

SMC Gravel Course

Appendix Advice & Guidelines v 3





SMC Sweden's Motorcyclists

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Foreword

This course in its current form is a result of gravel courses conducted under SMC Uppsala's direction since 2008. Exercises and curriculum are based on SMC Västernorrland and SMC Stockholm's previous gravel courses together with exercises developed by SMC over the years.

The majority of all motorcycle manufacturers have at least one adventure or off-road motorcycle in their product range. Additionally, there are a few niche manufacturers that are targeting the off-road market. It is also the segment that has grown the most during the last 10 years. Every second motorcycle sold in recent years has been some kind of off-road motorcycle, that is why the interest in gravel courses has increased significantly.

There are several gravel and off-road courses on the market. Some offer courses as part of their business and marketing efforts, some are focusing on adventure travel around the world and some focusing on rally and enduro.

SMC's gravel courses target all motorcyclists with all types of motorcycles. The courses focus on road safety and our goal is to create safe and secure motorcycle riders on our gravel roads.

90% of all roads in the world are gravel roads and we have about 30,000 miles of gravel road in Sweden. Limiting yourself to only ride on paved roads means missing large parts of our most beautiful, most natural and most fun road network.

Since September 2019, the gravel course concept has been certified with DVR just like the other courses that run under SMC's Advice and Guidelines version 3. The certification means that the concept and book should be followed to maintain our quality and standard.

Anders Ljungqvist
SMC Uppsala.

Revisions:

Date	By whom	What is changed	version
2017-05-10	Anders Ljungkvist	New Advice and guidelines Gravel Course	1.0
2019-11-28	Niklas L, Anders L	Adjustments, extra exercises, new chapter ABS	1.1



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Road safety, our goal with the course.

Common to all participants who apply to SMC's gravel courses is that they want to learn how to handle their motorcycle on gravel. Many have gone through their driving license-training for motorcycle without riding on gravel roads or just driven very limited on gravel during the training, this being without any theoretical information about what distinguishes gravel from paved road.

Many participants who joins the SMC gravel course rides standard road motorcycles and want to remove the fear of gravel surfaces and be able to feel safe on the gravel roads on their way to the summer cottage, past a roadwork or do not want to turn when the paved road turns into gravel road.

It may also be participants with adventure motorcycles that has a lot of experience and wants to learn more because they notice that with this their driving can be improved.

We've had participants who rides fast and fearless on gravel roads but with very limited control of what they're actually doing. They therefore have to put a lot of energy and concentration into actually staying upright, it is usually more luck than skill that they have managed to stay on the road.

What unites these participants is that they lack riding skills or need to improve them.

You need more skills to ride on gravel road compared to paved road because the surface changes all the time, the roads are often narrow with tighter curves, obscured visibility and all sorts of obstacles. The riders need to learn how to manage this environment and gain insight and understanding of how the motorcycle behave and works on gravel.

The exercises that are included in the courses aim to increase participants technical riding knowledge, with focus on safety thinking. With safety and knowledge, fear and risk of panic reactions decreases, and the consequence is safer motorcycle riders. With increased driving skills, you don't have to focus as much on riding the motorcycle, instead you put all your efforts into planning the ride and making relevant assessments.

The course curriculum is based on training minor parts-elements to later combine these elements at the end of the course day in final exercises. The practice sessions are designed to be carried out at low and moderate speed. There is also a safety mindset in the training elements before embarking on gravel roads at a higher speed.

Gravel, the shifting surface

When we say "gravel road" we basically mean all surfaces that are not paved with asphalt or concrete. Gravel can be hard-packed without anything loose up on. It can be mud, sand, rough blast stones, grass and moss to name a few. It can also be a mixture of multiple surfaces at the same time.

All these surfaces have different characteristics and our motorcycles will behave differently on these surfaces. It is often the case that the lower layer that we do not see determines how the motorcycle behaves. A layer of blast stone at the top gives completely different conditions to run on if it is on top of a hard or loose lower layer.

What happens to the lower surface when it rains is also a factor to take into account. Think about hard-packed dry mud. What if it rains significantly, will it become more or less slippery? Clue – it will be extremely slippery. Gravel roads that have become soaked after a period of rain often offer a better grip, depending on tyre selection.

The most important thing is to get participants to be active in constantly reading the surface and feeling how the motorcycle behaves and adjusting the speed and riding method accordingly.

Riding on gravel with a Motorcycle equipped with ABS

The ABS brake has been on motorcycles since late 1988 and all motorcycles over 125 cc sold as of 2016 should be equipped with ABS.

The previous ABS systems were large and heavy (approx. 11 kg) but above all slow in their function, which created a myth that a skilled rider could easily brake better than an ABS system. This was also true but it required a skilled and trained rider and given the normal rider's overconfidence in himself, **in reality very few were actually really able to slow down better than ABS.**

If we look at modern systems, the development has gone forward by leaps and bounds. Today's system weighs very little and relies on much faster sensors that measure 2000 times per second with electrically controlled valves that can regulate pressure more than 15 times per second. There is no living person who is even close to adjusting a brake handle that fast but the myth that many riders can outrun an ABS system unfortunately still lives on.

Since the valves are electrically controlled, they can take in both pressure and speed, which means that a modern ABS system can be programmed for different situations and different surfaces. Consequently, the ABS becomes a very good tool on gravel and other loose surfaces as this requires a different reaction when braking compared to paved road.

In addition, when you can integrate the ABS system into an engine control computer (ECU), the ABS sensors can also be used for other things, such as Traction Control (anti-spin). If you also plug a gyro (IMU) that feels inclination in all directions (Curve-ABS), you can change brake pressure and traction control to get a motorcycle that is safe in all situations. In other words, no matter how much the rider increases speed or using the brakes, the system prevents the motorcycle from spinning, locking the wheels or lift the wheels in an unwanted way.

ABS was previously a tool to prevent the rider from locking brakes and sliding in situations of panic, today it is a system to help the rider in all situations.

We have long lived under the premise that a real off road or gravel motorcycle must have ABS that can be turned off and that it should be mandatory to turn it off during serious gravel riding. **This is NOT the case anymore.**

With modern, programmable systems, we usually have an "Off-road mode" that provides a lower power development and a controlled rear-wheel spin when accelerating. Off-road mode also reprograms the ABS on the front wheel so that it brakes as efficiently as possible on loose surfaces and adapts to the type of tyre mounted.

The ABS in off road mode usually allows the rear wheel to be locked on certain surfaces with “adventure tyres” but also with street tyres to get stronger braking. The locked rear wheel then builds an embankment of loose gravel in front of the tyre that contributes to the improved braking power. The lockable rear wheel also allows the rider to steer the motorcycle with the rear brake which is an efficient and common technique for riding on gravel roads.

During tests conducted by SMC’s gravel instructors, we have compared braking on different types of gravel surfaces, with and without ABS off-road mode compared to completely suspended ABS. In any situation, with all kinds of tires, including street tyres, we were able to break more efficiently with programmable ABS in off-road mode, by several meters, than with ABS turned off. SMC will carry out more tests in the near future and the results will be presented in the media.

ABS saves lives and should therefore be used. However, ABS behaves differently depending on which motorcycle you have.

The most important thing is to get to know how your own motorcycle behaves, both on gravel and on paved roads. You have to learn how the ABS works and adapt the riding accordingly. If you program your ABS, you should change the settings depending on which kind of road you ride on.

Some of our exercises are difficult to conduct without turning off ABS. As an instructor, you also have to be prepared to deal with these issues when they come up. Just a few years ago, only a handful of the participants had ABS on their motorcycles. Today, almost everyone has it and there are a lot of models that do not allow the ABS to be turned off so adjustment of the exercises is advisable.

It is good to know that the ABS function uses a lot of power. If participants run many brake exercises with the ABS turned on, it can occasionally drain the battery and the motorcycle may need start-up help. Make sure that the participants pay attention to it and take time to charge the battery and cool down the brakes. One tip is that one of the instructors brings starting cables with them to the course.

A good demonstration is to show the parallel-brake exercise. Two motorcycle models, similar to each other, one with ABS and one without ABS are running next to each other at about 50 km/h and brakes maximum at any given point. There’s a lot that comes into play in the outcome such as age of motorcycle, type of ABS, type of tyres and how experienced the riders are. Let participants think and discuss the different aspects.

The conclusion is that in a panic situation there are very few, if even any rider, that outbrakes the ABS-systems.

ABS save lives.

What to consider on gravel roads

Here we address several points that are different from riding on gravel roads in rural areas compared to paved road urban traffic. Start a discussion in the group. Someone might come up with more things that are different or maybe someone have own experiences to share.

- Narrow roads. What is the risk?
- How to act when meeting wide vehicles that take all the road?
- Obscure curves. The importance of not taking “shortcuts” in the curves.
- Fewer traffic signs warning of dangers.
- Other warning indications?
- New timber piles and/or freshly sawn timber. There may be timber trucks or logging machines behind the next curve?
- The road is processed. Scraped or planed - work vehicles on the road?
- Horse tracks – you might meet or catch up with horse riders. What do you do? Are there horse people among the participants who can tell?
- Dusk and dawn. Wild animal on the move.
- Hunting times – keep track of the calendar. Hunters and dogs might be on move in the woods. Wildness can be stressed and move more than usual in the daytime.
- Garbage cans and mailboxes at the side of the road - might be an exit from a summer house or permanent residence. You're more likely to meet someone.

Try to get more examples in the conversation with the participants.

The philosophy and idea of the course

The layout of SMC's gravel course is that most exercises should be carried out on a gravel parking. The larger site you use, the easier it is to plan and execute the exercises.

