

The Importance of Vision

The SYSTEM of Motorcycle Control consists of processing Information, superimposed over four Phases I.E. Position; Speed; Gear; and Acceleration.

We constantly:

- Take;
- Use;
- and Give information to other road users.

When riding a motorcycle most of the Information we receive is visual, therefore riders require full concentration on the road and the riding task. Look upon 'Concentration' and 'Distraction' as opposites: if Distraction is zero, Concentration will be 100%.

Central Vs Peripheral Vision

Central vision is what you see when looking straight ahead.

Peripheral vision is what you see out of the corner of your eye, when looking straight ahead.

Field of View (or Field of Vision) is the maximum area that is visible by the eyes at any given time. The healthy eye has a forward and horizontal field of view of about 180-degrees.

Tunnel Vision

Tunnel Vision is the loss of peripheral vision, while retaining central vision. It is estimated that the human mind can only process 13-15 frames per second of visual information. Consequently, in the hazard rich moving environment in which we ride our bikes, it is estimated that we can only comfortably process information at speeds up to 72 MPH.

While moving above 72mph, the human mind goes into survival mode and sees only the objects right in front of the eyes and as such, fading or tunnelling might be experienced.

I.E. at speed, Peripheral Vision closes down and Tunnel Vision develops and we need to look further ahead, as speed increases.

Scanning

Visual input provides road users with the most 'Information'; however, we tend to concentrate on one part of the visual landscape at a time.

When we perceive danger, we tend to look at it; concentrating on the small picture, to the exclusion of everything else. Advanced Riders are therefore trained to systematically Scan the whole environment, looking for actual and potential hazards; in so doing, their risk of

incident is greatly reduced.

Consider the visual environment as though it were a jigsaw. Now imagine focussing on a small cluster of 5 or 6 joined-up pieces, to the exclusion of the rest. What can be seen is clear, but the overall picture is not.

Scanning different parts of the environment sequentially in turn, is like looking at many little clusters of 5 or 6 joined-up pieces of jigsaw, each of which adds to the overall picture.

The benefit of scanning the environment for visual Information is undeniable.

Early vision, early decision

Riders must look to the far distance and then draw their focus back through the middle distance to the near distance, before checking the mirrors and the speedometer and then repeating this cycle.

Early identification of actual or potential hazards on the road ahead gives more time to anticipate and plan what to do to reduce risk.

Having identified a potential hazard, such as a dog walking off the lead or a child on the pavement, it passes from central to peripheral vision at some point as you approach, allowing the you to literally 'keep an eye on it' until the hazard has passed.

The analogy of a fisherman casting his hook out into the stream and then reeling it back towards him, is similar to how we cast our vision to the far ground, before drawing in our visual focus. Being consciously aware of the different roles played by central and peripheral vision, riders can train themselves to look ahead with central vision, whilst simultaneously tracking potential hazards with peripheral vision.

Mirror discipline

Half the World is behind you, so to see what is happening in 'that half', effective mirror discipline is required.

Mirror checks can be added to the previous discipline of looking from far ground to near ground, by checking both mirrors at the end of the sequence, which then becomes:

- Far ground;
- Middle ground;
- Near ground;
- Mirror check;
- Speed check;
- Repeat.....

Whenever mirror checks are discussed, it should be mentioned that all mirrors have 'blind spots'.

Lifesavers

A Lifesaver, also referred to as a 'blind spot check' is essential for safety before the rider:

- Moves away from stationary;
- Changes direction on the road. E.G. before lane change; or before turning into a new road; or carrying out a slow speed manoeuvre Etc.
- Not only does the blind spot check help the rider 'Take Information', it also 'Gives Information' to other road users.

Where to look

Look where you want to go and go where you look!

This practise is particularly important when cornering on a motorcycle.

It is important to look far enough ahead to see the Limit Point and any outstanding visual links that may help with the riding plan.

On approach to a bend, look deep into the bend by keeping your central vision focussed on the Limit Point, whilst your peripheral vision tracks those potential hazards that lie outside the scope of the central field of view.

