PACELINES

General Overview & Guidelines

GROUP RIDES • PERFORMANCE IMPROVEMENT • INSPIRATION • FRIENDSHIP

Definition:
Cyclists ride in a single file line and take turns at the front; also known as "drafting". Two or more riders can constitute a pace-line.

Overview:
Drafting is more efficient than riding alone because the person up front, or at the head of the pace-line is breaking the wind and, in effect, allowing those behind to ride in a condition of lesser resistance. This can result in energy savings upwards of 30% at higher speeds; the faster the pace-line is going the greater the energy savings compared to those who ride alone.

Pace-line rides are fun because a group of riders can cover a distance faster than any one rider in the group could do by him/her self. If some riders are stronger than others, they can do more of the work and help out the less fit/strong riders. The less fit/strong can "sit in" and take fewer or no turns at the front.

General Guidelines:
1. Ride smoothly; settle into a speed that will work over the entire distance to be covered.
2. Keep your level of effort the same *(which means you will go a bit faster downhill and a bit slower uphill)*. When it is your turn at the front, known as "pulling", **do not change the pace.**
3. Keep things fluid and not jerky. Ride in a straight line and do not wobble or weave. Do not make rash and sudden moves or brake hard. Point out road debris to those behind.
4. Follow between 6 inches (experienced riders) and 20 inches from the wheel in front of you. In a pace-line do not use aero-bars *(special bars that attach to, and extend in front of, your handlebars – used for time trialing)*, as one's control in braking is not good in this configuration.
5. For slight changes in speed, continue to soft pedal and slightly feather the front brake – this way braking or slowing down is smooth.
6. Do not stay up front for very long, usually 15 to 60 pedal rotations – depending on the number of riders in the pace-line.
7. In most cases, **do not overlap the wheel in front of you**.
8. In a cross-breeze, "pull" from the side of the lane that is closest to the wind, this allows the formation of an "echelon" – each rider slightly overlapping the rider in front of him/her to leeward (down wind). This provides a greater advantage and reduces wind resistance.
9. When moving to the front to pull, do not make any sudden adjustments in speed. Ride at the prevailing speed and gradually adjust the speed incrementally.
10. If you are overly fatigued or otherwise unable to keep the pace when your turn comes to pull at the front, stay on the front for 10-15 pedal turns to allow the previous leader to drop back and reintegrate into the pace-line, then drop off the front. This is much safer (only one rider at a time will be overly exposed to traffic riding two-wide while dropping back) and less confusing to the riders behind you.

— See next page for more detailed overview —

PACELINES
HOW TO RIDE IN A GROUP*

GROUP RIDES • PERFORMANCE IMPROVEMENT • INSPIRATION • FRIENDSHIP

The essence of group riding is riding the paceline. It allows cyclists to travel faster with less effort and provides a better social experience. It is also an extension of "drafting," a fundamental skill used for most types of racing. Pacelines do have some inherent danger and require communication among the riders. But a good paceline is a wonderful thing.

The basic **SINGLE** paceline is simple. The riders align behind one another to take maximum advantage of the "drag" effect of the cyclists to the front. The cyclist in the front will set the group's pace, when the lead rider decides it is time to change, that rider pulls off to one side and drifts back to the end of the paceline.

The new lead cyclist increases effort **SLIGHTLY** *(just increases the amount of pressure on his pedals)* to account for the increased wind resistance he will face, allowing him to maintain the group's pace. A good paceline is smooth. A good paceline is built on trust. The riders have to be confident that the others in the group will communicate well and ride safely.

Which direction should the lead rider pull off? The single pace line picture at right shows the rider pulling off to the left. But there are various reason to pull off either direction. If there is a cross wind the lead rider will pull off whichever direction the wind is coming from. This is because the riders in the single paceline will naturally line up as shown in the **"echelon"** picture to hide themselves from the wind. Some believe that the rider coming off the front and going backwards should not be in the lane of car traffic and should, as a general rule, pull off to the right. Basically, whichever direction the group is using, all riders should do the same thing.