On a gravel parking it is easy for instructors to have an overview of the participants during the implementation of the exercises. It is also easy to gather participants, hold briefings and share instructions in groups.

Gravel course Level 3 is mixed on gravel parking, gravelroads and permitted terrain, such as military areas and motorcycle courses, depending on the exercises and moments chosen by the course leader.

Introduction and target group

The course is divided into four different levels, Level 1L, Level 1, Level 2, and Level 3 depending on previously completed SMC courses and the participant's personal approach and experience with riding on gravel roads.

Each level is a one-day course. A course day with Level 1 can be standalone while Level 1-2 runs as a two-day course over a weekend.

To attend Level 2, we recommend that the participants have completed Level 1. The exercises in level 2 are a continuation based on Level 1.

Level 1L. Basic course where "L" stands for "light".

1L targets all motorcyclists, who want to be safer when riding on gravel roads. Especially for those who find it difficult when roadwork without asphalt appears or gravel road to the beach or to the summer cottage. It is for those who might turn around when they come to a gravel road or rather take a long detour on paved road instead of a few km on the gravel road. 1L also serves as an entry-level course for those who are curious to start riding on gravel.

All kinds of motorcycles participants, ranging from custom-bikers to sports and touring bikers.

The course includes:

- Riding position, seating position, how to use your eyes and throttle control
- Accelerate, brake and turn on gravel
- Traffic security and the fundamental differences between riding a motorcycle on paved and gravel road.

Level 1. Standard course.

Level 1 is for motorcyclists who want to learn the basics of gravel and off road riding. It is for those who are curious and have the attitude that gravel is exciting, fun, alluring and want to learn more.

Some of the exercises in Level 1 and virtually all exercises in Level 2 and Level 3 are conducted with standing riding position so the course is best performed with motorcycles of off-road/adventure model such as BMW GS models, KTM Adventure, Honda Africa Twin to name a few.

The course includes:

- Riding position, sitting and standing
- How to use your eyes
- Throttle control
- Use throttle and brake to turn on gravel
- Cornering
- Road safety and differences between riding a motorcycle in urban traffic on paved roads and on gravel roads

Level 2. Continuation and build-up from Level 1.

For those who have done Level 1 and wants more. For those who would rather take 100 km detour on gravel roads than a few km of paved road.

Level 3. Advanced gravel course

For those who have gone through Level 1 and Level 2

Here we go into more advanced situations and exercises.

- Riding position standing
- Where to look
- Throttle control
- Combine throttle and brake to turn on gravel
- Cornering
- Pass an obstacles
- Pass a ditch
- Ride in tracks and sand
- Turn in slopes, both uphill and downhill
- Ride on sloped surfaces and crosshill

Riding position

Sometimes the riding position is also referred to as sitting position. This is okay if you only talk about riding positions for motorcycles such as sports or custom bikes where a standing position becomes strange, difficult and not very effective from a road safety point of view.

For active gravel and off-road riding, a standing riding position is always a good base position, sitting down can be done in tight cornering or when enjoying relaxed touring on gravel roads.

What determines whether to use "active riding" or "relaxed riding" style is up to you based on your experience in combination with **your** riding style. This will also change over time.

When I as a motorcyclist is new to riding on gravel surfaces and coming up to a stretch of off-road with loose gravel, rough single or blast stone surface that I am about to ride on, it will become more advanced riding for me.

I stand up and take a riding position for "active gravel and off-road riding", I adjust the speed and pass with all the senses sharpened and with full focus on what I do. In this way, I create the best conditions to fend off unforeseen movements from the motorcycle.

When, a few years later, with many gravel miles behind me and persistent training on the SMC gravel courses, I come to a similar stretch with loose blast stones, it doesn't feel as advanced. I'm safer in my riding, feel better about how my bike behaves on loose ground and I may well pass at custom speed, seated with "relaxed riding" and just enjoy the nice gravel touring.

You're the one who decides what's advanced is for you there and then in every situation. "Relaxed riding" doesn't mean passive riding, just lower speed and larger margins, you're still active in your riding.

Riding position – seated

The foundation is the same as any motorcycle riding (see R&R v3 The basic book, relaxed riding position). The feet on the foot pegs, the knees anchored to the tank, i.e. contact with the tank without pushing hard. Loose and relaxed arms. You should "hold the handlebars", not "hold on to" the handlebars. Small nuance difference but it makes a big difference when you ride.

When we ride on gravel, or other loose surfaces, the motorcycle can begin to wriggle, feel loopy and the handlebars begin to sway back and forth in small movements. Let it do so because it's quite natural. Just relax and keep your vision high.

When you enter very loose surfaces such as sand where front wheels digs in, the handlebars can begin to sway in larger movements. There is a bit of special riding position and technology which we get to a little further ahead.

As for the position of the feet, placement with the front of the foot on the peg is preferable, it reduces the risk of hitting the foot in the ground when turning or getting stuck in rocks etc.

Active riding position – sitting.

Moving on to motorcycles of off-road and adventure models that have geometry and ergonomics for both sitting and standing riding.

Feet on the foot pegs, with the peg in the arch of the foot. This is to be able to quickly switch between standing and sitting position. You reduce the risk of slipping off the foot peg compared to having the front pad of the foot on the peg.

When active riding, both sitting and standing, it becomes essential that you continuously work to move your feet's position to switch gear, brake and be in the best position for stability and control. The knees should have contact with the tank, the body tilted forward with the elbows high, almost at shoulder height, and the eyes should be kept in a high outlook position.

Riding position – standing

Basic position: Stand on the foot pegs with the foot pegs in the arch of the foot, the toes pointed a little inwards. Contact with the knees against the tank. Lightly bent knees, the body slightly bent at the waist and forward tilted but in balance. Relaxed arms, high elbows and forward angled. Look far ahead.

In more active riding, the body position becomes more forward-leaning, chin over the handlebars but still in balance. "APOH" or "Attack position Over the Handlebars".

Benefits of a standing riding position:

Standing up enables you to look further down the road, for example, over a crest. Other road users may also see you earlier.

You can also move more flexible on the motorcycle, which gives more opportunities to balance the motorcycle.

Balance Zero

When we ride, we should use as little energy as possible. We should enjoy the ride without getting tired. This applies to both sitting and standing riding position but is more pronounced with standing position.

If we are constantly active and anticipate the movements of the motorcycle and the forces that occur when we accelerate, brake and turn, we can meet them with body movement in the opposite direction, counterbalancing. Then we don't have to use muscle power and the riding becomes less tiring. We will be in balance with the motorcycle and therefore have better control.



Photo: Meltrockphoto MC

The motorcycle is in a left turn and leans inward to the left, the rider leans in and meets the acceleration/throttle with leaning forward. Loose arms and high elbows, the force is absorbed in the legs and foot pegs, the rider is in his "balance zero".

Turning on gravel and cornering

When we ride on paved road we normally turn with counter steering to get our bike to tilt and turn. When we run on gravel or other loose surfaces, it works less well as the front wheel does not have the same stronghold as on paved road.

In the case of a sitting down riding position, we have to move our body weight and use our arms to tilt the bike in the direction we want to turn, the body moves in the opposite direction so that we fold the bike below us. The feet on the foot pegs and the weight on the outer footpeg. Outer elbow high up and the inner elbow stretched, much like shooting a bow.

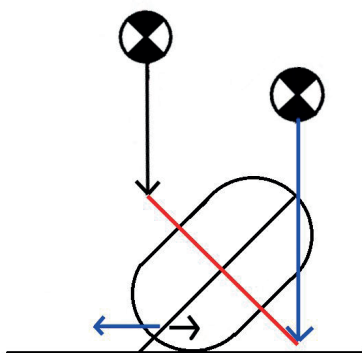
With a standing riding position, we can control course changes with placing weight on the foot pegs, so-called pedal control. At tighter turns, we complete the tilt of the bike with arms and outer knee against the tank. Outer elbow high up and the inner elbow stretched, much like shooting a bow. The feet on the foot pegs but the weight should be on the outer foot peg.

When we ride on the gravel, the speed is usually not so high that the centrifugal force to a large extent keeps us up, therefore we need to be a counter-weight to the motorcycle leaning angle. Image to the left.

If it's loose gravel, it's even more important to be in balance with our motorcycle. When we put weight on the outer foot peg, we will push the motorcycle down towards the surface and increase the stronghold, we will also balance the motorcycle's tilt, image to the right.



An extreme image but it clearly shows the advantage of putting the weight on the outer foot peg.



Illustrates where the force goes when standing on Inner vs outer foot peg.

Exercises

Before the course day and exercises, always testride the track. The surface varies and as an instructor you need to be aware of how the surface is on the track your participants going to ride on. If you as an instructor have difficulty conducting an exercise because the surface is too slippery or too loose, you must include it in your instructions and in your feedback.

Cones deployed to mark the exercises are not exact brake and turning points, on a gravel it quickly gets run up. With the cones as reference points, it is excellent to swing or slow down a little before, a little after or on the side of the cones to avoid run-up tracks. It is therefore good to make the courses a little bigger if there are many participants so there is room for maneuver if it becomes traceable and loose.

Run the exercises between 5-15 minutes at the time with breaks between them. If you have a larger group of participants, you can divide them into two sub groups and let one group rest while the other group is on the gravel running exercises.

Reference route

The reference route runs as the first element of the course, and again at the end of the day. This gives the participants a reference to have with them as a memory.

When you run the same distance again at the end of the course day with the group you will most likely experience it as much less dramatic than when riding in the morning. It will be a “wow” experience that they learned something during the day.

