

Wolverine Sports Club 2023 Spring Skills Clinic Material



This material contains helpful information that accompanies six hours of in-person spring skills clinic training.

The in-person skills clinic training will provide two days of actual riding drills. (3) Hours with practice through various courses to teach a bicycle handling skills and (3) Hours of actual group riding the next day.

This information has been gathered from a variety of bicycling sources, videos, blogs, articles, as well as from experience from Wolverine Ride Leaders Club Members and Racers.

The goal of the material is providing a good basis for understanding the various individual bike handling skills and group riding techniques that will be part of the in-person skills training.

The information areas are as follows:

Braking, Riding Straight, and Following A Wheel.

Pedaling, Cadence, Managing your Gears, and Climbing.

Cornering, and Cornering in Group

Group Riding, Pace Line Riding, Taking A Pull, and Group Ride Communications

Included in some sections are various bike setup, riding tips, and maintenance tasks that are important to safely ride your bicycle.

Braking

Brake Setup

Front brake controlled by lever on the left hand
Rear brake controlled by lever on the right hand.
This is the standard set-up for bikes in America.

Hoods vs Drops while braking and riding.

Ideally your brake levers should be set-up to allow you to reach either of these positions. If while on the drops you are unable to reach and/or pull the brake levers an adjustment of the brake lever on the handlebar may be required. Most recreational riders spend most of their time on the hoods of their brakes.

Road Bikes have drop handlebars so, you have two positions from which to apply your brakes.

First is while your hands are around the brake lever hoods with your fingers pulling at the top of the levers



Second, while your hands are on the drops of your handlebars with your fingers pulling at the tips of the levers.



Pulling the Brake Levers – Avoid Braking while turning.

Smoothly pull your levers don't grab them firmly apply pressure as needed to bring you to a stop.

Pull the right lever (Rear Wheel Brake) first and **then left lever** (Front Wheel Brake) second.

Pulling the front brake while the rear is engaged it will make it less likely to have your weight thrown forward, and possibly go over your handlebars. Modulation (How HARD YOU PULL YOUR BRAKE LEVERS) is a learned skill that you practice on your own applying brakes in different situations and speeds.

Releasing the Brake Levers

Release right lever first and then the left lever and/or both simultaneously.

Emergency Stopping

Quickly slide your butt backwards on your seat to shift your weight backwards, while applying both the front and rear brakes hard then release the front brake first and then the rear brake.



Skid while braking – Avoid Braking while turning.

Braking is a product of your brakes whether Calipers (Rim Brakes) or Disc Brakes, the adhesion of your tires and the road surface.

No matter how powerful your brakes are, there is a point at which your tire or tires may lose traction.

Your braking is affected by other factors (Water, Dirt/Sand, Gravel, Leaves, Road Markings, Debris, and Type of Road Paving) and is the main reason you must evaluate a braking situation before braking to avoid a skid.

If while, stopping or slowing, a wheel loses traction (skid) release that brake on that wheel immediately to stop the skid before reapplying it again (you will feel the wheel straight up or become stable) and continue to brake on the wheel that has traction unless your rear wheel begins to jack knife then release the front brake also.

This is learned skill from actual riding it can't be easily taught, over years of riding it will become an instinct that you just do in a skid situation.

Braking while riding in the rain.

Generally, if caught riding in a continuous heavy rain reduce your speed and give yourself more distance to brake. At the beginning of the rain shower is the most dangerous point you must watch for as oil and gasoline multicolor slicks will appear on the road surface, as the rain continues these will be less apparent. Also, road marking and lines become extremely slippery in rain avoid them.

Lowering your tire pressure, a pound or two can increase your tires footprint on the wet road providing more traction, but after the rain stops remember to add some air back.

For rim brakes, water will accumulate on your rims, lightly squeezing your brakes runs the water off the rims. Do this in anticipation of stopping or slowing, it helps with rim braking and increasing their effectiveness. Disc brakes are not as affected by water.

Brake Maintenance

NEVER RIDE A BIKE WITH A DISABLED OR MALFUNCTIONING BRAKE GET IT FIXED FOR YOUR AND OTHER'S SAFETY.

Depending on how much you ride you must inspect your brakes you should inspect regularly.

As with any component on your bike you check all the mount bolts to ensure they tight.

