

INAUGURAL WOMEN'S **TRACK CYCLING CLINIC**

PRESENTED BY:
DEE DEE SCADRON



*A friendly environment and a positive experience
To introduce ALL Cyclists to track cycling*

THEN AND NOW

1920's



William "Torchy" Peden

(3rd from the top)

Famous 6-Day Rider from the 1920's and 30's
Northbrook Resident & Genuine Booster of Northbrook Bicycle Club



CHICAGO STADIUM

Built for 6-Day Bicycle Racing and Boxing
"Famous 6 Stadiums" NYC, Montreal, Detroit, Chicago, Boston, Philadelphia (???)

2004



Erin Mirabella

2004 Olympian
Athens, Greece

Erin started her racing career on the Northbrook and Kenosha Velodromes



Athens Olympic Velodrome

'And the Crowds roared'

Courtesy of Dee Dee Scadron

TRACK BIKE – ROAD BIKE

FRAME	TRACK BIKE	ROAD BIKE
Frame Size	1cm Smaller (due to BB height)	
Rear Drop Outs	Face Back	Face Forward
Bottom Bracket	1-2cm higher, pedal clearance	Lower for stability
Head / Seat Tube	75* – 76* for quick response	72* – 75* f
Wheel Base	36" – 37"	38" – 39"
Fork Rake	35mm – 38mm	40mm – 46mm
Chain Stays	38 – 39 cm	40cm

COMPONENTS	TRACK BIKE	ROAD BIKE
Wheels	Single Speed	Multi-speed Freewheel
Tires	Tubular, glued on	Clinchers
Gearing	Change with chain ring / cog	Change with derailleurs
Handlebar / Stem	Narrower, deeper drop	Wider, shallow drop, comfort

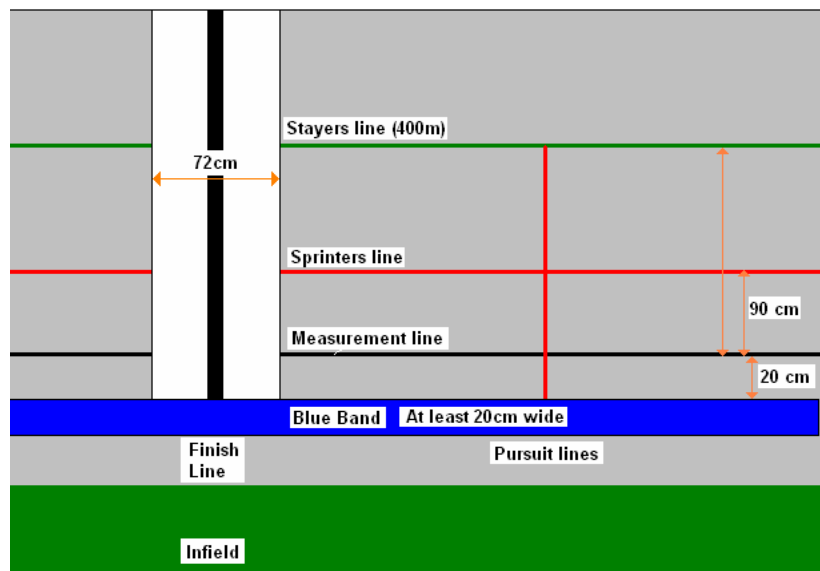
POSITION	TRACK BIKE	ROAD BIKE
Seat Height	1 – 3 cm higher "Perched"	Comfort
Seat / BB	5 – 6 cm behind BB = Higher RPM's	Further back = Power
Handlebars	Lower, power / leverage	Comfort





Drawing Courtesy of Carl Wilkins

TRACK LINES MARKINGS



Description by Dee Dee Scadron – From UCI web site

BLUE BAND OR COTE D'AZURE

The wide blue band at the bottom of the track represents "out of bounds". During races riders may not advance on or below the blue band.