The distance may be made up of mixed surfaces of different kinds of gravel, such as newly smoothed, hard composed with loose strings, sandy elements, blast stones, clay, etc. Beware that there should not be too much loose sand, beginner will find it to difficult.

Practise site & Implementation:

A short gravel road distance, tractor track, path, etc. about 1-3 km. Customize the distance by level of the group.

Level 3 may have ditches, logs and stone parties on the route with the opportunity to pass on the side.

Accelerate-Brake

Practise site & Implementation:

Put out cones as reference points for starting point and braking point.

Straight on gravel or dirt road. The participant accelerates from sitting or standing position up to about: 20-30 km/h and then brakes to a standstill, in their own way.

Purpose and objectives:

To get participants acquainted with the basics and the training grounds it is a good idea to understand each participants level and how they handle their motorcycle.

Braking exercise

All braking exercises are carried out to complete stop of the motorcycle with one foot down unless the instructors says otherwise. The reason for this is mental attitude, we don't stop riding until we stand still and have control of the motorcycle.

We often see that participants who has a less good start to an exercise "give up" and roll through to "try again". Or the participant puts initial brake practice and when they're almost ready, they drop the brakes, relax and roll on. They stop riding their motorcycle and skip the exercise before it's completed.

We don't have this luxury when we ride on our roads. If there is an incoming timber truck in a curve or if any other obstacle emerges, we cannot interrupt the braking to do again, the slowdown must be carried out no matter how bad the introduction was, which is why we practice this. We won't stop riding our motorcycle until we stand still.

Practice site & Implementation:

Put out cones that become the braking point.

For Level 1L, only sitting riding position is valid.

For Level 1, Level 2 and Level 3 both sitting and standing riding position.

Brake to stop

Divide the exercise into part-exercises 1-6, approximately: 5 – 10 min per run.

1. Only rear brake, sitting, locked rear wheel to stop
2. Only rear brake, standing, locked rear wheel to stop
3. Only front brake sitting, maximum brake without the front wheel locking up
4. Only front brake standing, maximum brake without the front wheel locking
5. Both rear and front brake sitting, locked rear wheel with maximum brake on front wheel without locking
6. Both rear and front brake standing, locked rear wheel maximum brake on front wheel without locking

A foot in the ground when the braking is completed.

For all exercises, switching to the first gear during braking applies, but implement it only when you see that the participants master the first part of braking.

Purpose:

That participants should be able to brake efficiently and feel safe regardless of the surface. Understanding the difference between rear and front brakes and how they work together.

Goal:

The participant must manage all the above - No foot can leave the foot pegs during the braking. If this happens, it is a clear signal of uncertainty and that the participant is not in balance - lower the requirement of the exercise for the participants if needed.

Tips for the instructor:

Before each part of the exercise, do lessons with anchoring, riding position and throttle control, but only one thing at a time

Start easily with low requirements, raise the bar as participants advance.

Look actively for the following.

- Use of the eyes – View should be high through the exercise
- Knees – Anchoring your knees firmly against the tank during braking
- Relaxed arms
- Switch down to 1:st gear during braking

Riding with locked front wheel

Practise site & Implementation:

Gravel parking without cones.

The participant should use the handbrake so the front wheel locks and immediately release the brake so that the front wheel will grip and start rolling again. To ride with locked front wheels, explain/demonstrate how to accelerate and brake at the same time by holding the middle finger on the brake handle and the other fingers around the throttle. The exercise is performed appropriately in the first or second gear and at quite high speed (so that the engine does not die when braking), about 20-30 km/h. The realization should be that it is harmless to lock the front wheel if you release the brake again. Important to demonstrate the exercise.

Purpose:

Get participants to learn the sound and feel of a front wheel lock and to release the brake when the front wheel locks.

Goal:

For Level 1L and Level 1

- Participants should not be afraid to lock the front wheel after the exercise
- Seated riding position

For Level 2 and Level 3.

- All of the above points
- Ride with locked front wheel
- Seated and standing riding position

Tips for the instructor:

Common mistakes participants make.

They slowly squeeze in the break handle and the speed drops. When the wheel finally locks, they don't have momentum anymore.

They have too low rpm/low speed. When they brake, the bike cannot move forward and they loses their balance.

They look at the ground in front of the front wheel. Stability is disappearing.

They throw their legs out at the lock. Signs of fear and uncertainty. Balance disappears.

They slip on the clutch, the speed drops and momentum is too low.

Straight serpentine

Practise site & Implementation:

Straight row with cones, 6-3 m between each. Start with longer distances and reduce if necessary. See picture below:

Purpose:

Level 1L – Level 3

Practice riding position, throttle control and high vision.

Goal:

For Level 1L and Level 1

- Not afraid to turn on gravel, accelerate softly when rounding the cones without getting rear-wheel slip.

For Level 2

- All of the above
- With the rear brake, let the rear wheel slip out at the rounding of the cone
- Ride with short throttle burst ("braap") and low gear to get the back wheel to slip and slide around the cone.

Tips for the instructor:

Common errors participants make.

Look to near the front wheel.

During the "BRAAP" exercise, the throttle burst comes too late, the participant steers around the cone and accelerate after the turn as they ride towards the next cone. The throttle burst is not for acceleration, just enough to make the rear come loose and then gin grip again.

A perfectly executed BRAAP ,i.e. "steer with the throttle exercise" leaves a track like this.



Wide Serpentine

The same exercise and requirements as with straight serpentine. However, wide serpentine demands more focus on throttle control.

Practise site & Implementation:

Zigzag row with cones. 8-12 m between the cones along the way. 1-3 m sideways.

Purpose:

Practice on throttle control, riding position, balance and high vision.

Goal:

For Level 1L and Level 1

- Ride with a seated riding position
- Dare to turn on gravel, to accelerate softly when rounding the cones without getting a rear-wheel release

For Level 2

- All of the above
- Both sitting and standing riding position
- With a short rearbrake steer out the rear wheel at the rounding of the cone
- "BRAAP", i.e. with short throttleburst get control over the rear wheel when slipping and get the motorcycle round the cone

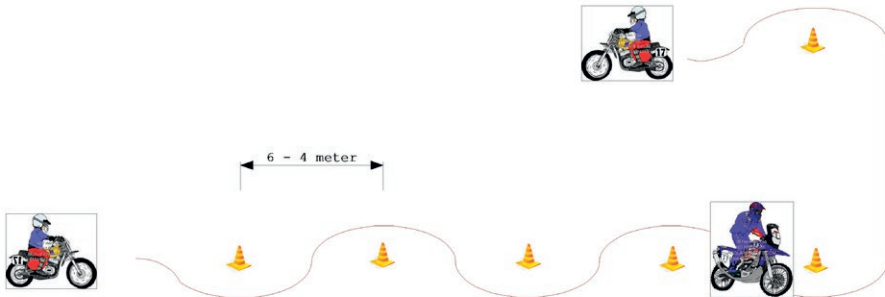
For Level 3

- All of the above and combined with break control and throttle control around the cones

Tips for the instructor:

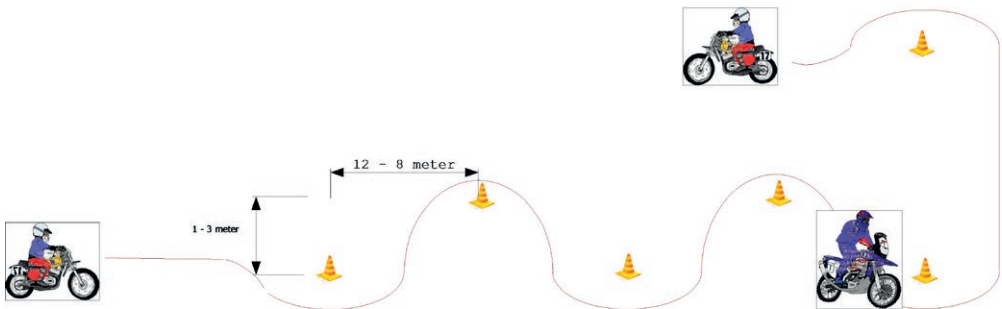
Go through the riding position with focus on balance zero for standing position. Always be in balance with the body in such a way that you are one with the motorcycle but at the same time do not waste energy. I.e. no unnecessary energy use in either the arms, upper body or legs.

Also go through the importance of how to steer with your eyes. Look at the second cone before turning around the first one.



Straight serpentine

The dimensions are approximate, when you have built a course, you should always test ride it and adjust it accordingly.



Wide serpentine

If you move the serpentine on the width you need to increase the length times 2. So, if you increase the width with 1 meter you need to extent it with 2 meters on the length.

Fat Serpentine

Practise site & Implementation:

Really wide zigzag row with cones. 30 – 40 m between the cones. 30 – 40 m sideways so participants have time to switch to second gear before it's time to turn.

This simulates riding on the road with sharp turns. The exercise combines throttle, brake, look and riding position.

Purpose:

- Practice riding position, throttle and high vision. Simulated riding on the road with up and down gear shifting.

