idea how bad that might end. In a formula:

The question is: "When you observe a risk, do you assess the chances and the consequences correctly?" We already knew that, in general, you underestimate the chance that something will happen to you and also the seriousness of what might happen to you.

Besides that: You overestimate your skill to bring a difficult situation to a safe end!

Risk acceptation

The size of the observed chance x expected consequence determines whether you accept the risk or not. If not, you will reduce your speed for example.

Risk and experience

Both observation and risk assessment by traffic participants, also by motorcyclists, is sometimes not correct:

A faulty risk *observation* and assessment are mainly caused by a lack of *experience.* Something remarkable is going on here: Motorcyclists ride an average of 3700 km yearly. They therefore never acquire enough experience. And because motorcycling is "seasonal work" each winter a motorcyclist loses the little bit of experience he has gained during the summer.

A course Noticing Risks Early must therefore partially compensate the chronic lack of experience that many motorcyclists have!

High risk *acceptation* is caused by the need for exciting things. And….one of the reasons to start motorcycling is the need for (pleasant) excitement.

Risk compensation

The well-known psychologist Piet Vroon once lovely described how he simply dared to ride 230 km/hour with a new sound-proof regulation helmet: It *felt* so safe!

On a former irregular road which has now been provided with beautiful regular asphalt people drive faster. Cars with an ABS system (anti-blockade system) on their brakes are on average hardly less involved in accidents than cars without ABS. They drive faster and they brake later. On

ZOAB (special asphalt that drains off rainwater) people drive on average 10km/hour faster if the weather is wet than they do on old-fashioned asphalt. On ZOAB less accidents take place.

People seem to accept a certain quantity of observed danger and they tend to behave in such a way that they end up on their old level of observed risk. This is one of the main principles of traffic psychology. Remember that this process of risk compensation largely takes place unconsciously. People don't think: Hey I have ABS now so let's start racing! No, the larger risk acceptation takes place automatically.

Why extra skill often doesn't work

Three brains

In a real emergency situation your brains don't function logically and *reasonable* anymore, because the "primitive" part of your brains will take over control. Our brains have grown in the course of evolution. Successively you had:

1. The reptile brain,
2. The mammal brain,
3. The neocortex, the "human brain"

The neocortex is for the higher functions which distinguish the *human* being from the animal like: consciousness, language, norms and values, "inventing" things.

The human being pretends, thanks to his neocortex, to be a reasonable cultivated animal, but in certain situations the more primitive parts of the brain take over. For example: aggression in traffic.

The survival reflex

Another example in which our cultivated and learned human brain has no voice is the *survival reflex.* In great danger that reflex serves to:

- Switch off that neocortex,
- Choose between "fight and flight".

In case there is no space to flight or fight the first shock reaction will remain that you "*freeze*".

If you, a motorcyclist, are suddenly confronted with an obstacle like a car popping up just in front of you, there isn't much to fight or flight. There is a good chance that you freeze, not acting at all, collide with this car, without braking or steering. *The* word "survival reflex" doesn't uphold its reputation at all in such cases!

That survival reflex is often the explanation for the fact that you, in such situations, will not use the emergency maneuver that you *have* perfectly practiced. After all, the "program" for this maneuver is in your neocortex which was laid off by the survival reflex. In the best case the survival reflex leads to very gross reactions like braking too hard and/or only using the front or rear brake.

RESULTS AND DISCUSSION

Since early 2008 this course is in operation by the KNMV and it has caused enthusiastic recommendations of people who have yet participated. We will survey them over the next few years regularly to register how they experience hazardous situations now and how the training has influenced their behavior in these situations.

We have received many request from all over the world to share our knowledge on this subject and we are happy to do so, because we regard it as our common interest to do something about the vulnerable position of motorcyclists worldwide.

CONCLUSIONS

Forget that emergency stop...

The conclusion is that you must not use emergency maneuvers when it is too late yet. You must make sure that you do not end up in such a situation! This can be avoided by noticing the dangers at an early stage *and* react properly at the right time.

We talk about:

- A change of position on the road (a bit to the left, a bit to the right)

And/or

- A change of speed (usually: reduce speed),

And not about:

- Avoiding maneuver

Or

- Emergency stop.

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