



Title:	Learning to race 7.0 Racing other riders – The soft science
Objectives:	Introduce riders to the basic levels of racing against other riders and higher level racing skills.
Goals:	Riders will be sufficiently skilled to begin racing safely against other riders.
Subject:	<ol style="list-style-type: none"> 1. Track walk, getting ready for the day 2. Rain riding 3. Overtaking 4. Situational awareness – where am I and what is going on around me 5. Having fun vs being serious
Procedures	Classroom instruction, one-on-one discussion, group discussion, on-track instruction, video demonstration.
Technique	Discussions with riders, track walks, on-track practice.
Most Common Mistakes	Not preparing sufficiently well, rushing overtakes, becoming afraid of rain riding, losing the fun.

Summary	<p>Track walk – identifying issues and reference points.</p> <p>As introduced in the previous training session, the track-walk is typically a very important part of a motorcycle racers toolbox for educating themselves about the circuit. It is not often seen on GP/WSBK TV race coverage, but early on a race weekend, often on Thursday afternoon, a large number of the riders will be out on the track. They will be walking, running, skating or cycling in order to familiarise themselves with the circuit, to better understand it, to get some exercise, but also most importantly, to start to create a mental and paper map of reference points for the circuit. In NZ we do not see many riders doing this, because many of them have ridden the tracks many times already, because they simply can't be bothered or because they perceive there isn't enough time.</p> <p>However, for young and beginning riders, the track walk is very important in that it is used for looking at the track surface, understanding the corners, visualizing those corners, experiencing corner camber, understanding run off areas, but most importantly, to find reference points and begin to think about racing lines. It is highly recommended that riders take a track walk of a racing circuit at the first possible opportunity they have prior to racing at a circuit. It is also recommended that they take a notebook with a track map to make notes. At the very least, make the track walk work for the rider by identifying the reference points on the circuit that you might need.</p>
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As an example of the importance of this, at every race meeting, the Red Bull MotoGP Rookies Cup riders will all go for a track walk and familiarization, with an experienced rider coach, on the Thursday afternoon prior to the racing weekend. This is treated very seriously, as seriously as the racing itself.

Overtaking – How to get ahead.

Overtaking the rider in front of you is ultimately the key to winning the race, and means you beat the circuit better than they did. In order to win the race, you must beat the racetrack better than the riders in front of you. This means that it is up to each rider to work out how to go around the racetrack faster than the other riders, which means you can beat them. This is fine as long as there is no one else on the track. But when there is someone else, the rider needs to be able to go around them, ie Overtake them.

Safety: The first point to recognize about overtaking is safety. All of the onus is on the overtaking rider to make the overtake safely, and we hope, sportingly. This does not always mean that it will end up being safe as sometimes 'crap' happens and things go wrong. But riders must consider that it is up to them to work out the best way to overtake the rider in front of them. It is not up to the rider in front to anticipate the overtaking rider or to get out of the way of the overtaking rider. At the same time, it is up to the overtaking rider to not force the overtaken rider out of the way or off the track.

Remember also, that in a corner, a bike that falls will tend to head to the outside of the corner. That means that a rider who is behind or inside of another rider, if they fall down and the rider continues on their racing line around the corner, they are unlikely to hit the fallen rider or bike. This is why overtaking on the outside is safer for all concerned and overtaking down the inside increases the possibilities for problems.

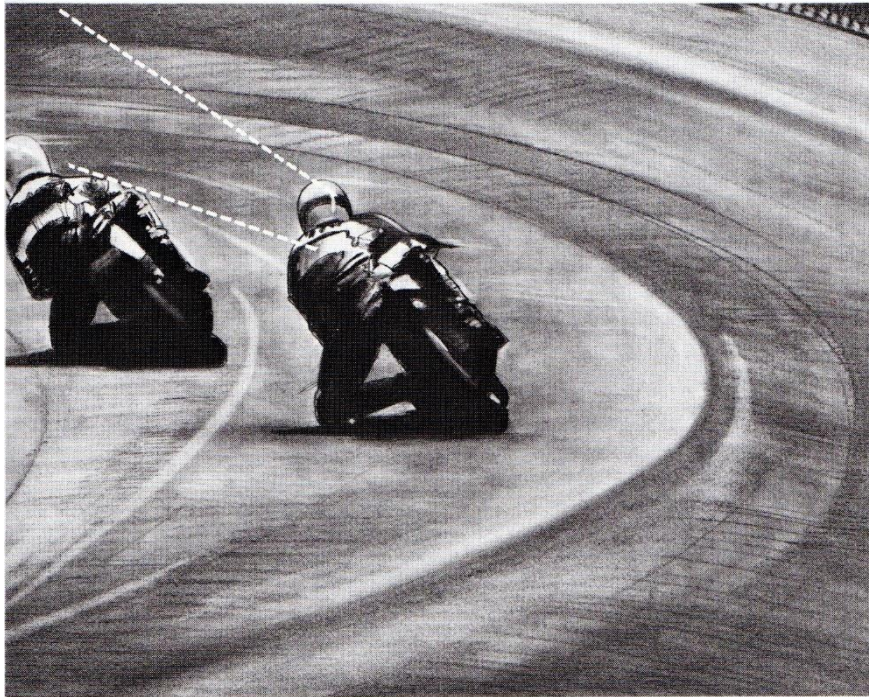
However, the challenge is that most overtaking spots on most circuits are in braking zones and on corner entry and require overtaking down the inside of the rider in front. So in order to overtake effectively, riders need to develop core braking skills.

