

BRAKING IT DOWN

Most of us rarely practise it, yet braking can help us escape no end of nightmare scenarios. Here's how to do it properly

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WHO ARE RAPID TRAINING?

Rapid Training is one of the most respected and innovative advanced riding companies in the world. Its courses combine skills developed by the dozens of Police Class 1 coaches on their staff and from their TT and British Superbike racers. It means Rapid's courses will elevate your road riding and machine control skills to levels you never thought possible. More info at rapidtraining.co.uk



When it comes to stopping quickly, the front brake does all the hard work

YOU COULD ARGUE that of all the machine control skills, braking is the most important. After all, if we get it right, it's the one that stops us hitting the car that's just pulled out. Yet braking gets little attention compared to steering, or vision, or reading the road. So, to rectify that, the final Rapid Training Summer Masterclass is dedicated to the fine art of slowing down.

Why the front?

Modern performance motorcycles come in a variety of shapes and sizes, but one thing is consistent: the front brakes are far, far more powerful than the rear's.

At the front there are usually two discs as big as dinner plates, each one gripped by four brake pistons that are often mounted in a super-rigid radial caliper. And at the rear? One piddly little disc with two pistons and a normal caliper. 🤖

SUMMER RIDING MASTERCLASS: PART 5

▼ Front brake application should be swift, smooth and progressive



There's a good reason for this: bike designers know that because of the way weight is transferred when we brake, the front does almost all the work if we want to stop in the shortest possible distance. When we brake hard, the rear becomes little more than an ornament – so much weight transfers to the front that the rear tyre is skimming the surface and offers minimal grip.

The upshot of this is that to slow down effectively, you need to become expert and confident applying the front brake very hard. The rear brake has its uses – we'll come to those later – but when that car pulls out, it'll be your front brake that prevents an unwelcome intake of hospital food.

How to brake

Many riders are understandably nervous of the front brake because they were brought up on pushbikes with terrible tyres, no suspension and grabby brakes. If you went for the front, you often went down. But modern motorcycles are not like that. Once you learn the correct technique, you can consistently brake incredibly hard on all surfaces and in all weathers (apart from ice and snow) without having moments.

The trick is to apply the front brake smoothly, progressively and quickly. If you grab the brake without loading the tyre (getting some weight transferred on to it), the wheel will lock and the tyre will skid. Do the same thing on a bike with ABS and the system will release the brake to prevent lock-up. In both cases, stopping distance is compromised.

This means you need to time the strength of the application with the loading of the tyre, so as more weight pours on to the front, you apply more brake. This allows you to reduce speed at the fastest possible rate. Top racers do exactly the same thing, but supernaturally fast – from the outside it looks like they jam the brakes on, but the data shows a very swift, smooth progression to full brake pressure. That's what we're aiming for – and it takes a lot of practice.



▼ Practice makes perfect - especially in preparation for when a car might arrive



▲ Early preparation for braking will keep you relaxed - and safeguard crucial anatomy

'Hard braking requires brute core strength and delicate lever control'



Using the rear brake

The priority is to work on your technique with the front. But once you get the hang of it you can introduce the rear, because it does add to the braking effort – especially on big adventure bikes, and even more so if they're loaded with a pillion and luggage. You need to use the rear brake early and moderately though, then smoothly release it as the weight comes off the rear tyre. If you time everything right, neither wheel will lock until the absolute extremes are reached.

Should I rely on ABS?

ABS is a useful safety net if we panic and clumsily grab (or stamp) on the brakes. And it's great to have it in the background when we're practising braking, or if there's ice around, or we don't notice a patch of gravel. That's when it saves lives and fairing plastics.

However, ABS does not replace good braking technique. If you just grab a handful of front brake, the ABS will trigger immediately as the tyre loses traction, then reapply and possibly lose grip again because not enough weight has been transferred. That's inefficient.

▲ Smooth release of the rear brake prevents locking

Brace! Brace! Brace!

The same braking forces that compress your front suspension and mercilessly squish your front tyre into the tarmac also act on you. If you're not prepared, you'll slide forward on the seat until crucial anatomy hits the tank and almost all the weight of your upper body will go through your arms. That's not a recipe for finely judged brake lever control.

The trick is to grip the tank with your thighs and lock your core muscles under *all* braking – you need to make it a habit. That way, when you do have to brake hard, most of the forces will go through the bike, leaving your arms and hands relaxed and able to make fine adjustments to braking and steering.

Be sensitive

One reason that hard braking is such a tricky skill to master is that it requires brute core strength (see above) and delicate lever control. Finesse is not just required at the beginning of braking either – if you release the lever abruptly, the front suspension will bounce back up and destabilise the bike. ☹

'Brakes are essential to ride fast and safely'

▲ You don't need to trail brake to make decent progress on the road

Braking is not a bad thing

Some riders believe that braking is evidence of poor acceleration sense. Riding at a modest speed, that might be the case because we can slow down for corners using engine braking alone. But brakes are essential to ride fast and safely – and there's nothing worse than arriving at a bend having gone down a couple of gears and discovering we're still going too quickly. If we'd started braking 200 metres earlier, we could have modified the brake pressure and arrived at the perfect speed.



Two fingers or four? Cover the lever or not?

There's no rule for either of these questions – it comes down to what you prefer. Among Rapid's coaching staff of police, British Superbike, TT and enduro riders, all braking options are covered.

The important thing is braking technique, which can be achieved with four fingers or two, and covering the brakes or not. Proponents of covering the brake argue that they save braking distance – no reaching for the lever. Those against argue that covering the brakes is more likely to lead to grabbing the brake and destabilising the bike in an emergency.

Actually, both can be right – it depends on your technique. The amount of practice you do is more important than the number of fingers...

PRACTISE, PRACTISE PRACTISE

Where to practise

The only way to get better at braking (or indeed any skill) is to practise it. The safest way is to go to a circuit – there's always a hairpin bend you can charge up to hundreds of times and get a feel of what the brakes are doing. You can do a similar thing on the road but obviously you've got to be careful who's around you. Practising braking in a straight line is far more useful for most of us than starting to trail brake.

✓ Get a feel for finesse

If you push your bike in a car park and pull the lever just hard enough

to feel the pads dragging on the discs, that's 5% braking – learn that feel, because it's where you start and finish your braking.

✓ Put a note in your diary

Practising braking once is better than nothing, but the big gains come from repeated, regular efforts. To get good – and stay good – at hard braking you need to practise every couple of weeks, even if it's only for 20 minutes or so. It'll be an investment in your safety that's just as valuable as a new airbag jacket.

✓ Go off-road

If you get the opportunity to muck about on a trials bike or enduro, you'll learn plenty about grip, braking finesse and the importance of weight transfer – but all at far lower speeds than you would on road or track.

Trail braking

This is where you drag the brakes as you lean into a corner, and it is not essential for road riding. You can ride very fast without it – and for us road riders a decent safety margin is more valuable than gaining the 0.1sec you might make on the way into a corner by trail braking. Slow in, fast out is a safer way to ride on the road – if you want to go faster, it's easier to deploy more of your bike's power on the way out of a corner compared to trail braking on the way in.

But trail braking is a useful skill to have when things go wrong, and it's one reason Rapid runs track-based training days – that's the most sensible place to learn. **R**

THE END

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