The **DOUBLE** paceline is a minor modification of the single paceline. In this setting there are just two single pacelines side by side. The riders on the front of each paceline pull off in opposite directions. As a general rules, the pacelines are far smoother if the two front riders agree and pull off simultaneously. Otherwise, one of the lines has to surge to get the front riders side by side.

A **ROTATING** paceline requires more focus and greater skills but is very satisfying to be part of. In a rotating paceline there is an advancing (faster) line of riders and a retreating (slower) line of riders.

The "retreating line," the line of cyclist floating back, is on whichever side the wind is coming from. If it is a headwind, a tailwind, or no wind, usually the retreating line will be on the right side and the advancing line will be on the left. *(The opposite of the picture above).*

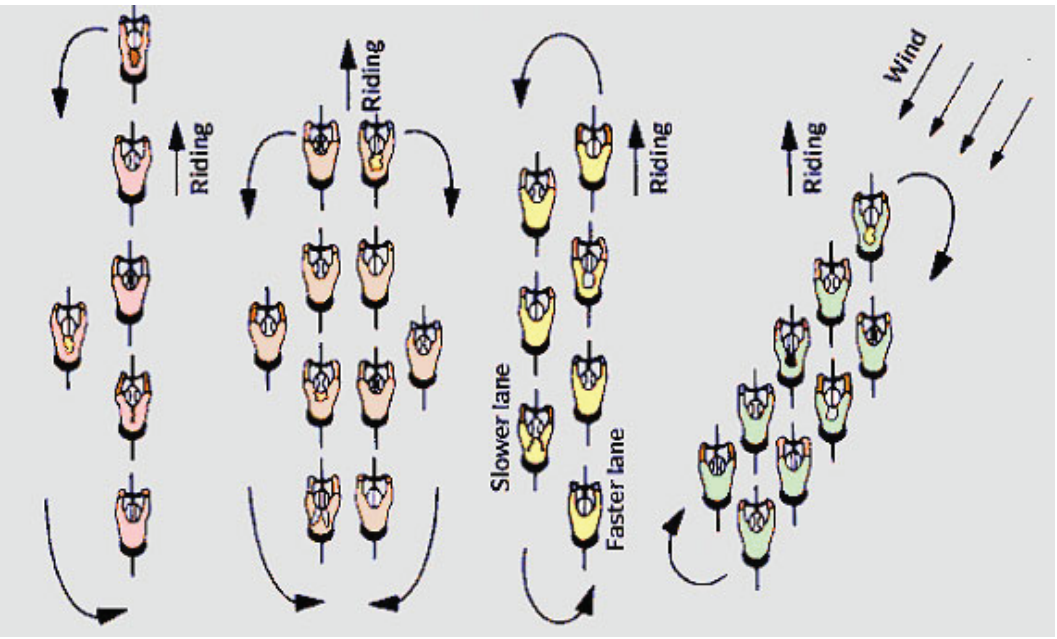
The key to a rotating paceline is that when the rider at the front of the advancing line clears the rider who is on the front of the retreating line, the advancing rider moves into the retreating line and softens up his pace. The rider who was behind him continues the pace of the advancing line until that rider switches over. The rider in the advancing line should NEVER surge. The idea is that you ride to the front and float to the back in a constant rotation. You change your speed by "soft-pedaling" as you switch to the retreating line and increasing your pedal pressure as you switch from the retreating line to the advancing line.

Smooth switches, and keeping the distance between the riders in the paceline as small as possible will keep the paceline smooth.

An ECHELON is a paceline ridden in a crosswind. The riders will naturally find cover at an angle as shown above. An Echelon can refer to either a single paceline or a rotating paceline. In either case, the lead rider will pull off INTO the wind.

TYPES OF PACELINES

SINGLE DOUBLE ROTATING ECHELON



** Adapted from Bicycling Street Smarts: by John Allen, drawing taken from the book.*