POLE LINE OR MEASUREMENT LINE

The inner edge of this black line, which runs around the entire track, is the point from which the Velodrome is measured.

SPRINTER'S LINE

The sprinter's line runs parallel to the black measurement line. This area marks off the zone referred to as the sprinter's lane. In the final 200 meters of a sprint, if the lead rider is below the red sprinter's line, other riders must pass above the rider who is in the sprinter's lane.

STAYER'S LINE OR RELIEF LINE

Midway up the track is a blue line named the Stayer's line. The Stayer's line serves as a guide to riding zones during training or general riding sessions. Cyclists riding at slow speeds stay above this blue relief line, while faster riders move to the lower half of the track. Be sure to leave a lane open on top.

FINISH LINE

Just before the turn one, is a black line in the middle of a 72 centimeter-wide white strip. This distinct strip serves as the finish line for many track events.

200-METER LINE

Indicating 200 meters to the finish line, this black line is just after turn 2. The official purpose of this line is for sprint timing.

PURSUIT, KILO, 500M, START/FINISH LINES

In various locations around the track are the start / finish lines. Finish line for all distances, is in the middle of the straights.

TRACK RACES

MISS-AND-OUT

Miss-and-Out or “Devil Take the Hindmost” Is one of the most exciting track races to both compete in and watch. On each lap the last rider across the start/finish line is removed from the race. In this race all the action is taking place in the back of the field instead of the front.

The Miss-and-Out is a very tactical race. A strong rider could be pulled from the race because he was riding in the wrong position. Generally, the race goes on until three riders are left. At this point the survivor’s are given a free lap followed by the bell lap. The finish order in the final sprint will be judged by the leading edge of the front wheel.

UNKNOWN DISTANCE

A variation of the scratch race is the Unknown Distance Race. The chief official chooses the distance. The event is full of suspense and sometimes surprises for both the rider and spectator. The competitors may cruise around the track waiting for the bell to sound to make a mad dash to the finish line or take a gamble, and increase their pace. Some may jump off the front hoping to hear the bell. But it is only upon the sounding of the bell, which indicates the final lap that the racers know how long they are racing.

POINTS RACE

To the novice, a points race may have no semblance of order than rush hour on the freeway. The race is designed to test a rider's skill at knowing when to sprint, when to attempt to lap the field, or when to conserve energy by resting in the field.

In this mass-start event, the competitors sprint for points normally every five laps. The first four riders shall be awarded points in order of finish as follows: 5 points, 3 points, 2 points, and 1 point.

SCRATCH RACE

The scratch race is the easiest track race to understand. The race could be short or long. The winner is the first rider across the finish line on the last lap. Endurance riders will try to drop the sprint riders, or those riders with the ability to ride at a very high pace for a short period of time. In general, the riders with strength in both endurance and sprinting will do the best. A tactics used by the sprinters would be to control the race and draft other riders until the final sprint.

KILOMETER & 500 METER TIME TRIAL

Men ride 1,000 meters or ‘kilo’ and women ride 500 meters against the clock

One of the fascinations for riding these events comes from the blending of speed and endurance

MATCH SPRINTS

No championship track event displays as much variety, excitement, and strategy as the match sprint.

Throughout the race, the riders cautiously stalk each other looking for any tactical advantage. Since a majority of sprinters consider the lead a disadvantage, many will attempt to reverse their role sometimes causing the race to come to a complete stop.

While the first part of the match sprint may seem deliberate, the conclusion is always unpredictable and exciting. As the bell rings on the final lap, the riders commit to their strategy of speed and finesse with the final 200 meters of action leaving the crowd and the riders breathless.

The 200-Meter TT is used to seed riders for sprints. In a Championship format, riders will be seeded fastest against slowest.

TEAM PURSUIT

Just as the name suggests, the pursuit is a chase. The Team Pursuit is made up of two or more riders although four person teams are the most traditional. The cyclists share the workload by alternating the lead position. This way the other 3 members get some relief in the draft of the lead rider. The changing leaders will swing up the track and back down using the banking to catch onto the back of their teammates after they pass underneath.