Visual Links could include:

- The angle of hedgerows or walls;
- The direction taken by a line of telegraph poles;
- The ridge top of a roof. (I.E. many buildings in the UK are built parallel to the road);
- A ring of lampposts that would signify a roundabout ahead;
- Wheelie bins. If they are neat and tidy, it is likely that the 'Bin Man' has not been, but if they are scattered around, the 'Bin Lorry' is probably on the road ahead;

Peripheral Vision is excellent at identifying movement, for example a vehicle starts emerging from a side road or a ball comes bouncing into the road, quickly followed by a child.

Position of the head

It is important to try and keep your head upright to avoid the natural tendency for it to:

- Dip when braking or entering a bend;
- Rise when accelerating;

If the head deviates from the upright position, it can cause disorientation in the rider.

On entering a bend, the bike will tilt over and lean off the vertical causing the rider's head to sweep through an arc towards the inside of the curve. Riders need to be aware of this and

counter the effect by keeping their head upright and focussing on where they want to go. Experienced Sailors will advise that to cope with seasickness you need to focus your gaze on the horizon. This is because the horizon provides a reference point for the brain, which helps us avoid the disorientation that comes with repeated head movement. The same technique applies when riding a motorcycle through a bend!

Looking without seeing

There is a big difference between 'looking' and 'seeing'.

Many riders 'look' but do not 'see' and some of this could be down to the way the human brain takes snap shots (fixations) interspaced with rapid movements between the snap shots (saccades) when we turn our heads quickly from side to side and it prevents 'blurring'.

It also happens when we read a line of text, the eyes do not move continuously along the line, but instead make short rapid movements (saccades) intermingled with short stops (fixations). In each case, the brain joins the 'snapshots' together and ignores whatever was in between.

This can prove to be extremely dangerous when emerging from a side road, whilst taking **quick** views to the right and left. If an approaching cyclist or car falls within one of the 'rapid movements' between fixations, you may not see them and emerge onto the main road thinking it is clear!

To avoid this possibility, take an extra second when emerging; it could save your life!

Scan the road to left and right from far ground, through middle ground to near ground: this is the best way to **look and see!**

Conversely, be aware that emerging motorists intending to join the main road ahead of the bike, may simply not see you, for the same reason!

Motion Camouflage

From the perspective of a car driver joining a main road at a T-Junction, an approaching motorcycle has a low profile, compared to that of another car.

Assume the rider sees the car and takes a reactive approach to the situation. The rider thinks **'I have the right of way'** and maintains speed without deviation, only to find that the car emerges at the point of no return and there is a catastrophic impact!

Avoid taking the view that you have **'right of way'**; what you have is **'priority'**, but always be mindful that **priority must be given** and if the other road user, for whatever reason, fails to give you priority, the risk of incident is extremely high.

Drivers emerging into the path of motorcyclists at junctions is such a common occurrence that the Police have a name for it: SMIDSY or 'sorry mate, I didn't see you'!

'Motion Camouflage' may explain this behaviour.

When the bike is moving towards the driver in a straight line, its projection against the fixed background is small and because it lacks relative motion against this fixed background, it does not trigger the driver's 'sense of movement' and the rider is effectively not seen.

To reduce the risk of this happening, the rider must take a proactive approach to hazard awareness and risk reduction by applying the SYSTEM of motorcycle control.

The rider can also 'make' themselves more visible by moving the bike in a gentle weave between the centre of the road and the nearside edge, if it is safe to do so, to accentuate their movement against the fixed background. We call this the SMIDSY Weave and if the emerging driver thinks: '**what on Earth is that biker doing?**' it has achieved the aim!

Target Fixation

Target fixation is a phenomenon in humans where they become focused on an object or hazard and inadvertently increase the risk that they will collide with it.

Basically, you go where you look.

This has been the cause of many driving and motorcycle collisions!

Be aware of the effect and avoid the consequences by looking at 'an escape route' seeking the solution and not the problem! We tend to look at the problem when we really need to look for the solution! I.E. aim for the gap!

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