Goal:

For Level 1L and Level 1

- Seated riding position
- Dare to turn on gravel, to throttle softly when rounding the cones without getting rear-wheel release

For Level 2

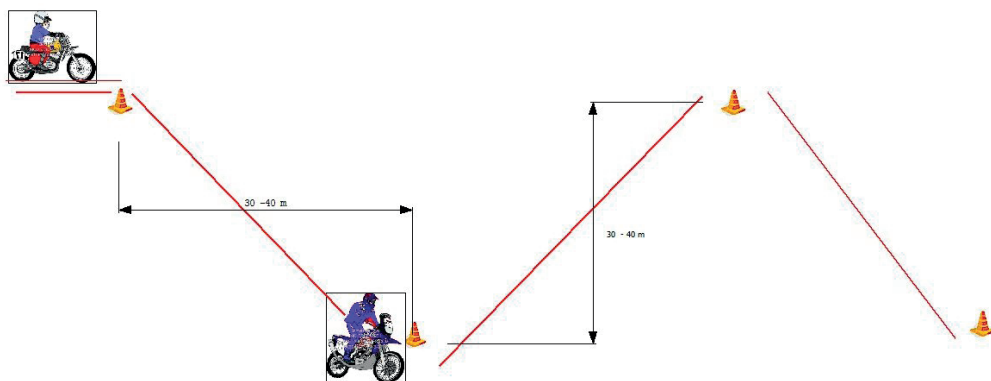
- All of the above.
- Both sitting and standing riding position
- With a short rearbrake steer out the rear wheel at the rounding of the cones
- "BRAAP", i.e. with a throttleburst the rear wheel to slide to get the motorcycle round the cones.

For Level 3

- All of the above combined with control of the motorcycle with brake and throttle around the cones in a single friction free movement.

Tips for the instructor:

Very important: Check the eyes and where the participant looks. The whole exercise is based on the concept of eye control.



Fat serpentine

The fat serpentine should be built substantially large so that the participant has room to maneuver but also that the length between the cones that requires gearing up, gearing down and brake for each turn. The course must be big enough so that the participant gets a flow in the exercise, a large and well-designed serpentine rewards the self-esteem.

The Square

Practise site & Implementation:

Put 4 cones in a square with approx: 12 – 15 m between cones. The participant should be able to accelerate properly in the first gear but without having to gear up.

The participants ride around the square. Max two participants at the time, they should not need to brake for each other.

Purpose:

- Get the participants to control the motorcycle with the rear brake, a so-called "brakestop". I.e. lock the rear wheel and countersteer with the handlebars, get the front wheel directed at the next cone.

Goal:

Level 2.

- Get participants to dare to accelerate, slow down and turn on gravel surfaces
- Both sitting and standing riding position
- Get participants to control the bike with the rear brake, i.e. lock the rear wheel and countersteer with the handlebars, get the front wheel directed at the next cone, not steer against.

Tips for the instructor:

Common errors among participants are that they look too late towards the next cone a corner away. Head twisting and looking 90° towards the next cone should take place approximately when crossing half the distance between the cones. Eye control and look is key.

Another common error is that participants have too low speed combined with slowing down too early when they're trying to anticipate the turn around the cone. This means that they have too low speed and too little momentum energy to move the rear wheel around the cone. It is addressed by slowing down at the cone and putting out a slide when they feel they have balance.

The key is to steer with the eyes.

The Triangle

Practise site & Implementation:

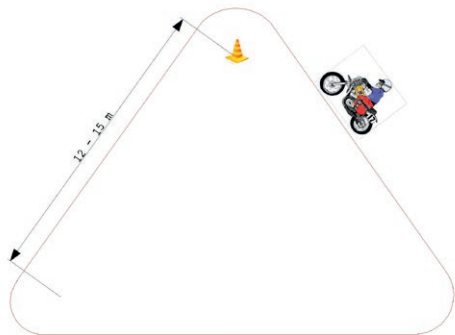
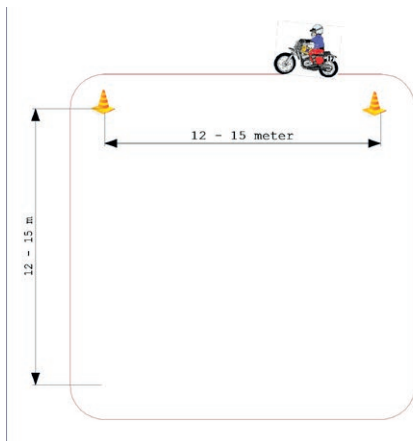
Just like the "square" but you remove a cone to complicate the exercise, it becomes a longer curve. Remember to move a cone in so the triangle becomes unified, the curves should be 120 degrees each. If you just remove a cone from a square, it becomes a right-angle triangle with 135 degrees in two of the curves.

Purpose:

Like "The Square."

Goal:

Level: 2 Like "The Square".



Brake to stop at an angle

Practise site & Implementation:

Part-elements of the exit exercise. See course description during "Exit exercise".

The participant accelerates up to the appropriate speed, 30-50 km/h, and then lock the rear wheel from the brake cones so they slide about 10-15 m to stopping using first gear. Get the participant to adjust their breaking point so they stop at the side of the cones. Build on the exercise "Square" with doing the same start at higher speed, which requires more planning and view control.

Purpose:

This exercise involves getting acquainted with riding with a locked rear wheel and realizing that it is completely undramatic.

1. Lock the rear wheel firmly at the brake point so the rear wheel slides
3. Change the view point in the direction of the side cone, left or right side and start turning
4. Release the brake only when the bike stopped
5. Put down a foot

Tips for the instructor:

The rear wheel must be locked. If they don't do that, the brake overheats quickly and stops working completely and the motorcycle will not turn. In case of repeated braking exercise with ABS, the ABS can drain the battery on some motorcycle models.

Exit exercise

Practise site & Implementation:

See the picture below. Start by putting the cones according to the dimensions and test ride the course, adjust if necessary.

Continuation on the "Brake to stop at an angle" exercise. This exercise combines and ties together previous exercises with throttle, brake, vision, riding position and planning. The exercise is an imaginary scenario where you need to make course change based on an unforeseen obstacle.

The exercise is used so that you first have an acceleration distance to get up to 30-50 km/h. At the brake cone, you lock the rear wheel and slide with locked rear wheel 10-15 m, downshifting at the same time.

At the end of the braking, you steer 90° towards the left or right-side cone. Here you are basically stagnant with your feet left on the foot pegs. Drop the clutch, ride forward 2-3 m and brake to stop, one foot in the ground.

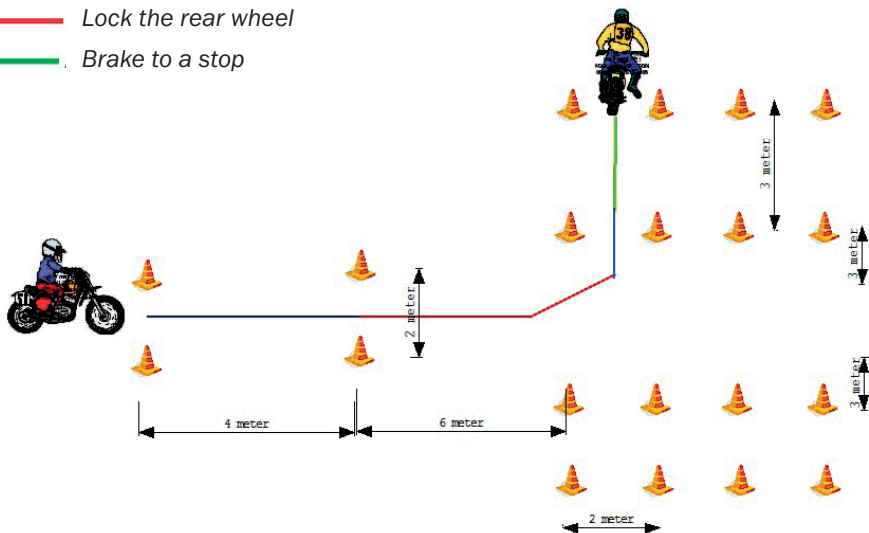
Purpose:

- Get participants to slow down and adjust the speed so that they can swing away from an obstacle. This requires planning and eye control.

Tips for the instructor

See the Precision Exit exercise on page 43.

- Accelerate
- Lock the rear wheel
- Brake to a stop



Point turn (Elephant turn)

Practise site & Implementation:

A start cone and a turning cone about 30-50 m away.

With brake slide and accelerate slide turn the bike 180° and ride back to starting point. One can also use four cones to mark a square with turn radius of about 5 m and reduce it gradually, but not below 3m.

Purpose:

To easily turn on narrow road or cramped space. Ex. you face something unexpected or there are obstacles along the way and there is no possibility to get past it – you simply have to turn around.

Goal:

The participant should be able to slow down the bike and spin around 180° to accelerate back to the start in one, floating movement.

Tips for the instructor:

As always, the exercise is dependent on the participants vision. Even when the rear wheel is locked, you should turn your head and look in the right direction.

Instant traction

Practise site & Implementation:

Gravel parking or flat slope. Stand with the motorcycle on idle or light throttle, handbrake applied and clutch in pull position. With determined motion, both feet put on the foot pegs and push down the bike while releasing the handbrake and gently releasing the clutch and riding away without wheel spin. You seek a grip for the rear wheel and regulate it with clutch control. It is carried out in both sitting and directly to standing riding position.

Purpose and objectives:

For the participant to find balance, start and get away in places with limited space, slippery surfaces or in slopes.

Tips for the instructor:

Unsecure participants tend to look down, low view, resulting in poor balance.

Riding up steep hill

Practise site & Implementation:

Suitable uphill track. Riding position is standing, ride straight towards the hill on the first gear at little more than walking speed. If there is a clear "kink" between flat ground and where the hill begins, use this to compress the suspension to gain traction and give a little more throttle to get more speed up the hill.

All the time, you should look and search for surfaces with best possible grip. High vision up the hill, tilt body slightly back to gain weight on the rear wheel for better grip.

Purpose and Objectives:

To be able to safely ride up a hill with varying slope and with varying surfaces without getting wheel spin or fall over.

Tips for the instructor:

Combine with the previous exercise, Instant traction.

