

- ▶ **Have you ever ‘over-cooked’ a corner?**
- ▶ **Did your confidence take a knock as a result?**
- ▶ **Did you work out why it happened?**

Ask yourself this:

- Do you know how to judge the severity of a bend so it doesn't catch you out if it tightens?
- Do you know the ideal positioning of your bike on the approach to a bend?
- Do you know the ideal lines to follow through the bend?
- Can you link one bend seamlessly into another?

Download this free Hugger cornering fact sheet. It is not a substitute for training but it may point you in the right direction to make cornering safer and more enjoyable.



Hugger

Please note: THIS DOWNLOAD IS NOT AIMED AT LEARNER MOTORCYCLISTS, it is intended for post-test riders only and for general advice. Learners must follow their instructor's advice until they have passed their test and gained some experience. These issues can be explained and expanded on by a qualified post test instructor.

Disclaimer – The information contained in this download is based on established information laid down in the police Roadcraft manual and is intended as general advice only. Norfolk County Council accept no responsibility for any damage or injury howsoever caused by following this advice.



GO ROLLER ROLLING

Cornering is very satisfying when you get it right and very dangerous when you get it wrong. A large number of single vehicle bike crashes occur on corners. If you get it wrong, the consequences can be disastrous and mostly down to luck. These types of crashes are nearly always avoidable with the right observation, technique and mindset.

This download is not intended as the definitive guide on the subject nor is it a substitute for training but the intention is to cover some of the major problem areas that are encountered on corners and give you an insight into the benefits of getting some quality training. For a deeper analysis read *Motorcycle Roadcraft – The Police Riders Handbook*, published by TSO available at all good book shops.

Reading the bend

Being able to read the bend is crucial if you are to judge the correct speed for it. The first thing to note is that you need to concentrate and scan widely to take in as much information about the bend as possible before you get there.

Scanning involves moving your view around to observe to the rear, the far distance, to the sides, looking for any number of clues as to where the road might be going, what might be coming towards you and the condition of the road surface ahead of you.

What clues might you be looking for?

- The line of lamp posts
- The line of telegraph poles – these can be misleading as they don't always follow the road
- Hedge or tree lines

Look through gaps in the hedges or trees to get some clues as to where the road may be going, it may also give you advance warning of a large vehicle that you may not want to meet on the bend on a narrow road.



This video gives two simple examples of scanning wider to gain more information.

Limit Point/Vanishing Point

The limit point is the furthest uninterrupted view that you have along the road surface, it is where the nearside and offside verges appear to intersect on the far side of the bend. It is the only 100% reliable method to apply if there are no wider views.



The limit point is the maximum distance that you have to stop in. It is linked in with the Safe Riding Rule which is **always being able to stop on your own side of the road in the distance you can see to be clear.**

If you approach this unfamiliar bend and can still stop between where you are and where the limit point is, you can't go in too fast. If you do, you have either disregarded the stopping distance or what the limit point is doing. The reasons for this might be concentration-based but the experience is never a pleasant one!

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How does it work?

It's very simple, just watch the limit point and track the way that it is moving. If it starts running away from you, the bend is running for you and you can match your speed to the speed that the limit point is moving away (as long as you can still stop in the distance you can see to be clear).

Bends are not always a constant radius so if the limit point slows down or stops moving it is indicating to you that the bend may be tightening so a reduction in speed may be required. As it starts to move away again you can start to follow its pace until it will finally disappear and you are then looking for the next one.



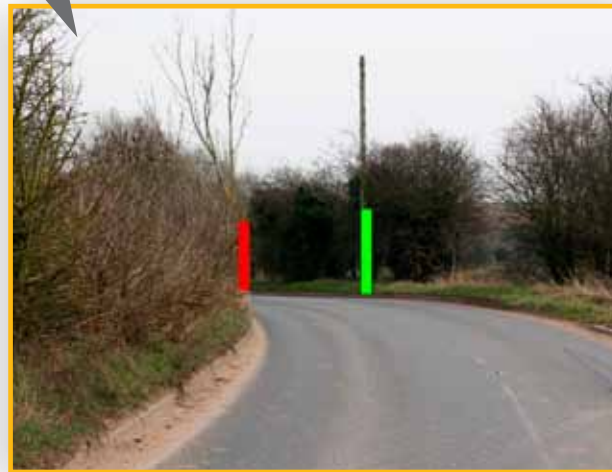
1

Approaching the corner, the limit point starts to move away.