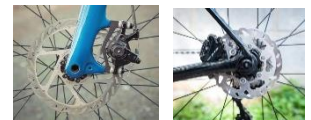
This is best performed with a torque wrench tightening them to the manufacturer spec. Bike shops will offer a tune up that includes all your components as well as brakes.

For the most part you can check your brake mountings yourself by using your multitool or set of Allen wrenches.

For Rim Brakes spin your wheel hit the brake lever there should be no movement at mounting bolt or the brake itself your brake arms and your fork may flex under hard braking, but that's fine.



For Disc Brakes check the mounting two mounting bolts on each brake and brake mounting hardware on the fork and frame rear stay depending on your bike. Do the wheel spin test again, there should be no movement in the brake and mounting hardware when the brake is applied.



Disc brake mounting hardware has the recommended amount nm (Newton Meters) force necessary to tighten down the bolts.

REMEMBER RIGHTY TIGHTY (Clockwise) to tighten, if slightly loose snug it up, do not over tighten. If really loose, you may need a torque wrench and/or a bike shop.

Symptoms of worn brakes

Reduced braking power and increased distance to pull the lever before brake engages.

For Disc Brakes unusual grinding, squealing noises. Squealing can also be due to contamination of pads and/or discs try cleaning the pads and disc. Some Disc Brakes are self-adjusting, so as the pads wear you may not notice until they really become a problem.

Note: If you have Hydraulic Disc Brakes and your lever is soft when pulled this could be symptom of fluid leak check for fluid spots under the bike or around the brake caliper, and/or your brakes need to bleed to remove air bubbles in the line. This is best fixed by a bike shop mechanic.

For Disc Brakes check your brake pads by removing the wheel and using a flashlight and placing a piece of white paper behind the brake caliper to see the wear, or you can remove the brake pads from the disc brake and inspect them, if you



know how.

If more than half of the brake pad material is gone then it's a good time to replace them. Also, if you have Hydraulic Disc Brakes and your pads have fluid on them there may leak.

Disc brake inspection and replacement may require you to visit your bike shop.

For Road Rim Brakes check your brake pads remove your wheels look at the brake pad inside the brake shoe, if the wear indicator lines on the pads are worn (more than halfway) replacement them.



STOP Do not remove the brake shoe from the brake.

Note: If you remove the entire brake shoe from your brake you may end up having to visit the bike shop for a proper toe-in adjustment your brakes.



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With your wheels removed, instead undo the brake shoe pad retaining screw to replace the brake pad in the brake shoe, it's a small screw, so don't lose it.



After that, simply push the worn pad out and push new pad in. **IMPORTANT Redo the retaining screws to secure the new pads!**

RIDING STRAIGHT AND FOLLOWING A WHEEL IN A GROUP RIDE

Riding Straight

Riding straight is a good skill to learn and practice making group rides safer. Some bike setup factors that cause and/or making riding straight difficult. If current riding position on your bike keeps your arms locked and straight all the time that's bad.

The ideal road bike riding position you should have is a slight bend in your arms. It's generally ideal as different body types effect your position.



(1) Relax your shoulders and bring them down, away from your ears. If you have been pushing hard on a climb, you may notice those shoulders stiffen and start to creep up again.

(2) Lowering your shoulders away from your ears will free up your head, making it easier to turn and look for traffic and actually helps you stay more alert!

(3) Bend your elbows! Just like on a mountain bike, riding with relaxed, bent elbows allows your arms to act like suspension. If you hit a pothole or bump in the road, your arms can help you absorb impact. Keeping your elbows bent will also reduce strain in your shoulders and allow you to ride with less pressure in your hands. With this position you can make quick controlled steering corrections that can maintain your riding line. You want a bend in arms with your arms locked your upper body movement can may be transmitted through arms into the handlebars resulting in your front wheel shimmying back and forth.

(4) There should not, however, be a bend in your wrists. **Maintain a straight line from your elbow through your fingers** on the brakes. If this is hard, it might be a bike setup issue you should discuss brake lever and hood position with your professional bike fitter.