Ride down steep hill

Practise site & Implementation:

Suitable downhill. Riding position is standing, knee-contact to the tank. Walking speed in first gear. Weight distribution low and backwards with the weight on the foot pegs and a light grip on the handlebars. Look down the hill. Regulate speed with the engine brake, foot brake and handbrake. Important that the rear wheel does not lock and begins to slide. Then there is a high risk that it will slide off either ways or that you fall. Walking speed all the way down the hill. It's really hard to slow down from the speed you have so it's crucial to start at a really low speed.

Purpose and Objectives:

To safely be able to ride down the hill with varying slope and with varying surfaces without the rear wheel sliding away.

Turn uphill

Practise site & Implementation:

Suitable uphill track. Start practice "Ride up the hill". A bit up in the hill turn slightly right and slow down to full stop with foot brake and gear in so the engine stops. Keep the first gear in and keep your foot on the foot brake. Left foot in the ground, i.e. towards the hill.

With full steering lock left and by releasing the foot brake gently, you can use the clutch and engine with gear in as a "reverse brake". Let the motorcycle roll slowly backwards until it stands perpendicular to the slope. At this point, you start to "seesaw" with the handlebars, i.e. full steering lock right or left, back and forth. Then the **front** wheel of the bike will work its way down the slope.

When the motorcycle turned more than 45° turn the handlebars fully right. Keep the handbrake applied, start the engine, use "Instant traction" to get off and ride down.

An alternative practice is to turn the other way, it gets a bit trickier when the foot brake is on the valley side of the motorcycle.

Purpose:

Make a safe turnaround in a slope when there is no opportunity to continue uphill.

Goal:

The participant should feel safe in conducting the exercise.

Tips for the instructor:

Bring up theory. Which brake is most effective on the hill, front or back? Weight on the foot pegs – the inside against the hill or the valley side? (tip: valley side).

Where do you look, uphill or downhill? (look uphill to remain in balance).

Turn downhill

Practise site & Implementation:

Suitable hill. Start the exercise with "riding down steep hill". A bit down the hill: step on the foot brake without pulling in the clutch so the engine stops, leave the gear in and hold the handbrake.

Take a moment to think, relax, don't rush into something.

Check which way is appropriate for a turn. Now it will be a bit tricky when you should keep the handbrake and start the motorcycle and ride away.

Once you decide which way to turn, tilt the motorcycle slightly inwards with support on your leg against the hill (not the valley side, it's too high from the ground), set the handlebars fully locked in the direction you want to turn. Using the pull position on the clutch while release the handbrake gently until the motorcycle is crosshill.

With the help of "Instant traction" get away, search grip for the rear wheel and ride a few feet on the slope to get some speed, steering up the hill to where you came from.

Purpose:

Make a safe turnaround on the hill when there is no opportunity to continue downhill.

Goal:

The participant should feel safe in conducting the exercise.

Tips for the instructor:

Go through throttle and clutch control, weight on the hillside leg standing on the ground, the other foot on the valley side foot peg with the bike slightly tilted inwards. Think about where to look, high vision for balance.

Crosshill riding (sidehilling)

Practise site & Implementation:

Suitable hill as it should be possible to run out directly crosshill, otherwise start with the exercise "Turn down hill".

When the motorcycle is perpendicular to the hill, go really slow with the help of throttle- and clutch control. Tilt the bike slightly towards the hill with weight on the outer foot peg.

Purpose:

Able to ride safely across a slope, hill or cross a ditch diagonally

Goal:

The participant should understand the theory of sidehilling and feel confident in conducting the exercise.



Debbie Evans clearly illustrates why to place the weight on the outer peg, the valley side. What do you think happens if she were to put the weight on the inner foot peg?

Drifting, "powersliding"

Practise site & Implementation:

Build a large and long curve of cones. Accelerate in second to third gear, tilt the motorcycle inwards (counter steer) in the curve and put the weight of the outer foot peg. When the rear wheel slips and starts spinning and the rear of the bike begins to drift out, it is important not to abruptly turn off the throttle. There is a risk that the rear wheel will grip the surface and a high-side becomes a fact.

When the rear wheel starts spinning, keep the throttle constant, the speed will slowly increase and the slide will gradually decrease.

Purpose:

To be able to safely handle an involuntary drifting situation that has arisen without getting a high-side. Being able to use a slide to control the bike with the throttle in a calm, controllable way.

Goal:

The participant should understand the theory and feel confident in conducting the exercise.

Tips for the instructor:

This is a difficult exercise to get right. It is very dependent on the surfaces, type of tires and engine power on the motorcycle. If you have knobby tires, it can be very difficult to get the rear wheel spinning.

It takes a little extra of the participant to dare to open the throttle so the rear wheel releases and then dare to keep the throttle open once it happens. It's about putting all the weight on the outer foot peg and being in balance with the motorcycle.

Several participants are likely to take it easy on the throttle until they turned up the bike. If that happens, you can put out another cones further away, e.g. 60 degrees in relation to the starting direction, for another referencepoint.

Many participants experience this as a very thrilling exercise, so be observant on whether it starts to go too fast and if there are signs of problem such as missed gears and exaggerated wriggle of the participants. If so, take a break in the exercise and go through what these mistakes can result in or otherwise appropriately actions that cause participants to calm down.

The instructor should show the participants how to make a calm, controlled powerslide without wriggle and a rear wheel gripping uncontrollably.

Additional exercises from the Workshop 2018

Exercises to be used if there is time or a need for variation

Slow race (Level 1 or 2)

Purpose:

Ride as slowly as possible without putting your feet down. Exercise the balance, clutch and throttle control, braking techniques and vision.

Traffic connection:

Since almost 45% of all single accidents occur at low speed or stagnant, there is a strong need to exercise in riding slowly.

If you make the exercise into a small competition, you also get a good foundation for the following discussion about stress.

Implementation:

2-10 people get to start at the same time at a starting line. A target line is marked about 10-15 meters away. Last over the finish line wins. This can also be performed on a larger surface without the "competition moment" to practice the technique but the recommendation is to make a small "competition" of the whole thing to add the stress moment.

Execution:

The feet on the foot pegs, vision steady and far ahead, standing or sitting riding position depending on the motorcycle, either kneecontact or not depending on what feels best and helps maneuvering. Light and stable base-throttle, work with balance, control commands and slipping clutch. Brake can be applied to slowdown the motorcycle, preferably the rear brake so that the fork does not have to merge and disassemble all the time which interferes with the balancing act.

It is important to make small and finetuned movements. With large and vigorous gestures, you easily get into imbalance and have to make equal and vigorous counter-movements.

Feedback after the exercise:

Talk to participants about how many accidents occur at low speed and the need to practice balance. Important to also talk about the stress that arose in the competition and to get participants to understand that stress is also present in traffic. Stress means doing unwise things.

Spinturn (Level 3)

Purpose:

Turn in a controlled manor in a small space with a gravel surface.

Traffic connection:

To turn around in a narrow space, most people will get off the motorcycle and try to muscle it around which is difficult and increase the risk of the rider dropping the motorcycle. It is also easy to stretch a ligament or muscle. The spinturn exercise is about letting the motorcycle do the job, which reduces the risk of injuries and damage on the motorcycle.

Implementation (Turn left):

Put one foot down on the ground, such as the left one, the right one remains on the foot peg. Stretch the left leg and angle out at 90 degrees towards the long side of the motorcycle. Tilt the motorcycle and put the weight on the thigh, as much as you can handle depending on the weight of the motorcycle.

Turn your head in the direction you want to ride after the turn. Turn the handlebars to the left, give it some steady throttle, let out the clutch to the pull position and let the rear tire start to slip towards the surface. increase the throttle if necessary and release the clutch even more.

Start by turning in 90 degrees before testing 180 degrees.

Keep in mind that:

The more you lean the bike the less throttle is needed to get the rear tire to start spinning.

Even a heavy motorcycle can be tilted properly if you at the same time you lean it down balances with the spinning of the rear wheel, this discourages the bike to lie down completely. If the tilt and throttle is made in a single controlled movement, you can turn a really heavy motorcycle around quickly and smoothly.

Always look the way you're going. If you're going to turn 180 degrees, you turn your head 180 degrees. The motorcycle will follow your eyes.

Please Note! Too much throttle and a clumsy slip of the clutch combined with too little lean means that the motorcycle sets off without turning around. You don not want the rear wheel to grip, just spin and slide.

Feedback after practice of spin turnaround:

It is important to plan your riding in such a way that you do not have to turn unnecessarily. All turns entail a risk so it is better to completely avoid them. But sometimes you cannot avoid turning around and then it is good to have practiced on different turn methods. The spin turn is perhaps the most extreme type of turnaround but it is the fastest that also takes the least energy because the motorcycle is doing the job.

Many people ride large and heavy motorcycles and in the course of needed "spin turn" it is always a good idea to simply unload bags and other to get less weight. We are generally too lazy and try to turn the "ship around" directly because we are afraid to drop the motorcycle, break off the handles and foot pegs so we try to prevent everything from falling, causing us to get injuries such as back problems or damaged muscles and ligaments.

We have to learn how to plan our journey so we don't have to turn around, but if we still have to turn around, we'll take it easy and plan it. Then we ride back in a risk-free way and find a new route.

Alternative ways to turn:

You can also make a spin turn without a rider in the saddle i.e. standing next to and leaning the motorcycle against the outer leg where then both legs act as a pillar that you turn around. This can be perceived a safer way if you are a bit insecure.

It is also possible to turn sitting on the motorcycle by moving it around in small steps, however, it is physically difficult, especially if you have a heavy motorcycle with a lot of cargo, or if you as a rider are not too strong. Important here is to master to slip the clutch to use the engine as help. All exercises that include running slowly with slipping clutch have a side effect in making it easier to also make slow turns.