INDIVIDUAL PURSUIT

This name suggests the chasing of a single rider. The riders begin on opposite sides of the track and continue until one catches the other or until a specified distance is covered; 4000 meters for the Senior Men; 3000 meters for Women and Junior Men; 2000 meters for Junior Women.

Similar to the kilometer, pacing and strategy are as important as power and speed. Some riders will set a blazing pace early in hopes of psychologically disarming their opponent, thereby gaining the upper hand. Others will bide their time gathering speed to unleash a strong kick over the final 2 or 3 laps.

KEIRIN

Keirin means "competitive wheels" in Japanese. Riders are lined up behind a motorized bike, which is the pace vehicle for the 6 lap race. As the race progresses, the pace vehicle will slowly increase the speed. Although the riders may not pass the pacer, they are free to jockey for position behind him. With about 400 meters to go, the motorized bike swings off of the track and its every rider for him/herself in a bobbing, weaving, high speed sprint.

ITALIAN PURSUIT – TEAM SPRINT

The Italian Pursuit and Team Sprint is similar to the Team Pursuit in that it is for two teams. Whoever the Italian Pursuit is made up of four or five riders and has an unusual twist. The teams begin on either side of the track. The front rider leads for one lap then pulls up track, leaving the next rider continuing the competition in successive order until one rider is left on the track. The last rider from each team sprints for the finish. The first rider across the line wins. The strongest rider will be last and it is a one-ride event.

Racing - Track Etiquette and Safety

**95% of the following - Without permission from Roger Young's Track Training Manual
Roger is Director at the ADT Velodrome in California, Home of the 2005 UCI World Championships**

Riding safe should be your first priority. Always ride as if the other riders of the track have the right-of-way. Be polite. Be friendly. Obey all the velodrome's rules. Here are some usually un-written guidelines of racing and training on the track:

1. Keep all bicycles out of the ropes. Do not hook the handlebars on the ropes. This creates a dangerous situation.
2. Never cross the track while a race is in progress. Wait until the race has ended before crossing the track. Always look before crossing the track, as slower riders may still be finishing a race.
3. Do not use profanity, racist, anti-Semitic, or similar language while at the velodrome. USCF officials enforce a no-tolerance policy regarding this issue
4. The faster rider is responsible for passing safely. Slow riders are responsible for riding straight allowing faster riders to pass predictably. NEVER get out of the way of a faster rider. Maintain a straight line.
5. Except for entering the track from the apron, the area from the pole to the lower stayers line is reserved for fast riding.
6. Between the stayer's line is reserved for slow (or recovery) speeds. Never ride more than two abreast while going slow.
7. From the top stayer's line to the top of the track is reserved as an emergency lane and for riders accelerating or doing flying starts. If you hear 'rail' be sure there is enough room for riders coming over the top
8. Turn your head in the direction you want to move and glance back as you gradually move up or down the track paying attention to where you're going and over-taking traffic at the same time.
9. As you approach a slower rider with their head turned in the direction you want to pass, sound off with the command "STICK" in order to make the slower rider keep from moving into your passing line.
10. If you hear "STICK" ride straight (parallel to the pole line.) If you are maneuvering and hear "STICK" correct your line so you're riding straight (parallel to the pole line.)
11. If you are going to practice standing starts in the pole, ask permission from everyone on the track.

YOU ARE DIRECTLY RESPONSIBLE FOR THE SAFETY OF ALL OTHER RIDERS ON THE TRACK, PAY ATTENTION TO WHAT OTHER RIDERS ARE DOING AND GIVE THEM THE RIGHT OF WAY.

Please Note:

Etiquette will change from track to track, due to configuration of that track.