Young riders need to watch video of the best riders in the world in JuniorGP, Rookies Cup and Moto3. Watch closely the way the riders ride their bikes. Don't just sit there watching the race unfold. Take the time to analyse what the other riders are doing. It may be surprising how close the overtaking is. But it will also become apparent how hard and potentially hazardous some of the overtaking can be. So young riders need to see these things and have the different techniques pointed out to them.

Overtaking: Once the decision has been made to make the overtake, riders should do it decisively. If riders dither halfway in between, they will lose time, lose track position and possibly create a dangerous situation by changing lines or actions partway through the maneuver. The overtaking maneuver should be made as soon as the opportunity presents itself. If the rider waits, the opportunity may never re-present itself and it may never again be possible to overtake the rider in front.

Early-stage riders you should leave plenty of room for the rider they are overtaking because either rider might have limited experience and may take evasive actions and move into each-others or other riders paths. Riders with well-developed skills will find

this less problematic than those with less well-developed skills. However, experienced riders who are more confident can make the overtake as close to the other rider as is needed, which can provide a significant psychological impact along with the rider being able to better maintain the racing line they actually want to use, rather than having to take an extreme 'overtaking line'.



Look where you want to go, not at the rider you are about to pass. The attention spent on him is the amount you need to get by.

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“You go where you look”. Often a following rider will fall off if the rider in front crashes, simply because they ended up looking at the fallen rider and following them into a crash of their own. While early-stage riders may feel upset by seeing a rider crash, it is **VITALLY** important that riders maintain their focus on their own actions and keep focusing on where they want to go! If they watch the rider in front of them and spend too much attention on them, it becomes very difficult to overtake them. Riders then begin to use that rider as a reference point and start to do what they do, and may then never be able to overtake them.

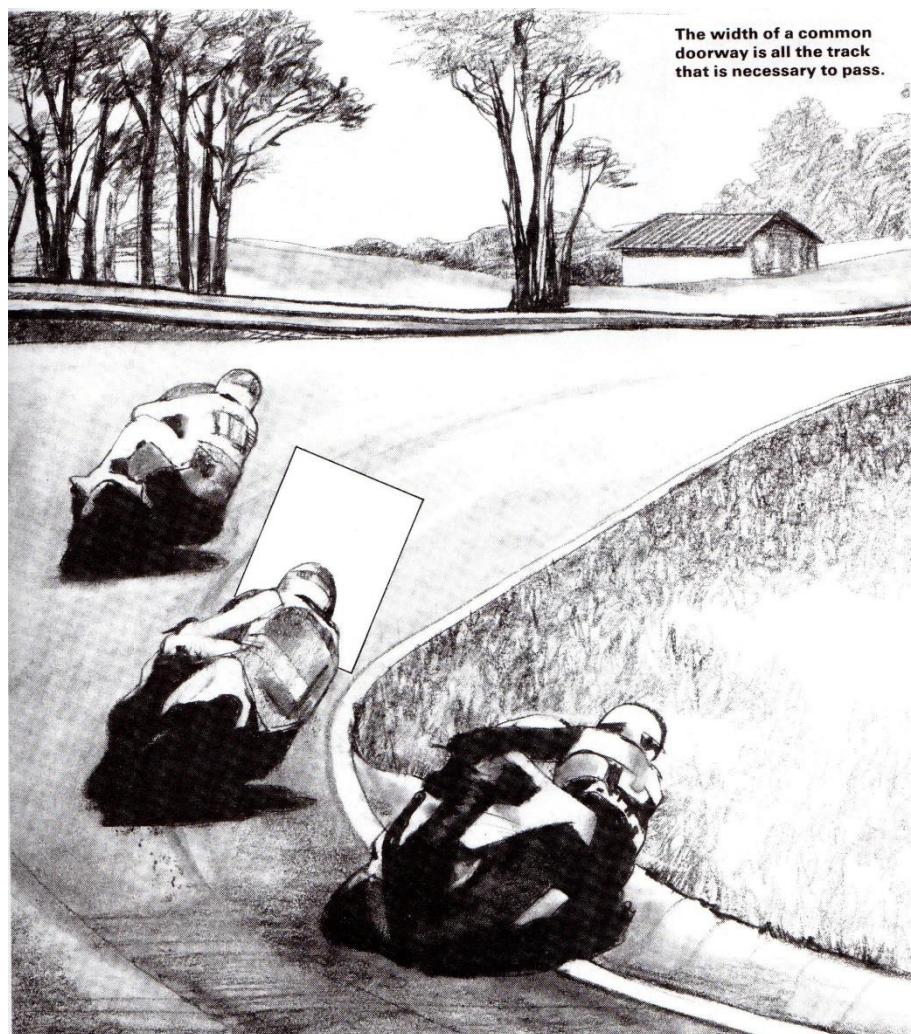
“Treat slower riders like trees in the forest. Consider them to be stationary objects as you go by them”.