(5) Maintain a neutral spine. What does that mean? Well, it is kind of like yoga. If you are familiar with the Cat and Cow positions in yoga, either of those positions while in the saddle could cause pain down below and inefficiency on the bike. Your back should be relaxed, keeping a fairly straight line between your hips and your shoulders. The best way to check this position while you are riding is to ask yourself: *Is my core engaged?* If your abdominal muscles are taking a break while cycling, it could result in a slouched riding position that could put pressure on your hands, shoulders or parts of your crotch.

(6) Make sure your **knee is tracking over the ball of your foot/pedal**. If your knees are bowing out to the side when you ride, it may look a little funny and it will cause inefficiency and pain. Moving your Aft and Forward seat positions should result in your knee being over the ball of your foot on the down pedal.

Your stem height should place your body at 55 to 45 degree angle over the top tube.

Your seat height should allow for slight bend in your knees at the bottom of your stroke leg test this by placing your heel on the pedal and pedal backwards. If your hips rock while pedaling lower seat. Feet should be level or slightly up at the bottom of your stroke.

A professional bike fit can be your best investment when buying a bike or solving a position problem.

You can practice riding a straight line, by picking an object in the distance and concentrate riding toward it. You can use road lines or parking lot lines to practice don't look directly down in front of your wheel look forward six to ten feet and try to ride the line.

To practice this skill on your solo rides, ride the white line on the road and focus on even pedaling between both legs. Try different gear/cadence ratios and look at the line 20 feet in front of you. Once you think you've got it, take it one step further: stay on the white line and maintain your speed while reaching for your bottle, take a drink and replace it.

FOLLOWING A WHEEL

In a group ride paceline each rider follows the wheel and path of the rider in front of them.

Starting out, it's best to keep at least a wheel length or wheel and half-length between your front wheel and the back wheel in front.

Use Soft pedaling – When you begin to get sucked into the wheel of rider in front of you, take a light pedal stroke or two to micro adjust your speed accordingly. Try not to stop pedaling and over adjust.

Feathering the brakes – Gently use the brakes while continuing to pedal or soft pedal. You can also reduce your speed without braking by raising your body to create more air resistance or moving over slightly out of the draft of the person ahead of you. You want to avoid over adjusting and moving forward or backwards too fast.

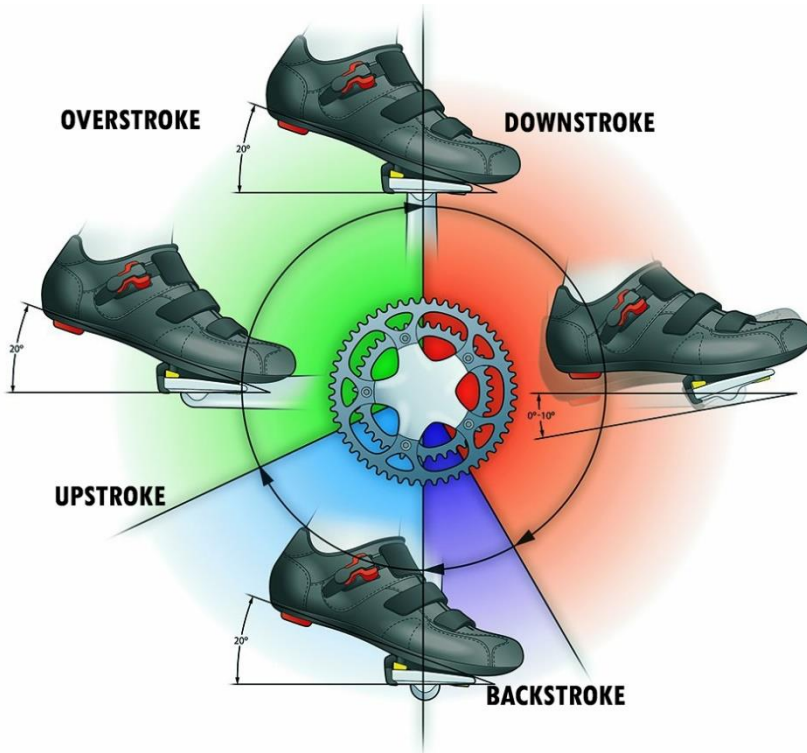
As you progress, you can close this gap. But don't overlap your wheel with the person in front because the wheels may contact with the slightest gust of wind or bump in the road.

Try to keep your head up and looking a rider or two ahead for hazards or signals from the other riders.