It is your responsibility to learn the 'Local Etiquette'

TRACK BIKE MECHANICS

• TIRE PRESSURE

Push against the tire with your thumb and see if you can push it in. If you can you need more air pressure. Generally, the tires on a track bike should have 110 – 120 PSI for clincher tire and 140 – 200 PSI for tubular tires.

• BOLT CHECK

Check the tightness of the bolts on the bikes. The general areas to check are the handlebars, cranks, wheels, headset and seat. Check these areas by purposely trying to move each out of their original position. If any of these parts move or rattle you should tighten the bolt.

• CHAIN TENSION

Proper chain tension for fixed gearing is important. If the chain is too loose, it will rattle and may fall off the chain ring. There should be approximately a half-inch of play in the chain. To check the chain tension, hold the rear wheel off the ground and spin the cranks slowly. There shouldn't be any popping, and it should run smoothly. If this is not the case, you must adjust the rear wheel to correct the tension.

CHANGING GEARS

• CHAIN RINGS

Chain Ring Bolts thinner
144 or 151 BCM
3/32" or 1/8"

• REAR COGS

3/32" or 1/8"

• LOCK RINGS

Left hand threaded
Keeps cogs from unwinding

• CHAIN

3/32" or 1/8"

Courtesy of Dee Dee Scadron – Pic's courtesy of www. BusinessCycles.com

TRACK EQUIPMENT



Courtesy of Dee Dee Scadron and the 'Math Wizz What's His Name!'

GEAR CHART

Rear Cog	44	45	46	47	48	49	50
13	91.4	93.5	95.5	97.6	99.7	101.8	103.8
14	84.9	86.8	88.7	90.6	92.6	94.5	96.4
15	79.2	81.0	82.8	84.6	86.4	88.2	90.0
16	74.3	75.9	77.6	79.3	81.0	82.7	84.4
17	69.9	71.5	73.1	74.6	76.2	77.8	79.4
18	66.0	67.5	69.0	70.5	72.0	73.5	75.0

$$\begin{array}{r} \text{Chain Ring Teeth / Cog Teeth} \times \text{Wheel Size} = \text{Gear} \\ 45 / 14 \times 27'' = 86.8'' \end{array}$$

PICTURE PERFECT !



SARAH ULMER – New Zealand
2004 OLYMPIC PURSUIT CHAMPION
WORLD RECORD 3.24.537

Paceline Riding Etiquette

FIRST RIDER IN THE PACELINE

- **Maintain a steady pace.** Going faster will open gaps; going too slow will bunch up the group causing dangerous overlaps.
- Ride at the front for one or a half lap. This is called taking a pull.
- Before swinging off, the first rider should do two things; glance over their right shoulder to check if the track is clear and flick their right elbow to alert the other riders that they are pulling off.
Caution: When glancing back be careful not to turn the handlebars.
- Clear the lead position gradually, as you move up to the stayer's line, let the bike slow
- Ride on the stayer's line until the last rider in the line is below you
- Gently drop down the track banking, the banking of the track will automatically increase your speed. This will take practice.

SECOND RIDER IN THE PACELINE

- Help the first rider maintain the speed. Tell her when she is speeding up or slowing down, this is the job for the second rider. The rider will call out the following terms to the leader: **STEADY** - if the pace is too quick, **UP** - if the pace is too slow, and **GOOD** - if the pace is just right.
- Prepare yourself to take the lead. Make sure you do not overlap wheels especially to the outside. Be careful not to follow the lead rider when he/she starts to pull off.

OTHER RIDERS IN THE PACELINE

- Ride as smoothly as possible to insure the rest of the paceline rides a straight line.
- Remember to look beyond the person in front of you.
- If a gap develops, close it gradually. If you find yourself coming up too quickly on the next rider, float slightly up track or to the right until it is safe to come back behind the rider you are following.
- If there is an accident, lead the riders behind you up track (to the right).