How much space do you actually need? The space needed to make an overtake amounts to about the width of an average large door. A rider and bike will pass easily through an average large doorway, so this is about the right size. But of course, if the rider is young and inexperienced, the width of the ‘door’ should be wider than a large door and perhaps more like a double door! But riders who are more experienced, such as Moto3 racing, will be looking for gaps about the width of a door, or even less sometimes.

Braking: The majority of overtaking maneuvers are made under braking, certainly at circuits in New Zealand. However, it is not always necessary to ‘out-brake’ an opponent

by braking later. It is sometimes possible to achieve an overtaking maneuver by braking earlier! A rider might notice that an opponent is racing against them and braking late into corners and running a bit wide. If the rider therefore brakes a bit earlier, or perhaps slightly harder than previous laps, then it might be possible to let the other rider run wide and to then go into the corner on a 'tighter' line, and go underneath that rider and exit faster inside the other rider.

Faking it: It is possible to make a fake move to trick another rider into making a move that allows a rider to overtake. Mostly this is done under braking when you can pretend to sit-up and brake, but in fact keep going at speed. If the racing is close, it is likely that the other rider will brake also, perhaps a fraction later. But if the rider is then prepared to brake even later, the sit-up fake can be successful, but not very often. It is probably possible to use it once or maybe twice in a race, but unlikely more often than that. Other fakes can include: a fake start which can cause the riders next to you to go before the light changes; deliberately turning tighter or less tight than on a previous lap; standing the bike up in mid-corner.





This idea of “Faking it” leads into the idea of “Reading Passing Signals”. As riders gain experience, they will begin to be able to read the riders in front of them to know where they will be going and when. This will allow the rider to set themselves up with a solution to getting past them. This sounds great of course, until we realise that theoretically all the other riders are doing the same thing!

Re-overtaking immediately: If it is at all possible, it is important that if a rider is overtaken, that they try their best to overtake immediately the other rider. Overtaking and of course, being overtaken, always has a bit of a psychological effect on performance, advantageous or deleterious. When a rider overtakes, they tend to go a bit faster, and when overtaken they tend to slow down a bit. So, the mark of a champion racer is to not slow down when overtaken, but instead to speed up a bit and try to re-overtake immediately.

Situational awareness: Situational awareness is vitally important and contributes strongly to the riders’ short-term plan for the corner, for the lap, for the race. Riders must develop the skill of Situational awareness. This is where someone is always looking either directly or via their hearing, peripheral vision, smell, feelings, around themselves to understand what is happening around them. In racing this will include understanding where the flag points are, what flags are being waved, what bikes and riders are around you, when a rider is trying to make an overtake, when someone has crashed near you, these sorts of things.

Remember, if someone does crash in front of the rider, they must continue around the track. It is the responsibility of the race officials to deal with the crashed rider. The rider must not stop on the circuit to assist, or anything else.

It is important to develop this skill of situational awareness very early on in a career so that if or when an overtake or a hazard occurs the rider will have a plan and will know how to avoid or to exploit them.