To avoid the possibility of overlapping a wheel it's a good habit to ride as straight as possible this predictable line helps maintain group cohesion.

PEDALING, CADENCE, MANAGING YOUR GEARS, AND CLIMBING

One fundamental aspect of cycling is pedaling.



The foot and pedal move circularly, but the force applied to the pedal varies around the 360 degrees of the pedaling revolution. The position of the foot (toe up or down) varies as well according to the technique, flexibility in the lower leg and ankle, or preference of the rider. Sliding up on the nose of your seat can aide in increasing cadence for a short time during a ride.

Downstroke

The downstroke begins as the foot and pedal move from 0 to 180 degrees (12 o'clock to 6 o'clock), with the more propulsive section between 45 and 135 degrees (or generally the down-tube to about 5 o'clock). The motion of the foot should be directed forward and downward during the downstroke.

Backstroke

The backstroke is the sector immediately following the downstroke in which the transition from the downstroke ends on one side and begins on the other. The backstroke overlaps with the downstroke and upstroke and is made by pulling backward and upward from approximately 120 to 220 degrees (4 to 8 o'clock). While in this sector, the opposite foot and pedal are entering the downstroke.

The backstroke is a transitional phase and should be emphasized only in specific technique workouts.

Upstroke

For upstroke drills, the emphasis is on pulling upward from 270 to 360 degrees. Do not pull up when riding normally, as there is little if any power benefits (probably less than 5 percent). You may, however, want to work this aspect when out of the saddle on hills or moderately rolling terrain.

Overstroke

The overstroke is the last transitional movement and precedes the downstroke by pressing forward over the top from about 320 to 20 degrees. As with any of these sectors, drill exercises are an important part of training. I recommend training sectors regularly as part of the warm-up, a regular training workout, during breaks between intervals, when riding with a slower friend, or during the cool-down.

CADENCE

The speed of pedaling is known as your pedal cadence rate, and it's measured in RPM – revolutions per minute. One revolution is equal to one full pedal stroke, you will only count one foot. Each time your foot hits the 6 o'clock part of the stroke.

Let's say you did 20 pedal strokes in 15 seconds. You'll multiply 20×4 to get your cadence. That gives you a cadence of 80 rpm. You could also count for 20 seconds. Let's say you did 30 pedal strokes in 20 seconds. You multiply 30×3 for your cadence, which turns out to be 90 rpm.

Bicycle computers with cadence sensors not only measure your distance ridden, speed, average speed, but your peak, average and current cadence which is helpful during rides.

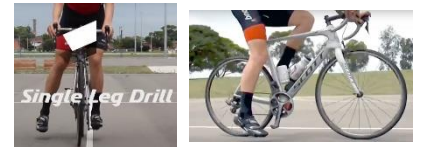
In general, for tourists, you want to have an average cadence 80 to 90 rpm or above.

Professional Racers can maintain average cadence from 90 to 110 rpm or above.

Each person's physical level will determine the cadence they are able to maintain. Coach Mike Walden always said, "You Spin To Win".

Single Leg Spinning Drill (Clipless Pedals are required)

Pick a slightly easy gear and then unclip one foot and pedal with the opposite leg only. On a more basic level, single leg pedaling drills can help you create a more balanced, and efficient pedal stroke.



Spinning improves your stamina allowing you to maintain your heart rate in your favorable range improving your performance. If you increase and train with cadence, you'll improve your cycling efficiency, allowing you to pedal for longer, and faster.

Spinning also is helpful in removing lactic acid buildup in the muscles after hard climbs and hard sprint efforts during a ride.

Bicycle computers with cadence sensors not only measure your distance ridden, speed, max speed, average speed, but your peak, maximum, average and current cadence.

High Cadence versus Low Cadence

Just like with running some people tend to favor fast twitch muscles and some slow twitch muscles.

The calf, thigh, hip and buttocks muscles are some the largest in your body and they are all extensively used during pedaling.

High Cadence can conserve energy in the large muscles by distributing the workload in a pedaling stroke over a shorter period.

High Cadence is great for maintaining speed, and effort over long periods of pedaling. It is also good for climbing when the steepest of hill exceeds your ability to climb it at a low cadence.

Low Cadence can produce more power by engaging the muscles over a long period of time during the pedal stroke but expends more energy.