A third option is to let participants turn around the motorcycle by walking next to it by pulling and dragging it around. This is a common way for many but the method often means that you can't hold up the motorcycle and end up dropping it which might include high costs, inconvenience and injured rider.

Precision brake (Levels 2 and 3)

Purpose:

To be able to brake to full stop with precision at a given location.

Traffic connection:

In traffic situations, there are three types of braking required.

Type one is a slow, soft and planned braking with plenty of time and space to brake. The braking can take place without any effort and the precision is high.

Type two is a fast and powerful braking, not panic but still under pressure. Something unforeseen has occurred but there is still plenty of time and space.

Type three is a pure panic brake where there is no time or place, you just "bang" on the brakes.

This exercise addresses type two of braking, relatively powerful but not panic brake.

Implementation:

From a given speed, such as 30km/h, the participant should stop with the front wheel at a specific location, suggest a cone or a line in between cones. After a few attempts increase the speed to 50km/h and later 70km/h.

Execution:

Feet on the foot pegs, steady throttle and keep the vision high, standing or sitting riding position depending on the motorcycle.

The knees and calves should be firmly anchored in the tank and/or frame (depending on the motorcycle), the back and abs should be tensed. Arms and shoulders should be relaxed so that you can easily heave a possible slip.

The exercise is carried out by forcing a hard brake early and then reduce it when getting closer to the target. The last bit should be light braking and the speed so low that you can get the motorcycle to stop exactly at the cone.

Feedback after the exercise:

Talk to the participants about how important planning is when riding a motorcycle. The better planning, the less risk of accidents. The above exercise is all about using a light brake that is applied for longer distances, i.e. a slow braking procedure, buying time for planning and precision.

You should also talk about the difference with a panic brake, i.e. when planning has failed completely.

Precision's Exit (Level 2 and 3)

Purpose:

To be able to brake and turn with precision at a given location.

Traffic connection:

When travelling on narrow gravel roads you sometimes encounter obstacles that appear so that you have to change direction. This is the same type of exercise as the "Exit Exercise" at page 31 but with more precision.

Implementation:

Carried out just like the Level 2 Exit Exercise. The main difference is that there only is one "exit", it is narrower and marked at the forefront with, for example, braches, ATA-tape or other clearer markings.

Build an "exit to another road" or an intersection by using braches or simply digging a small and narrow "ditch" that marks the road sides.

Execution:

Same as Exit Exercise at page 31

Feedback after the exercise:

Same as the Exit Exercise.

Tips for the instructor:

Some participant experiences the exercise as easier to understand than the usual exit exercise just by not having options where you should turn off. It's easier for the eyes with less things to look at.

Run in tracks (Levels 2 and 3)

Purpose:

Being able to handle riding in tracks, i.e. when the front wheel is controlled by the track and not by the rider.

Traffic connection:

Gravel roads look very different from each other with shifting surfaces. Wet gravel roads, especially in spring, can be muddy and torn up by cars and trucks. They then get hefty traces of the tires from the heavier vehicles that have sunk into the muddy roadway. A light vehicle like a motorcycle that ends up in such a track will not be able to be controlled in the normal manner but the rider may simply "keep up" and just try to keep the balance.

Implementation:

The motorcyclist gets to ride his motorcycle in a few meters long "track" to feel what it feels like and learn that they can keep the balance even though the motorcycle goes on "rails". Carried out with standing riding position or with "light saddle" if you do not ride an adventure/offroad motorcycle.

Execution:

Dig a 10-meter long ditch, a few centimeters deep and about a decimeter wide. Put down long boards that edge so that the ditch track does not collapse when the first bike runs into it.

A simpler option is to just lay out long boards on the ground, about a decimeter between them, to simulate a clay track. The advantage of the latter is that if the participant is very uncertain and loses the balance, the boards will move.

An even simpler variant is to just ride along on a plank which is on the ground. Its the same principle in all three cases.

When riding, it is important to relax and let the motorcycle follow the track. Focus on being relaxed in your arms, keep your eyes high and to be anchored with your knees. A good technique is that just before you ride down the track to look at the obstacle and take a mental "picture". Then you lift your eyes but leave the "image" on the retina when riding through the track.

Alternative riding style:

If you want to simplify the exercise, you can ride slowly in the track, sitting with your feet in the ground to support and "paddle" yourself forward. However, that procedure increases the risk of falling because the rider is not in full contact with the motorcycle and therefore does not have balance and full control.

The goal is to get the participant to stand up and work with relaxation and balance as soon as possible, which is also the safest and least risky way to ride in tracks.

Feedback after the exercise:

Initiate a discussion about how it works with tracks and the importance of standing up so it is easier to keep the balance. You also get further away from the obstacle, at least mentally, which can make it easier to dare to relax and just accompany the motorcycle. A two-wheeled vehicle is very good at keeping the balance as long as the rider lets it do so and does not hinder the motorcycle by holding tight in the handlebars.

8 - 10 m long boards, 4-5 cm thick



Fat 8 (Level 2 and 3)

Purpose:

Proof that all exercises of the gravel course are used correctly.

Traffic connection:

When travelling on narrow gravel roads you can sometimes encounter that obstacles appear so that you have to change direction of travel. This is the same type of exercise as the Exit Exercise and the Elephant Turn but this exercise takes place at a higher speed, contains more features such as gear shifting and practicing all other exercises.

Implementation:

Two cones, sticks, barrels or whatever you have to set up with such a distance that the participant must both gear up, gear down, use balance zero, use braking techniques and riding position in curves.

This exercise "ties the bag together" and provides a receipt for all the exercises in one moment.

Execution:

The participant rides in a large 8 between two cones lined with hefty distances. The rider should accelerate, gear up, adjust the riding position (balance zero) gear down and brake charge. The rear wheel should be locked during braking (Exit Exercise, Square Exercise) and motorcycle should be turned at 90 degrees behind the cone with locked rear wheels. The eyes is directed towards the second cone while the rear brake is released and with the help of angle, clutch control and throttle, the motorcycle should be slipped around another 90 degrees so that the participant continues back towards the first cone. This is repeated at the rounding of the first cone and then aiming for the second cone with the procedure repeated.

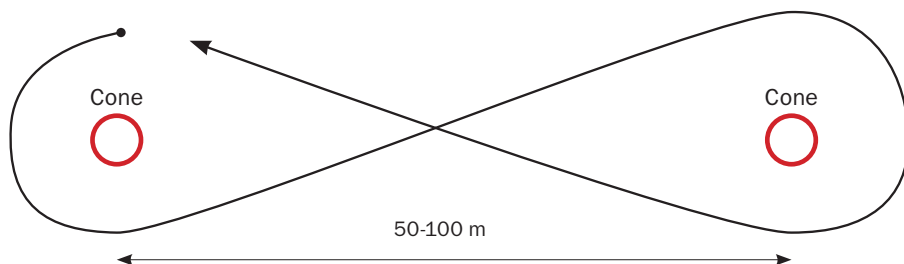
The exercise is very intense and physically difficult, it should therefore run in several rounds with rest in between.

Feedback between and after practice:

Have a discussion about all the different techniques we have practiced during the course and pinpoint and rehearse after each attempt what kind of technique is used during the different parts of the exercise. Also be sure to connect all exercises and part-elements to reality/traffic situations and why we do the exercise.

Keep in mind:

Point out that participants do not have to turn close around the cone itself but take out the turns properly until everything sits properly, first then you are ready to go narrow in the turn itself.



Lifting motorcycle (Level 2 or 3)

Purpose:

Being able to lift your motorcycle after dropping it.

Traffic connection:

When riding on gravel surfaces and at low speed, sometimes you fall or you just drop your bike. This exercise is for everyone who want to be able to lift up their motorcycle no matter how short, long, weak or strong they are.

Implementation:

Find a training ground with a soft and clean surface that does not scratch the motorcycle, preferably a lawn, meadow or equivalent.

Put the motorcycle down on the side and learn how to lift up the motorcycle.

Execution:

There are at least three different ways to lift up their motorcycle:

German version:

For example, if the motorcycle is on its left side, you turn the handlebars to the right, as much as possible. Since in that case the left-hand grip is as far from the motorcycle itself as possible so you get a good lift arm and can lift the motorcycle up in that handle. If the motorcycle is on the right side, you do the same thing but you turn the handlebars to the left.

American version:

If the motorcycle is located on the left side, you turn the handlebars to the left (on the contrary to the German variant). Then you sit on the edge of the saddle, the part that is upwards, with your back to the motorcycle. With your right hand grab the left handle (the clutch side), With your left hand, you grab a suitable thing such as the passenger handle or the mount for the pack bags, depending on the type of bike you have.

With your legs, you put all weight to the ground with small and short steps. With the help of the back, you press the motorcycle sideways and upwards. You lift the motorcycle with your legs and back and with your butt that connects to the saddle of the motorcycle while lifting in the clutch handle and passenger handle.

SMC version:

Use one of the variants above but also use a friend who places his feet on the rear rim, the part that is upwards. Then he grabs handles or passenger foot pegs or what is at hand and with the help of his own body weight acts as a lever arm on the opposite side as that the rider lifts.

Feedback after the exercise:

Be sure to try to use the lever arm effect so the participants don't injure themselves, let physics work instead of stretching your back or otherwise. It's hard to ride on if you hurt yourself when you make mistakes in the lift. Also keep in mind that once you get the motorcycle up it is easy that it just continues in the other direction and goes over again.

Towing a Motorcycle (Level 2 and 3)

Purpose:

Being able to tow a broken motorcycle.

Traffic connection:

In the event that the motorcycle breaks down when you are in crowded places that prevent a tow truck or other help from getting around or simply that you are so far up the small roads that it is difficult for tow trucks to find you.

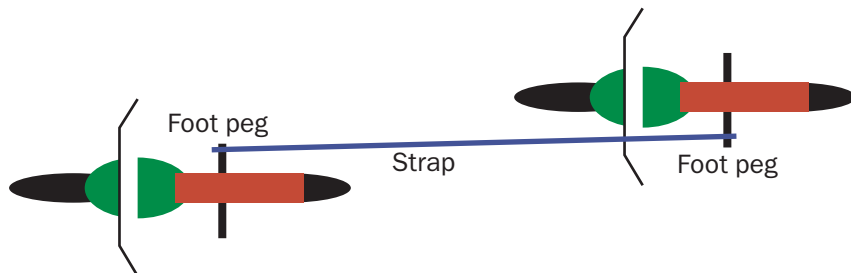
Implementation:

Wrap a strap around the pulling motorcycle right foot peg but wrap only half a lap and let the right foot push the strap into the pin tags of the foot peg. On the motorcycle to be towed, you do the same thing, wind the strap half a lap but you do it around the left foot peg and let your left foot push the strap into the pin tags. The idea is that the towed bike should be able to roll at an angle behind the pulling motorcycle in such a way that the strap does not chafe against the wheels.

If something happens so that the tow must be interrupted, both the pulling and the tow rider can only lift his foot and the strap is then released. You must not attach the strap with hooks or tie it so hard that it cannot be loosened easily during the journey, **IMPORTANT!**

It is good to also talk about different signs, such as using your horn to signal if you want to stop.

Tow at low speed, max 10 km/h



High Serpentine (Level 2)

Purpose:

Ride a serpentine and practice balance and turn technique with increased difficulty.

Traffic connection:

Since almost half of all single accidents occur at a low speed or stagnant, there is a strong need to practice balance. This is a way to further spur up the severity of the techniques required to ride slowly through narrow passages.

Implementation:

Set up a serpentine just as usual but use tripod racks and snowplow sticks or the equivalent. The point is to increase the severity by the high sticks making it difficult to angle the motorcycle into the turn without the handlebars touching the sticks.

Do not forget to test the serpentine before the participants ride so that the distance and the surface don't make it too difficult.

Talk about the importance of how the throttle controls the motorcycle and that you keep it a couple of sticks forward all the time.

To further increase the severity, you can move out every other stick sideways.

Serpentine in a slope (Level 3)

Purpose:

Practice balance and turn technique in a slope.

Traffic connection:

This is a way to further increase the severity of the techniques required to ride slowly through narrow passages.

Implementation:

Put a serpentine just as usual with cones or sticks but put it up on the side of a hill. It can be a flack or steep hill, it can be loose or hard ground. Everything depending on the severity that you want to achieve.

Do not forget to test the serpentine before the participants should ride so that the distances and the surface do not make it too difficult.

Run the serpentine both uphill and down, making the same serpentine two completely different exercises with different difficulty levels.

Talk about the importance of how the view controls the motorcycle and that you keep it a couple of cones forward all the time.

Example of schedule

Level 1 L

<u>Example of schedule with approximate holding times. SMC gravel course Level 1 L</u>		
Tid ex:	<u>Place</u>	<u>Description</u>
07.00	Training facilities/track Instructors meet	Build the tracks. Inspect and control the exercise area, exercise paths and reference distances. Run through today's exercises, divide into groups.
08.00	Participants arrives	Welcome the participants, check the motorcycles and check driving license.
08.30	Training facilities/track w. participants	In the training facilities with coffee. Information about the day and the exercises
09.00	<u>Reference distance</u>	No Reference distance for Level for Level 1L
09.20	The groups on respectively track	
	<u>Exercises</u>	Run for 10 - 12 minutes. Include break for feedback, reflections, theory and water
	<u>Throttle, brake</u>	Run 1L participants in short sprints, some are afraid of gravel and will get tired quickly.
	Brake to stop (x 3)	For the participants to feel the ground and warm up
	Serpentine straight and broad	<u>Theory between the exercises</u> • Gravel - The varying substrate • Driving position - Seated
	Big eight	• Look and view exercise • Throttle control
11.30	<u>lunch</u>	<u>lunch</u>
13.00	Continue / Repeat serpentine	1.5 hours including lunch, refueling and recovery
	Big eight	
	Try to lock the front wheels	If participants are ready for it
14.30	Gravel touring	Ride on local gravel roads with the group. Stop at the appropriate place to talk about road safety.
17.30	Wrap up	

Level 1

<u>Example of schedule with approximate holding times. SMC gravel course Level 1</u>		
Tid ex:	<u>Place</u>	<u>Description</u>
07.00	Training facilities/track Instructors meet	Build the tracks. Inspect and control the exercise area, exercise paths and reference distances. Run through today's exercises, divide into groups.
08.00	Participants arrives	Welcome the participants, check the motorcycles and check driving license.
08.30	Training facilities/track w. Participants	In the training facilities with coffee. Information about the day and the exercises
09.00	<u>Reference distance</u>	Short theory session and what applies. Ask how they experienced the run.
09.20	The groups on respectively track	Run for 10 - 12 minutes. Include break for feedback, reflections, theory and water
	<u>Exercises</u>	
	Warm-up "Circus Arts"	Evaluate the participants, you can clearly see comfortable they are
	Throttle, brake	For the participants to feel on the ground and warm up
	<u>Theory between the exercises</u>	
	Brake to stop (x 6)	<ul style="list-style-type: none"> • Gravel - The varying substrate • Driving position - Seated • Look and gaze exercise • Throttle control
	Rocking horse	
	Serpentine straight and broad	
	Drive with locked front wheel	
<u>11.30</u>	<u>lunch</u>	<u>lunch</u>
13.00	Continue / Repeat serpentine The square	1.5 hours including lunch, refueling and recovery Stir with brake
14.30	Gravel touring	Ride on local gravel roads with the group. Stop at the appropriate place to talk about road safety.
	<u>End with the reference distance</u>	Ask the participants how the reference run felt this time compared to the morning.
17.30	Wrap up	

Level 2

Example of schedule with approximate holding times. SMC gravel course Level 2		
Tid ex:	Place	Description
07.30	Training facilities/track Instructors meet	Build the tracks. Inspect and control the exercise area, exercise paths and reference distances. Run through today's exercises, divide into groups.
08.00	Participants arrives	Welcome the participants, check the motorcycles and check driving license.
08.30	Reference distance The groups on respectively track	Since it fun and a good wap-up Run for 10 - 15 minutes. Include break for feedback, reflections, theory and water
	Exercises	
	Warm-up "Circus Arts"	For warm-up
	Throttle, brake	For warm-up
	Repeat brake exercise	Check that the participants understand the exercises
		Theory between laps
	Serpentine, broad & fat	• Balance 0 - standing driving • Throttle control, stir with brake "Braapa"
	Start the exit exercise brake oblique Square)	(Break off the square if the participants have difficulties to get to the brake cord)
	Exit Exercise	Run in subgroups
11.30	lunch	lunch
13.00		1,5 tim lunch for tankning, återhämtning.... Etc
	cont. w Exit exercise if necessary	
	direct start	Proposed exercises if there is time.
	3 laps in x3m square right and left	
	Point Turn	
	Uphill	
	Downhill	
	Drifting	
15.00	Gravel touring	Ride on local gravel roads with the group.
		Stop at the appropriate place to talk about road safety.
	End with the reference distance	Ask the participants how the reference run felt this time compared to the morning.
17.30	Wrap up	

Examples of riding schedule

Gravel course Level 1

Enrolment/inspection

Run reference gravel road

Exercise 1, Brake!

Practice: Flying start to brake to warm up

Theory: Squeeze your knees around the tank, anchoring, kicking the front wheel sideways

Practice: Start to stop

Theory: How to look, glove exercise

Practice: Start to stop

Theory: Riding position sitting/standing

Practice: Start to stop

Theory: Lock the wheels/ABS

Practice: Lock front and rear brake

Goal of the exercise: Controlled braking with feet on the foot pegs

Exercise 2, Parallel Brake

Practice: Run classic parallel brake, with and without ABS

Exercise 3, Serpentine!

All exercises should vary standing/sitting

Build three serpentines, two wide and one straight.

Theory: Show how to ride through the serpentine

Practice: Run through the serpentine without prior knowledge

Theory: Eye control, run bottle

Practice: **Run** through the serpentines

Theory: Control with throttle

Practice: **Run** through the serpentines

Extra Exercise, countersteer

Theory: Show and explain countersteer

Practice: Ride around the field with one hand on the handlebars (only works in really big places)

Theory: Riding position, tilting the bike

Practice: Ride around the serpentine

Theory: Combine everything

Extra exercise: Point your feet at the cones and from the cones

Extra 2: Foot peg control

Ride the reference distance!

Day 1 end!

Examples of riding schedule

Gravel course Level 2

Enrolment/inspection

Run the reference route

Exercise 1, Brake, rehearsal from day one.