Crashing: (This is a revision of earlier training session) If the rider themselves is that rider that crashes or falls down, there are certain things they must be taught to do:

- 1) Stop sliding or tumbling – do not try to get to feet before they have stopped moving,
- 2) Determine if they are injured or not – do a quick mental check about what hurts,
- 3) Determine where they are – have a rapid look around to see where they are and what is happening around them,
- 4) Move rapidly to safety – this is dependent upon the path being clear and the rider being uninjured. If the rider is in the middle of the track and other riders are still approaching, they MUST stay where they are. It is easier to avoid a stationary object than one that tries to get out of the way and the approaching rider has no idea which way they are going to go. If the fallen rider stays put, they stand a much better chance of being avoided. The rider should then, if uninjured, move quickly to a safe space, such as marshal point, wall or other space.
- 5) Rider must leave their bike where it is, until directed to do otherwise by race officials.
- 6) Riders must stay in the safe space until directed otherwise by race officials.

Rain riding – Smooth but confident is the name of the game

Racing in the rain is different to racing in the dry. But it is more about confidence in the riders' basic skills, than anything else. If the rider has learned the basic skills well, then they will be able to ride smoothly while riding fast. If the rider is therefore confident in their abilities, then they will be able to use those abilities smoothly and will be able to race confidently in the rain and on a wet track.

The rider needs to learn and to understand that while it is not possible to race the same in the wet as in the dry, a confident rain racer will normally be only between 8-15% slower in the rain as they would be in the dry. The key skills are confidence and smoothness. It is even possible to maintain good pace in the wet on slick tyres, if the rider is smooth and confident.

There are four key aspects to racing well in the rain:

- 1) **Suspension:** Clearly, on KayoMiniGP bikes and beginner bikes, this is not something that can be changed much if at all, so is not something that beginner racers need to worry about. But as they become more experienced and move to more advanced bikes, this will be something that needs to be learned. Typically, the suspension will be “softened up” or “sped up” which means that damping settings will be reduced to make the suspension move more quickly to provide more feedback to the rider. Often the spring preload will also be reduced and even the spring rate can be reduced. This is all done because racing speeds in the rain are slower, so not so much force is being put into the suspension, the suspension does not move as much, or as rapidly and therefore does not require quite as much speed control. This will also provide the rider with more feel and more grip. Backing off the damping and spring force (or at least the spring pre-load) offers these things.
- 2) **Tyres:** As riders become more experienced and move to larger racing classes, they will be exposed to racing wet weather tyres, or ‘rains’. Beginner bikes will tend to use a treaded road tyre which will be suitable for rain riding when the rain is not so heavy. Proper racing rain tyres have soft compound rubber and heavy tread patterns, to disperse the water and grip the wet track surface. It is important for riders to use rain tyres properly by riding smoothly. If this is done, riders will be astounded at how fast they can race using proper racing rain tyres.
- 3) **Smooth riding:** It is vital that in the rain, the rider rides the bike much more smoothly than they would, or need to, in the dry. Making braking actions much smoother and more progressive, direction changes smoother and less severe, throttle application smoother and body movements smoother and less extreme. Some of these changes might be very subtle, but they will all make a big difference to the outcome. The smoother the rider transitions from upright to leaned over the easier it will be for the tyres to maintain grip with the track surface. Riders who fall down in the rain tend to do so because they have braked too quickly or too hard and locked the front tyre, or they have tried to lean too hard or have leaned over too roughly or have applied the throttle too quickly and lose rear grip. If riders watch other riders racing in the rain, it



is sometimes possible to see these problems before they happen. All of these things can be solved by being smooth and understanding why it is important to be smooth.

- 4) **Confidence:** It is vital for the rider to remind themselves that they can do it. Remind themselves that when done smoothly and well, based on their strong basic skill base, the bike will stop and it will go around the corner, and it will come out of the corner. The more experience the rider gets by riding in the wet, the more they will be able to focus on successful rain racing and not worrying about rain riding.

Having fun vs being serious: It is vital that we maintain an environment where young riders can continue to have fun, while staying safe. Making sure that riders leave room when overtaking is an important part of this. If young riders get scared, or are hit by other riders and hurt or injured, the fun part of racing will disappear very quickly. The fun part seems to be a little more resilient if riders fall down due to their own mistakes, but being hit by other riders hurts that resilience. But it is clear that making overtakes is one of the most fun parts of the racing experience for young riders. So it is vitally important for them all to learn how to do it safely.

At young ages it is not important for them to be very serious about their approach, but rather to maintain the fun. So, it becomes the trainers' role to find methods to impart the skills, technique and safety lessons to the riders, while maintaining the fun aspects of the sport. Exercises such as 'Slow bike races', chocolate fish prizes for the most 'Figure of 8's without losing form' and such like will help to achieve this.



Assessment Sheet
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Racing other riders - The soft science

Item	Pass/Fail	Comment
Track walk and note taking		
Rain riding - skill development		
Overtaking		
Situational awareness		
Having fun!		

Overall Comments:

Guardian/Student Signature:

Trainer Signature:

Date: