



IAM
DRIVING ROAD SAFETY



South **Essex** Group
of Advanced Motorists

Brake gear overlap

In the absence of any specific hazards that you are having problems with, here is some general advice.

Firstly a lot of people convince themselves that they are performing full separation, when in actual fact they are performing partial overlaps. I'll explain....

Full separation

what should be happening for full separation, is that when you are on the brake your left foot should not be over the clutch. If your left foot goes to the clutch early you will depress it before it is time, you can't help it. If the foot is not there you can't depress it! Visualise the three pedals; the correct time that your foot should go to the clutch is at the time your foot moves from brake pedal to the accelerator, so that they move to the right in unison. If you are doing it correctly it will not feel at all natural to start with, it should feel really exaggerated, so don't put your foot over the clutch until the other foot has left the brake.

The most common cause for people not being able to separate is because they do not make enough time to do it, and the cause of that is insufficient second stage braking. You can't brake 'into the hazard'; you have to brake early while 'approaching it'. The system is a series of appointments & we all know that if you are late for your first appointment it has a knock on effect & you will run out of time.

If we think of a typical tight-ish left hand turn from a major road into a minor road, you will only turn in at say 10mph. At 10mph we are travelling at 15ft per second. You need at least 2 seconds for an unhurried gear change in the system. That is 30ft for the gear change. What you effectively have to do is visualise an imaginary articulated lorry parked between you & the junction right up to the mouth of it. You need to be at the right speed for the turn having completed your braking when you get to the rear of the imaginary articulated lorry. Then as you travel along the length of the imaginary lorry you get your unhurried gear change (with a good "Rev" as the gear lever passes neutral) & be off the clutch with the pedals balanced before entry into the turn. If you've got the timing exactly right, you should be off the clutch & just have time to raise your left hand to your mouth & blow on your fingernails before you take the wheel with your left hand at a [12 O'clock](#) position & pull the steering to turn in.

When you are braking up to a junction, to make room, think articulated lorry!

A common fault is when people do partial separation (but believing they are actually

separating). You shouldn't be partial separating, its full separation or overlap.

Partial separation

If your foot goes to the clutch it will inevitably be depressed too early. Those who suffer from this do the following. As they release the brake pedal, they press the clutch because the foot is hovering over it, in effect the feet will be passing each other at the top end of pedal travel (just starting to press one whilst just finishing with the other). This shouldn't happen. Anyone watching your feet should see clear separation & both feet moving right at the same time as described in full separation.

Full overlap

A full overlap is perfectly acceptable on the grounds of safety. It shouldn't of course be a forced action as a result of a misjudgement, but should instead be part of a pre-planned approach to compromise the system on the grounds of safety. During commentary you would say "I am going to overlap on the grounds of safety because....." NOT " I overlapped because...." (which is historical & never convincing.)

For the full overlap you would extend the braking (so it's slightly less firm in the 2nd stage brakes) & as you are alongside the imaginary articulated lorry whilst still on the brake, you fully depress the clutch & take the required gear (there is no "Rev" on the down change with an overlap. This is not a problem because road speed & engine speed will be so low & slightly slower than if you had separated.) You should then start to gently release the clutch & effectively come off the clutch & brake pedal together at the correct speed just prior to turning in. You should still also be off the brake & clutch, with your foot on the accelerator, BEFORE you turn in.

The typical times that an overlap would be used as part of a pre-planned approach are.

1) Where you wish to turn left or right from a major road into a minor road & it is on a steep downhill gradient. This is because if you were to unhurriedly take your gear over that 2 seconds, the vehicle will roll on a great deal, picking up speed & this will result on your entry speed being too high and you then ending up running wide into the new road & into conflict with others.

2) Where you overlap because of a vehicle close behind so as to meet with their expectations of your braking. Most people turn left steering with one hand & catching a gear mid turn with the other. This is what they will expect you to do also. They expect you to brake all the way up to & into the turn, as they do. They will not expect you to brake firmly an articulated lorry's distance prior to a junction. So we overlap to meet with their expectations in order to not get an adverse reaction from them & so that they don't run into the back of us. We still should be off the brake & clutch before turning in though.

In general if you are considering an overlap, if there is a vehicle behind & it is going to have to brake for you taking the turn, then you can justify the overlap.

3) Where we want to take a junction left & there is a vehicle in our current road waiting to turn right across our path into that junction. Again we overlap to meet with their expectations of braking. If we brake early in these circumstances they may see this as an invitation to turn in ahead of us & pound to a penny they turn in as you come off the brake to get your gear resulting in a hurried re-application of the brakes to avoid a collision.

4) Where we want to take a junction right & there is a vehicle in that junction waiting to pull out & turn right across our path. This again is so that they don't see our braking as an invitation to pull out across our path causing potential danger.

We don't do an overlap where we want to turn right in order to complete the turn across the path of a quick vehicle towards us on the our road. This is because we would then be doing the overlap for speed (progress) NOT for safety. We instead would have to pull up & take 1st gear, wait for the vehicle to pass & then turn in when safe. We can compromise the system for safety as safety is the top priority, but we can't compromise the system for speed, which has a lower priority than the system itself.

Remember the order of priority is

Safety

System

Smoothness

Speed

You can compromise one "S" for an "S" above it in the list, but not for one below it.

Learning brake gear separation.

The first thing you need to do is get used to braking without having your foot near the clutch & to do that try this exercise. Find some *very* quiet roads to practice on & make sure you check your mirrors & that it is clear behind before you do it. At a decent speed come off the drive & use a little acceleration sense before feeding in the gentle brakes & going smoothly to firmer brakes (& I mean firm). The attitude of the car needs to change so that the weight transfers forward. If your car is a petrol car & you are in 3rd you should be able to get comfortably down to about 10-12mph without it stalling. Make sure as you do it your foot is nowhere near the clutch. When you have finished the firm braking & have got down to that speed, gently release the brake pedal (3rd stage braking, don't jump off it !) so that the weight transfers gently back & inertia lets the vehicle roll on.

Count to 2 then press the clutch & take second gear. This is really exaggerating the separation.

Accelerate back up to speed & repeat. Just get used to braking firmly without your foot over the clutch so that you have the confidence to do it.

As it becomes easier to do, you can reduce the time you wait to take the gear.

The hand shouldn't leave the steering wheel to go to the gear lever unless the foot is going to the clutch & vice versa.

The only time other than a planned overlap, that the foot should go to the clutch whilst you are still on the brake, is when you think it may stall & you have to depress the clutch to prevent it. Anytime you do this you should be going to 1st gear OR it's an overlap & not on the grounds of safety either.