2

The green line on the telegraph pole is used as a reference point to show the movement of the limit point.



3

As the rider advances through the corner the limit point starts to run away.



It's a simple technique but it works, ask a police rider or driver!



This video allows you to watch the limit point moving at full speed and then in slow motion.

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Positioning for the bend

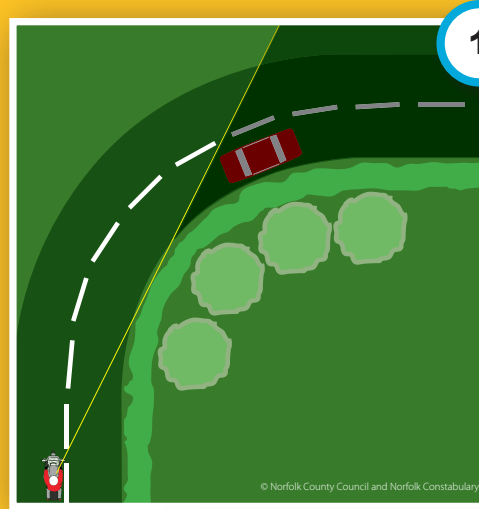
Positioning for the bend is very important and can make a big difference to how far you can see into the bend. It will give you an improved entry point to increase the radius of your path through the bend but safety is the overriding factor.

Right hand bends

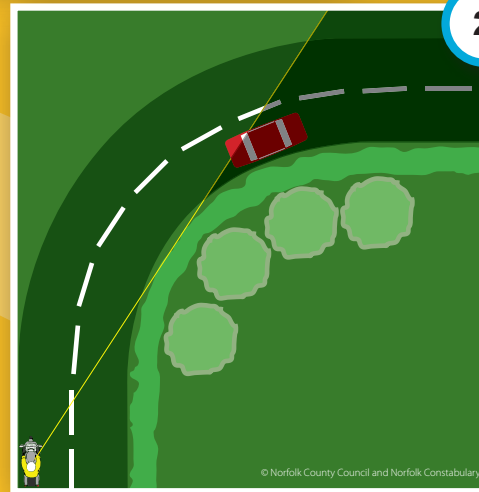
Positioning for right hand bends ideally should be over towards the nearside of the road, allowing you to see the limit point further into the bend.

You do not want to be too far over to allow for surface irregularities, dust, gravel, camber and always remembering to prioritise the hazards.

If you have a nearside junction before the bend with any restriction to visibility at all, you need to give sufficient clearance to that before worrying about the bend.



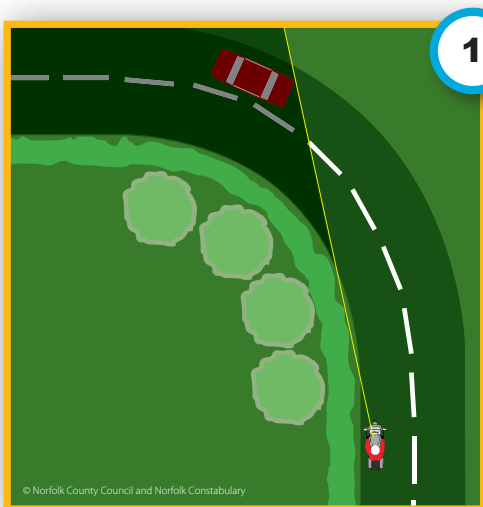
Poor position on the approach to this right hand bend reduces visibility into the bend and places the bike close to oncoming vehicles emerging from the bend.



An alternative position towards the nearside provides an early view of the red car and gives a good safety margin from oncoming traffic.



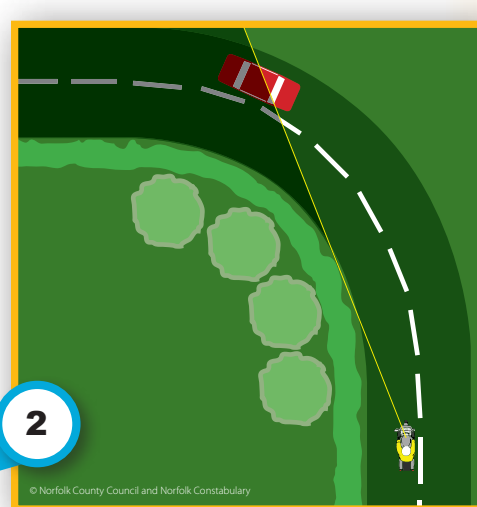
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1

A poor approach position to this left hand bend reduces visibility and decreases the radius of the motorcycle's path.

A line towards the crown of the road gives an improved view into the bend and a correct entry point to reduce the tightness of the bend.



2

You should only go as far towards the crown as visibility determines is safe. If you have to adjust position mid-bend because of oncoming traffic, you should not have been that far out in the first place. Do not venture onto the other side of the road to get a view, half way is more than enough. You're not racing – safety first!

Left hand bends

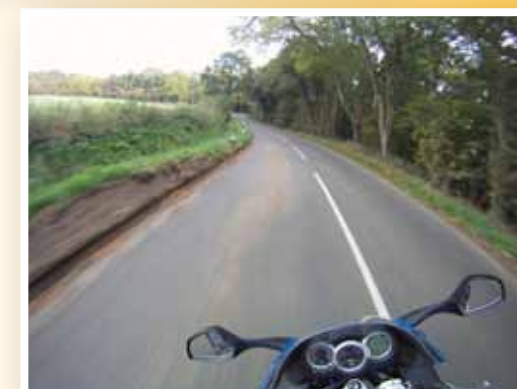
Left hand bends are where many motorcyclists are killed or injured often due to carrying too much speed, panic setting in, braking hard & late, falling off and sliding into oncoming traffic. Another problem is following an apex line through the bend which sends you wide on the exit if you have misjudged the speed, more on this later.

The ideal position for a left hand bend is out towards the centre of the road but always bearing in mind one **crucial safety point**; you should not be any closer to the crown of the road than the visibility allows for safety. If you have to alter position mid bend to avoid an oncoming vehicle then you need to ask whether you should have been there in the first place. Safety first, vision second.

There are safety priorities to consider when deciding where to position your bike.

- Safety
- Stability
- Getting a better view
- Reducing the tightness of the bend

The order of these priorities must always be maintained, for example don't go looking for a better view if safety or stability are to be compromised.

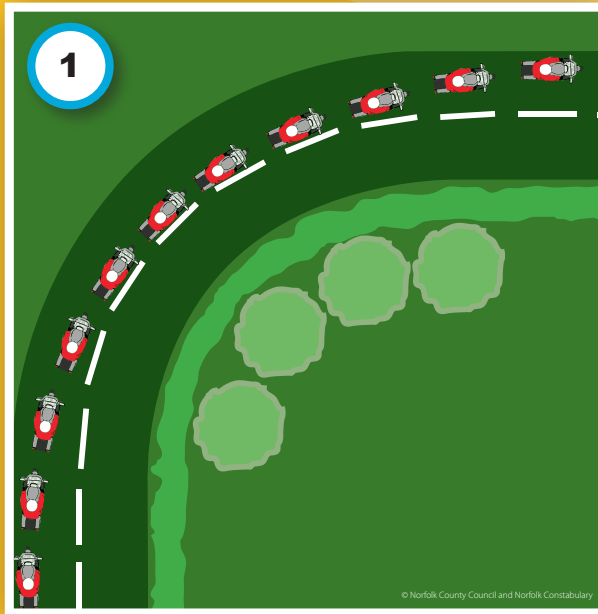


Lines through the bend

The lines that you take through the bend have to take account of the safety previously mentioned but should be safe, smooth and link with what comes next. It's a bit like playing chess, you should be looking several moves ahead not just at the move in front of you. This requires good observation & planning skills. By following a curved path through the bend, the radius of the turn is larger than the radius of the corner, reducing the tightness of the bend.

Right hand bend

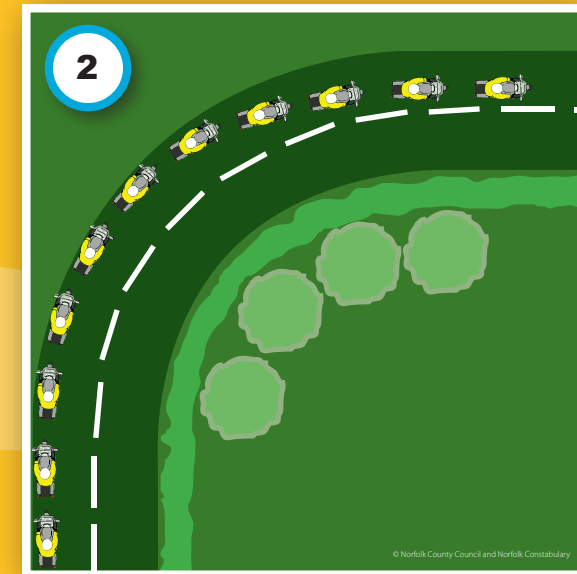
With regard to lines taken, the biggest problem encountered on right hand bends is with those riders that apex the bend.



A bad line to adopt on the road.

This requires them to determine the line they are going to follow at an early stage of the bend and takes no account of a decreasing radius or the possibility of oncoming vehicles, as yet unseen, which they will be very close to. There is also the possibility that the oncoming vehicles may be very close to, or just over the white line which the apex line takes no account of. Inertia will be pushing oncoming vehicles towards the centre line anyway so a little too much speed and they will be encroaching into your road space. The majority of bends have some restriction to visibility which makes the apex line potentially very dangerous on the road. **Keep it on the track!**

An alternative is shown right. By taking up a position on the nearside and following the line deeper into the bend, all options are left open. The line that you need to take through the bend will depend on what the movement of the limit point tells you and the clues it gives you about what is coming next. The illustration here shows a smooth movement across the lane in the absence of any oncoming traffic to line the bike up with a following left hand bend.

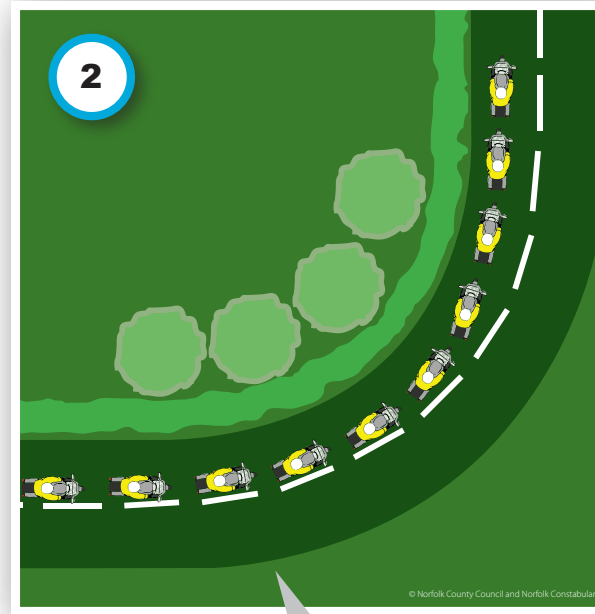
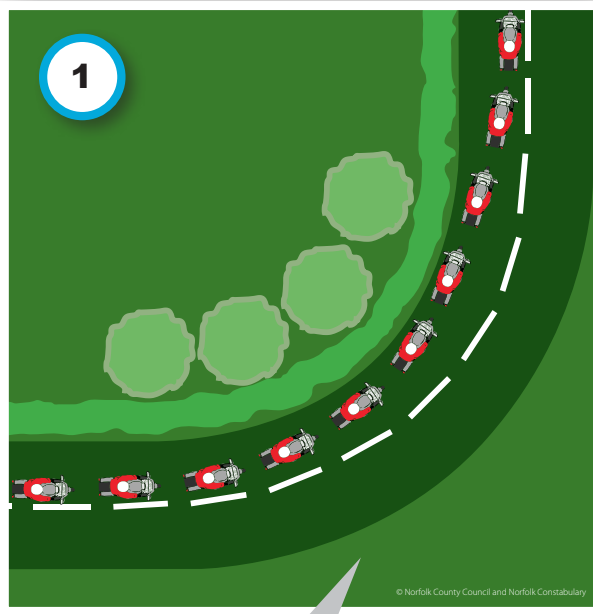


Faced with an oncoming vehicle or a tightening radius the rider can stay on the nearside line and keep all options open.

Left hand bends

This can be a really big problem for the apex-line rider as a misjudgement of the severity and therefore the appropriate speed for the bend can result in a line that is pushing the rider out towards oncoming traffic with predictable results. The apex line requires the rider to determine the line at an early stage and does not allow for early observation of oncoming vehicles or surface hazards that may require an adjustment of line.

An alternative would be to take up a position as close to the centre line as is safe, given the strong possibility of oncoming traffic, the rider can observe the movement of the limit point and once it starts to run away, look to peel away from the line to give a safety buffer from oncoming traffic. If the line requires you to link the left hand bend with a right hander that follows, the exit line will need to be tighter, as in the illustration, than if the road is straight.



The apex line takes no account of the possibility of a tightening radius and tends to head the bike out on a line towards oncoming traffic.

The alternative line goes deeper into the bend until the rider peels away from the line creating a safety buffer away from oncoming traffic.

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Linking The Bends

Having looked at these two bends in isolation we can now see how they link together forming a smooth flowing line where one bend leads seamlessly into the next by the exit point from the first leading straight into the entry point for the second. By planning properly this eliminates scrappy manoeuvres to get the bike on line for the next bend having exited the previous bend in the wrong position.

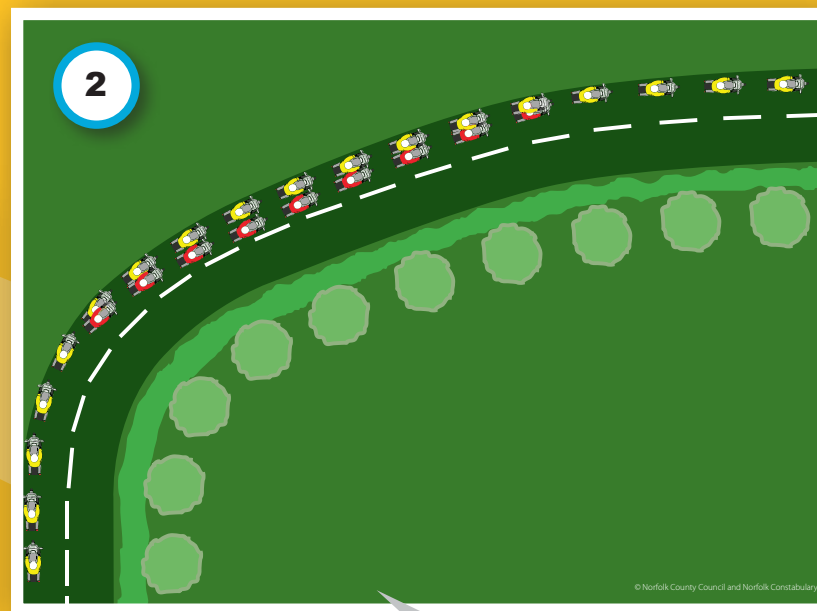
If the presence of a surface hazard or oncoming vehicles requires a different line to be taken from the one illustrated, it's not a problem as long as you have correctly assessed the speed for the bend. What matters is that you get round safely.

If, for example, a right hand bend leads into another right hand bend linked by a straight section, there is no point moving towards the crown only to just go straight back out again to line up the second bend.

The illustration below shows this point.



Showing a smooth line where the exit point from the first bend leads in to the entry point of the next.



There is no point coming away from the line if the bend continues, after a short straight, leading into another right hand bend. You may as well stay on the nearside line.

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This video shows the lines through bends and linking bends

Gear Selection

It has been found during training courses that selecting the wrong gear can be the source of cornering problems for some riders.

- Selecting too low a gear results in a 'nervous' feel as the bike reacts harshly to the slightest movement of the throttle.
- Selecting too high a gear results in the bike 'bogging down' and not responding with smooth power when required.

It's a subjective thing but you should know if you have got it right.

Acceleration

Having got everything else sorted out, the objective is to maintain momentum through the turn. If you enter the bend on a constant throttle the cornering forces will slow the bike down. The objective is to offset this loss of momentum by gentle application of the throttle just enough to maintain the speed, not to increase it or else you may run into tyre grip issues.

Once you are coming up out of the turn, you can then smoothly pick the speed up.

In Summary

In this brief look at cornering we have covered reading the bend, approach position, lines through the bend, linking the bends, safety priorities, gear and acceleration issues. We have only just touched on the subject and we would urge you to get some expert training to expand and enhance on the points covered.

Visit www.think.norfolk.gov.uk for more products and services including Hugger's Challenge, The Police Safe Rider course to the amazing i2i Machine Control Course. You can email us at roadsafety@norfolk.gov.uk to find out more or call **01603 638115**

The main message to take from this sheet is enjoy yourself safely. We'd really like you to be able to come out and do it all again next week!

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