Low cadence is good for rapid acceleration, if you have the strength it can be maintained just like the high cadence pedaling.

When you pedal faster, you put less strain (i.e. force) on your muscles with each stroke. You ride in a lower gear, and as a result, use your slow-twitch muscles.

These muscles burn fat for fuel, are resistant to fatigue, and recover quickly when allowed to rest. Also, studies show a higher cadence means an increase in blood flow to the muscles – which in turn, means more oxygen in the blood and a higher aerobic performance.

On the other hand, a low cadence at a high gear is more taxing on the muscles. It uses fast-twitch muscles, which burn glycogen for fuel, fatigue quickly, and takes a long time to recover before they can be used again. In other words, muscle strength doesn't last long, so you'll start to feel the burn faster than at a higher cadence.

MANAGING YOUR GEARS DURING A RIDE

Figuring out how to use bicycle gears can also improve your overall efficiency, and most importantly, your enjoyment of cycling!

Gears on a bicycle are there to allow you to maintain a comfortable cadence while travelling at different speeds.

Your bicycle drivetrain is made up of a Chain, Crankset, Chainrings and a Rear Cassette Cogs.



Cranksets can 3X as pictured above having three chainrings, 2X having two chainrings, and 1X having only one chainring.

In addition, the size of the chainrings measured # of teeth also figures into the ability to provide those various gears.

This allows you to access more varied terrain on your bicycle due to the range in gears.

Shifting your Right Brake Lever controls the rear derailleur that select gears on the rear on the rear wheel cassette



Shifting to and pedaling higher up (bigger cogs) on the rear wheel cassette it's easier to ride uphill.



Shifting to and pedaling lower down (smaller cogs) on the rear wheel cassette it's easier to accelerate and go faster.

The Front Crank Chainrings can be shifted from Large to Small but have a opposite result.

Shifting your Left Brake Lever controls the front derailleur that controls the shifting on the chainrings on the crankset.

Shifting to and pedaling in the small chainring (smaller inside chainring) on the crankset makes it's easier to ride uphill.

Shifting to and pedaling in the large chainring (larger outside chainrings) make it easier to accelerate and go faster.

CLIMBING

As you climb a long hill seated try dropping drop your heels on each pedal stroke will increase power and use different muscles in your calves.

Reduced Bodyweight helps when climbing, you can take five pounds off you, that is impossible to take off your bike.

Compact Chainring are best for climbing for the non-professional rider. **Race Crank 53-tooth large chainring and a 39-tooth small ring, compact cranks usually feature 50 large chainring - and 34-tooth small ring.**

While seated you can change working muscle groups while pedaling by slide your butt back on the seat or climb on the drops. Sliding your butt back on your seat can aide climbing while sitting increasing the pushing power on the downstroke.

While you climb seated try kicking and/or pulling your knees up to the bar.

Keep a loose, relaxed grip on the handlebars - don't waste energy.

Keep your momentum as long as you can before you stand.

How to Stand and Pedal

Pedaling while standing is helpful in climbing and relieving muscle fatigue in the legs and butt on long rides.

Video How to Stand <https://www.youtube.com/watch?v=qaYWf441TUA>

<https://www.youtube.com/watch?v=PGufdVNnADY&t=7s>

Note: Standing while riding in group and/or paceline is a skill you need to practice and master. Until you master it signal the rider behind you that you are going to stand by voice, so that they may back off your wheel.

When climbing stand up carefully. Don't throw your bike backwards or hard to the side when you stand up. That could take out wheels behind you. As you approach a hill, anticipate that the rider in front of you may stand up, and give their wheel a little extra space. Remember, the group naturally compresses as it comes to the base of a hill.

Shift to a harder gear: More weight on the pedals makes your cadence jump up when you stand. For this reason, shift down one or two gears before getting out of the saddle. "What you need to do is shift up one or two gears (harder) just before standing up.

Get on top of that gear (downstroke) and then stand up. This will prevent you from throwing your bike backwards into the rider behind you."

- **Stay over the pedals:** Most of your weight should be directly over the pedals when you stand. Avoid moving too far forward or staying too far back.
- **Bend your knees:** Just as you would when seated, there should always be a slight bend in the knees when you pedal standing, even at the bottom of the pedal stroke.

- **Move the bike, not your body:** The side-to-side rocking motion can help generate power but try to rock your bike and not your body to be more efficient.
- **Pull up on the handlebars:** For extra power, try pulling up on the same side of the handlebar as the foot that's pushing down.
- **On the upstroke pull up:** On steep gradients concentrate on pulling the upstroke and letting your weight fall naturally on the pedal during the downstroke (12 o'clock to 6).

When standing ride with rhythm on climb you want to dance on your pedals don't hammer them.

Don't coast after cresting a hill pedal (spin) down helps flush the Lactic acid out of your muscles and avoids you slowing down on the decent and having the pack run up on your wheel causing braking in the group.

Take advantage of the flats leading to or in between to next hill and spin to relieve the burn in your legs.

Pedal Standing vs Standing Rocking

Bike pulling against the bars opposite your power downstroke.

Pull up on the handlebars:

Pulling up on the same side of the handlebar as the foot and pedal that's pushing into the downstroke.

Judge the hills, small roller hills can be top in a by pedaling a hard gear others will require smaller gears to spin over the top.

Hills drain your energy faster so stay fueled.

Cornering and Group Ride Cornering – Video <https://youtu.be/0ed5L2XPav0>

Correct Cornering Positions



Cornering on the Hoods



Cornering on the hoods while this position is more relaxed it has less control than using the drops when encountering sharp rapid left and right turns.

Cornering on the Drops



Cornering on the drops on the bike, flatten your back and forearms as this will lower your center of mass, give you greater stability as well as more control. You will find that your weight lifts off the saddle slightly, your arms push through the bars more on to your front wheel and your bike becomes more front weighted that assists with cornering.

WHEN CORNERING

DO look well ahead as this will give you maximum time to make a proper assessment of an upcoming turn. If there is dirt, gravel, or sand in the turn you must take that into account before you commit to the turn.

DO brake early in preparation for a turn before you get to the turn.

Braking should be before you enter the turn, so scrub any excess speed off in advance. Reason: applying the brakes in the turn will reduce the grip your tires have on the road while cornering. DON'T grab a big handful of brake while cornering this can cause loss of traction

While in the turn DO keep focused on the exit of the corner the point you are riding towards.

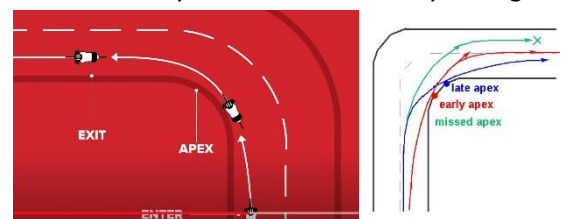
DO stay relaxed, as hard as it sounds. Do not stiffen up.

DON'T take unnecessary risks. There's often much more to lose than there is to gain from going into a corner way too hot and overcooking it.

If you've set up your entry phase correctly, then the execution phase will run smoothly. It starts as soon as you begin to lean your bike into the apex of the corner.

Diagram of Apex entrance and exit Pick a Line Through A Corner.

Keep looking ahead at your chosen line, following it to the exit of the turn, and keep your weight pressed down on the outside pedal.



Coming out of a turn avoid pedaling until the bike is mostly upright to avoid accidentally clipping your inside pedal on the ground this can result in loss of control as the rear wheel may be bumped off the road.

Your bike will naturally want to straighten up as you exit turn.

In Group Ride Cornering with side-by-side riders in a turn, if you are on the inside of the turn, you must hold line in the turn following the wheel of the rider in front of you.

The rider beside you will mimic your line on the outside. You can't drift out as you will push rider beside you to change their line placing them in danger with oncoming traffic. The rider on the outside can't change their line in the turn cutting off the inside rider.



Cornering on the Drops

Cornering on the drops on the bike, flatten your back and forearms as this will lower your center of mass and give you greater stability. You will find that your weight lifts off the saddle slightly and your arms push through the bars more on to your front wheel.

You will ideally be off the brakes, but with your fingers resting lightly on the levers in case you do need to check your speed. Judging how fast you should go is not an exact science, so a small amount of braking can be applied if needed. This should be applied lightly through both the front and rear brakes.

