# Bends and cornering.

Cornering is the term used to describe the driving of a vehicle round a corner or bend. It is an important feature of driving and a thorough understanding of the theory is essential if a safe technique is to be mastered

Applying the principals of the 'System of car control' will ensure that the varying conditions of bends and corners encountered in day to day driving are negotiated in maximum safety.

**System of car control principals (I.P.S.G.A).**

I. Information. (Correct assessment of the severity of the bend and road surface).

P. Position. (Correct positioning of the vehicle on the approach and through the bend).

S. Speed. (Correct choice of speed by use of acceleration sense or application of brakes).

G. Gear. (Correct gear for speed).

A. Acceleration. (Correct adjustment of speed when negotiating the bend or corner).

**Safety factor**

By the application of these principles, the following safety factors will be apparent as the vehicle is about to exit the bend or corner.

- It will be on the correct side of the road.
- It will be able to remain there.
- It will be capable of being stopped in the distance the driver can see to be clear.

**Positioning and vision.**

When approaching a bend position the vehicle to maintain the best view but be prepared to <u>sacrifice the position for safety</u> should the information change and to ensure you come into the least conflict with others.

E.g. The appearance of an oncoming vehicle on a left hand bend.

Poor road surface, pedestrians, cyclists etc.; on a right hand bend.

Or any other information that you consider puts your present position unsafe.

Generally, positioning the vehicle towards the centre of the road for left hand bends and to the nearside for right hand bends for view will reveal any potential hazard earlier. These positions will also apply a larger circumference to your course which will achieve a greater degree of vehicle stability.

**Cornering forces.**

A vehicle is most stable when its weight is evenly distributed, its engine is just pulling without increasing road speed, and it is traveling in a straight line. When a vehicle is negotiating a corner three forces reduce tyre grip:

- Steering,
- Accelerating,
- Braking.

Therefore unless the tyres retain sufficient grip on the road surface the driver will be unable to maintain the selected course.

**Other factors affecting cornering.**

- Speed.
- The amount of acceleration or braking that you apply.
- The amount of steering you apply.
- The characteristics of the vehicle. The handling capability of the vehicle itself will vary with the manufactures design and specification.
- The slope across the surface of the road, camber/superelevation.
- The condition of the road surface and the effect that the weather has had on it (grip).
- Road worthiness of the vehicle. A key element is the roadworthiness of your vehicle, in particular the conditions of tyres, tyre pressures, suspension and load.

**Limit point.**

The term limit point is used to identify the furthest point to which you have an uninterrupted view of the road surface.
On a level stretch of road or on a right hand bend it is where the right hand edge of the road appears to meet the left hand edge in the distance.
On a left hand bend it is where the edge of the road meets the central white line, or the centre of the road where there is no white line.
On the approach to a bend the limit point will at first appear to be stationary, then upon entry into the bend the limit point will either remain constant, it will increase, or it will decrease.
Assuming that your speed is constant any changes in the limit point reflect the changes in the curvature of the bend.

The technique is to match your speed to the limit point so that it appears either constant or it increases.
Therefore if the limit point decreases you must reduce speed using ‘acceleration sense’ accordingly.
If the limit point increases you can accelerate but always be aware that it may decrease further round the bend.
Only when you see the bend opening up onto a straight section of road can you accelerate up to your straight line road speed if it is safe to do so.

Careful application of ‘acceleration sense’ will aid stability and ensure a safe and smooth passage through the bend.

The limit point will help you to negotiate the bend by the proper use of I.P.S.G.A. (see above). With the additional caveat of you should always be able to stop within the distance you can see to be clear which means you should be able to stop at least before the limit point is reached
This applies to all roads, not just bends, even if you know the road well, do not drive at a speed that will not allow you to stop within the distance you can see to be clear.