Theory: Riding position

Practice: Flying start to brake

Practice: Lock front and lock rear, short locking

Practice: Switch between standing and seated

Exercise 2, Lock the rear, long distance

Theory: Lock mode, think about what's going on, how it feels and what you can do

Practice: Run at higher speed and lock the rear wheel, preferably three-four seconds of locking

Practice: Switch between standing and seated

Exercise 3, brakesteer

Theory: Steer with the brake, actively counter steer

Practice: Run long locking with oblique brake finish, about 45 degrees

Practice: Switch between standing and seated

Exercise 4, Square

Theory: Explain and show how to get around the square with brake control

Practice: Run square, right and left, switch between standing and seated

Theory: Eye Control

Practice: Run square, right and left, switch between standing and seated

Practice: For increased severity, running triangle and gas control

Exercise 5, Ride with locked front wheels

Practice: Lock short

Practice: Lock long

Practice: Lock and throttle at the same time

Exercise 6, Exit Exercise

Theory of how the exercise is conducted, explain that you use the technique to quickly change direction,

Demonstrate the exercise.

Practice: Start with slant brake to stationary (45 degrees)

Practice: Angle 90 degrees to stationary

Practice: Angle 90 degrees, downshift to stagnant

Practice: Angle 90 degrees, exit

Practice: The Scandinavian flick!

Practice: Change between standing and sitting, left and right turn

Exercise 7, Fat serpentine plus operation

Theory: Explain the exercise

Practice: Run bold serpentine

Theory: Explain drifting, the difference between pushing the left and right foot peg

Practice: Run bold serpentine plus drifting turn

Let the participants test to hold out each foot against or away from the turn

Exercise 8, Elephant turn

Ride in a long eight and brake/throttle for a turn around a cone 180 degrees. Focus on vision.

Exercise 9

Run the reference distance, stop and talk about different curves.

Day 2 end!

Examples of riding schedule

Gravel course Level 3

Enrolment/inspection

Describe the day. What we're going to do, timings, food, conclusions.

Warmup

"Follow John"

The instructor goes around in a large circle and does different exercises, the participants mimic the instructor.

When the last participant has done the exercise, the instructor does a new exercise.

Exercise 1

Riding position

Theory: Riding position, anchoring, kick on the front wheel.
Power control grip.

Practice: Start and stop, controlled brake, both feet on the foot pegs until stop. Wait 1 sec before the foot are set down.

Exercise 2

Clutch control

Theory: Why is it important? An extra throttle. Feel for grip, engine brake.

Practice: Slowrace

Exercise 3

Instant traction

Theory: Start with your feet on the foot pegs to get grip as fast as possible.

Practice: Instant traction, sitting and standing.

Exercise 4

Lift the front wheel

Theory: Why lift the front wheel? How do you do it? Swing up. Clutch!

Practice: Lift the front wheel over small obstacles.

Exercise 5

Wide serpentine

Theory: View control and throttle burst, tilt bike, long slide, press on the outer foot peg.

Practice: Run wide serpentine with throttle burst and long slide.

Exercise 6

Ride in a slope

Theory: Riding position, grip, braking technique, clutch control.

Practice: Ride up and down the hill.

Practice: Start in a slope.

Exercise 7

Turn in slope

Theory: How to turn in a slope.

Practice: Turn in slope, (ride crosshill if there is a possibility).

Practice: Go downhill and turn up again.

Exercise 8

Cross a ditch

Theory: Different ways to pass ditches. Straight, diagonally, jump.

Practice: Pass a ditch, different depths and widths.

Exercise 9

Run over logs

Theory: Clutch control and body weight, roll over or lift the wheel over.

Practice: Ride over logs.

Extra: Ride diagonally over logs.

Exercise 10

Run in sand

Theory: Body position, speed and throttle control.

Practice: Ride the sand road.

Practice: Ride soft sand.

Finish the day with a summary and conclusion.

The Off-Road Riding Act, what applies?

More and more people are choosing to ride motorcycles on gravel roads and the individual road network in Sweden. Questions have emerged about what rules applies, which is why the SMC has created an information page about this.

The Swedish road network

Sweden's road network consists of approximately 9,840 miles of state roads, 4,100 miles of municipal streets and roads and about 43,000 miles of individual roads. Approximately 7,600 miles of individual roads receive government grants from the Swedish Transport Agency. A large proportion of the individual roads are "forest car roads". (Metric system)

Definition of terrain?

An area that's not a road. (Regulation on road traffic definitions SFS 2001:651)

Definition of road?

Such road, street, square and other joint or location commonly used for motor vehicle traffic (Regulation on road traffic definitions SFS 2001:651).



What's the Individual road?

A Individual road is a road that is not public or municipal.

What restrictions apply to individual roads?

A single road can receive government grants. Then outside traffic has access to the road. Which vehicles are allowed is shown by road signs. There are also individual roads and "forest car routes" that do not receive government grants. Here, too, the owner of the road determines which traffic is allowed and is obliged to distinguish which vehicles are not allowed. A single road and "forest car road" that does not receive government grants may also be used if there are no prohibition signs.

Ban on vehicle traffic on individual roads

The owner of the individual road may decide whether to limit vehicle traffic on the road under Chapter 10, Chapter 10, 1998:1276.

Decisions to ban vehicles can affect the state grant paid by the Swedish Transport Administration for individual routes. Short-term restrictions, for example during the thawing period, do not affect the state contribution. Suspension of an individual road receiving government grants should always be reported to the Swedish Transport Administration region.

The owner of the road therefore determines who can travel on the road. If there are no prohibition signs or other obstacles, the road may be used.

It is the responsibility of the rider to find out what applies on the individual road. Violation of the ban is punishable by a fine. The Swedish Traffic Regulation Collection (STFS), contains traffic regulations under the Regulation (2007:231) on electronically proclamation of certain traffic regulations.



If this sign is posted, you may not ride motorcycle on the road!

How is the difference between road and terrain defined?

When you follow GPS or GPS routes, you sometimes end up on roads that are on the map but are gone in real life. Is this a road or is it terrain?

One road can be more or less regrown. Road and joints widely used by motor vehicles are allowed to use. According to the Terrain Riding Regulation § 1, vehicles may be used on individual exit routes or other routes in the terrain intended for vehicle traffic and certain specified areas. This should be reflected in the condition of the road and the surroundings in general.

Has the road returned to terrain, applies to the Terrain Riding Act, whether there are prohibition signs or not. Then vehicle traffic is prohibited.

If it's not a road, then the terrain riding act applies?

Yes, if it's about terrain. However, if it is a "joint" used by motor vehicles, it is a road and not terrain, according to the Regulation on Road Traffic Definitions. This can be a borderline problem. Tractor roads are terrain while an 'organized' road created with earth masses to be used over time by motor vehicles is a road

(see Supreme Court NJA 2009, p 266)

There may be exceptions to the Terrain Riding Act for certain reasons, such as for parking at events, by state/municipal staff in the field of service and ore exploration. The exceptions are communicated by the County Administrative Boards under the Terrain Riding Regulation. The exceptions do not apply to motorcycle riders on excursion.

What else is there to consider in this context?

Respect the owner of the road! It is obvious that all use should be made so that you do not harm the road. Don't annoy forest owners, locals and others unnecessarily. Show respect, follow the laws and rules that apply. If a larger group is going to country parts where you haven't been before, it might make sense to prepare by searching for roads that are off. This can be found in the Swedish Traffic Regulation Collection (STFS).

Current laws

Regulation (2001:651) on road traffic definitions,

Road

1. Such a road, street, square and other joint or place generally facing traffic with motor vehicles,
2. a joint organized for bicycle traffic, and...
3. a walking or riding track on a road according to 1 or 2

Off-road riding regulation, riding on bare ground

§ 1 When cases or actions cannot be carried out in any other appropriate way, despite first paragraphs § 1 of the Road Riding Act motor vehicles may be used.

In addition, the vehicles may be used

1. on individual exit routes or other such individual routes in the terrain intended for motor vehicle traffic and
2. in property's, railway or factory areas or other workplaces, in particular organised competition or practice areas or other similar areas. Regulation (2003:792).

Traffic Regulation 10 Chapter 10 1998:1276

In the case of an individual road, the owner of the road shall determine whether traffic with motorvehicles or a certain or certain nature of such vehicles may take place. Such a ban may also refer to vehicles with a cer-

tain width, height or weight. Prohibition according to the first paragraph shall be marked by road sign or otherwise clear way.

The competence of the Road Administration authority to notify regulations on the prohibition or restriction of traffic by motorvehicle on individual routes is set out by § 41 of the Road Act (1971:948). Regulation (1999:240).

Road Law: Order and safety regulations

§ 40 If it is necessary in the light of road safety or accessibility on a public road, the Road Management Authority may order that an individual road connection to the public road should be cordoned off or amended and enforce the order. What has been said now also applies to exits from real estate and piers. Team (1987:459).

§ 41 In connection with the permit under Section 39 or instead of appointment under Section 40 or in connection with orders under Section 40 of the amendment of accession, the Road Management Authority may notify traffic regulations in the case of an individual road, whereby traffic with motorised vehicles on the road or part thereof are prohibited or restricted. If there are specific reasons, the road maintenance authority may allow exceptions to such traffic regulations. Team (1987:459).

Off-road riding act (1975:1313)

§ 1 Riding in terrain with motorized vehicles for purposes other than agriculture or forestry is prohibited throughout the country:

1. on dryland,
2. on snow-covered woodland with plant or juvenile forest, unless it is obvious that the riding can take place without the risk of doing damage to the forest,
3. on snow-covered farmland, unless it is clear that riding can take place without the risk of damage to the ground.

Please read the Swedish Environmental Protection Agency's Handbook 2005:1 Off-road riding, Handbook with general advice for the Terrain Riding Act and the Off-Road Riding Regulation.

This is a book aimed at you who will be an instructor on, or want to arrange a Gravel Course under the direction of the SMC. The book is written to be an encyclopedia and an aid to be able to arrange a course, but it is also designed to be funny and easy to read. We hope that you who read it think the same.