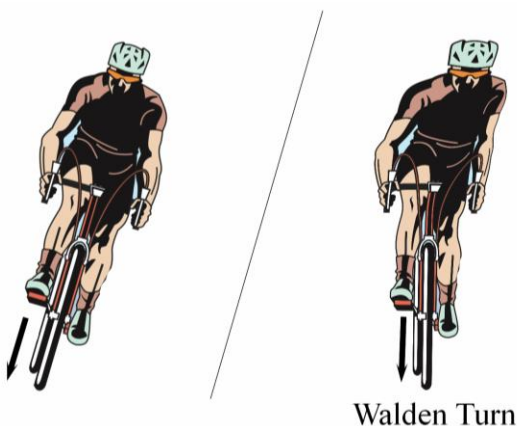
As you begin to exit the corner, keep looking ahead up the road to ensure you spot and anticipate any obstacles or hazards.

Coach Mike Walden Turn

Mike Walden advocated for his turn as it provided for continued pedaling and speed in some turns without the chance of clipping a pedal, increased stability in the turn, keeps the bike more upright as opposed leaning it, can help maintain traction in corners where debris or water may occur.

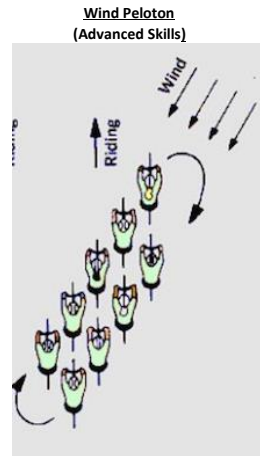
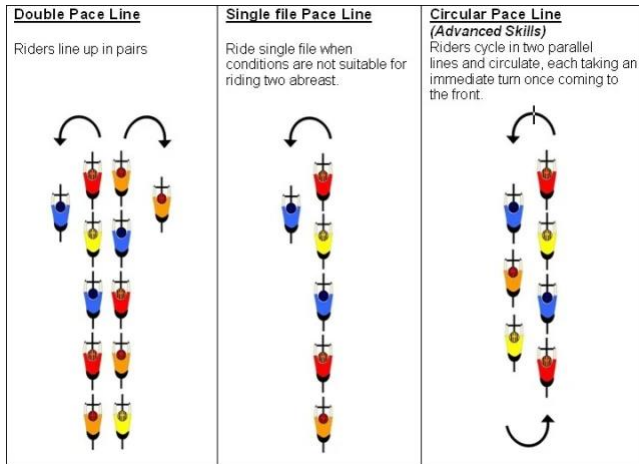
The Walden Turn takes practice and will feel awkward until you master it.

Diagram shows the essence of the turn.



Walden Turn

PACE LINE RIDING



There are three basic rules to paceline riding:

1. Don't do anything suddenly.
2. Don't do anything suddenly!
3. DO NOT DO ANYTHING SUDDENLY!!



The **single pace line** is the ideal technique for groups with six riders or fewer, or on roads where riding two-abreast isn't suitable.

Turns on the front are usually longer than with the 'through and off' technique, which allows a greater recovery time. Time spent in the wind depends on the skill and stamina of the rider. A stronger rider may do 60 seconds; a weaker rider may do 20 seconds.

Some amount of movement in group ride is expected to avoid debris, chuckholes, and other road conditions this will cause a paceline to snake from side to side from time to time but try to maintain a good line.



When riding in a **double paceline riding** straight is even more important as the group is occupying the entire travel lane on the road. There is less room for riders in the group to maneuver.

When the road allows, you will usually be riding two-abreast in a double pace line. This allows everyone behind the two leading riders to shelter from the wind.

If you're riding on the front, keep your speed as smooth and controlled as possible because everyone is riding close to one another. This means no grabbing handfuls of brake or fast accelerating, particularly out of corners. Always have your hands covering the brakes, either on the hoods or the drops

The front riders are responsible for warning the group about upcoming hazards (such as potholes), approaching cars, corners, or junctions. The signals should pass all the way back through the group.

When on the front, make sure you always let the rest know if you slow down or brake.

Rotating or Circular Pace Line is a flowing machine consisting of a fast line and slow line. It's a lot like a double pace line, except that riders continually rotate. Before starting, it's essential you agree which side to move up the group (usually on the right or outside).

Once a rider finishes on the front, they will pull out of the pace line and fall back down the line, without easing off the pedals completely. Once the former lead rider has dropped back level with the rear of the group, you must remember that 'last rider' position that was in front of you before sliding in into the pack of back. You then slot in behind them without overlapping wheels.

In the line, each rider stays on the wheel of the rider in front until they peel off. At this point, the rider will need to increase their effort in a smooth and consistent manner to maintain the speed of the previous rider.

Both techniques require excellent teamwork, trust, and cooperation. Once mastered, riders become valued cogs in a satisfying high-speed, mile-swallowing machine.

Taking A Pull at the front by taking short turns at the front and moving off.

You should not speed up but maintain the speed of rider who has pulled off in front of you. The rider that has pulled off the front should slow down by easing off the pedals slightly. This permits the fast rider to move over and call 'clear wheel' when there's space to slot in front of them.

The rider who was behind the fast line rider will then do the same, pulling through then easing off once in the slow line.

Turns on the front are brief, lasting between 5 and 10 seconds depending on the speed of rotation.

Turns on the front are better with the 'through and off' technique, which allows a greater recovery time. Time spent in the wind depends on the skill and stamina of the rider. A stronger rider may do 60 seconds; a weaker rider may do 20 seconds.

RIDING IN FRONT

The cyclist(s) at the front bear the burden of pace setting, determining traffic safety at upcoming intersections, calling out road hazards, and much more. In a way, the safety of the entire group rests on the shoulders of whoever is up at the front.

When moving to the back you should check behind you to make sure that you are not being half wheeled. Then proceed safely out of the way announcing to the cyclist behind you by a simple elbow flick will indicate that a rider is done "pulling" (riding on the front of the pack) and that they intend to pull off to the side and slot into the back of the group.

Never stop pedaling when finished pulling as it creates an accordion effect throughout the entire peloton. Keep a steady pressure on the pedals and slowly move over. Pedaling allows you to be able to slip into the draft again and if you are not pedaling you could get caught watching the group ride off into the sunrise without you.

You should stop pulling and move to the back while you still have a little left so you don't get dropped. When taking a turn pulling on the front, DON'T drop the hammer immediately.

Pull through steady. Keep the pace where it was for a few meters before increasing your speed. When at the front you should constantly check behind you to see if the group is still in your draft.

Ride within yourself. Overdoing it on the front can send you flying out the back after pulling off if you don't recover in time to hold the wheel. The group goes faster if riders leave the front before fatigue causes their speed to drop. As before, the front rider is driving the pace along in a smooth and consistent style.

NO HALF WHEELING

Half Wheeling occurs in a Double Paceline when you are pulling on the front in a group ride where everyone is two by two down the line, and you don't hold a steady pace.

When one of the two cyclists up front speeds up just a bit – about a half a wheel – faster than the cyclist next to him than the other counters and goes back and forth ever increasing the speed and breaking the group to where people drop off the back.

Don't do half wheeling. Match your pace and pedal stroke to rider next to you to keep it steady. If 14 mph was the ride's agreed to pace work to keep it.

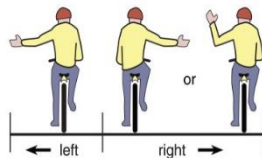
Group Riding Communications, and Hand Signals

- Riders must communicate to the Pack ALL TURNS. Don't assume everyone knows the route.
- Riders relay commands back from the front through the pack to the rear.
- Anticipate Traffic Signal Changes. Command STOPPING ON GREEN.
- RIDERS BACK = Caught by Light/Off the Back of Pack.
- Riders Back, SOFT PEDAL to slow the pack or make a HARD STOP to regroup, if traffic permits. Don't make them chase.
- MECHANICAL = Flat, Dropped Chain/Water Bottle/Misc. slow and pull off to right of the road or go to sidewalk/grass, if available.
- RIDER DOWN = Rider has crashed, slow and pull off to right of the road or go to sidewalk/grass, if available.
- Hand Signals alert riders to the following:

- Stopping or Slowing
Traffic Signs/Lights



- Right Turn & Left Turn



- Pointing to Road Hazards
Cracks, Sand/Gravel, Rocks,
Branches, and Potholes



- ANNOUNCE TRACKS to the PACK or **waving your hand from side-to-side point at the ground.**
- Railroad Tracks crossing the Road and Trail must be crossed at as much of a perpendicularly 90° angle as possible to avoid your front or rear wheel being caught.