GENERAL TRACK TRAINING

EVENT	LOW END ACCELERATE	HIGH END SPEED TOP END SPEED	ENDURANCE DURATION OF TOP END	TECHNIQUE
GENERAL Gears Speed 0 – 12” Below Power 0 – 4” Above	Jumps slow entry Jumps fast entry	200M Sprint W/ 2 lap wind up	Flying Laps	Transitions, Stand-Sit Moving up/down track
SPRINTER Gears Speed 0 – 12” Below Power 0 – 4” Above	Jumps slow entry Jumps fast entry	200M Sprint W/ 2 lap wind up Motor sprints	Flying Lap Fly Lap w/motor lead out	Transitions Creeping/standing Moving up/down track
500 M TT Gears Speed 0 – 12” Below Power 0 – 4” Above	Jumps slow entry Jumps fast entry	200M Sprint W/ 2 lap wind up Flying Lap Flying lap W/ Motor	Flying lap w/speed Standing Start 1 – 2 Laps Flying Laps W/ Motor lead out	Standing Starts Transitions
PURSUIT Gears Speed 0 – 12” Below Power 0 – 4” Above	Jumps slow entry Jumps fast entry	200M Sprint W/ 3 laps Flying Laps Flying Laps W/ Motor	Flying 2–3 laps On / Off Motor laps	Standing Starts Transitions
POINTS RACE Gears Speed 0 – 12” Below Power 0 – 4” Above	Jumps fast entry	200M Sprint W/ 3 laps Flying Laps Flying Laps W/ Motor	Flying lap On / Off Motor laps	Transitions Moving up/down track

PERFECT YOUR TECHNIQUE STANDING START

RACE DISTANCE	HIPS	SHOULDERS ARMS	HEAD	BACK
<p>Start – 30 M</p> <p>Begins before you get on your bike</p> <p>Bike check</p> <p>Which pedal forward and location</p>	<p>Over BB 1st 3-4 pedal strokes</p> <p>Power position & puts weight on rear wheel</p> <p>Hips start to move forward as speed increases</p>	<p>Slight bend in arm, wrists in natural position</p> <p>Keep shoulders squared Helps to ride straight line</p> <p><i>“Dead Lift”</i></p>	<p>Always keep head up!</p> <p>Helps prevent injury / strain to lower back</p> <p>Look where you want to go!</p>	<p>Parallel to ground</p> <p>Handlebars must be low enough to get position,</p> <p>If not:</p> <ul style="list-style-type: none"> -Back rounds out -Arms bent too much -Head drops
<p>30 – 150-200 M</p> <p>Acceleration phase</p> <p>Stay standing until on top of gear (~90% max speed)</p>	<p>Hips move forward as speed increases</p> <p>Less weight / rolling resistance on rear wheel</p> <p><i>Think: “Runner coming out of the starting block”</i></p>	<p>No change</p> <p>Keeping square will prevent ‘rocking’ bike</p> <p><i>Think: “Steam engine train wheels”</i></p>	<p>Keep head up!</p> <p>Look ‘down track’ for your line</p>	<p>Don’t let back round out</p> <p>Keep shoulders back</p>
<p>TRANSITION</p> <p>Transition from standing to sit</p> <p>Complete <1.0 seconds</p> <p>Keep movement smooth</p>	<p>PULL BIKE FORWARD TO SIT!</p> <p>DO NOT MOVE HIPS BACK TO SIT!</p> <p>30cm difference</p>	<p>First time position changes</p> <p>Push hands forward which will pull the bike under your hips</p> <p>Move hands to final position</p>	<p>Keep head up!</p> <p>Keep sight line</p> <p>Helps maintain centerline</p>	<p>Keep back flat!</p> <p>When seat comes underneath, your hips are in position to sit</p> <p>Snagging shorts</p>
<p>TOP SPEED</p> <p>Polish off speed (4-8mph increase)</p> <p>Race plan gives target speed</p> <p>Stay relaxed</p>	<p>Un-weight feet = max RPMs</p> <p>Do not rock!</p> <p><i>(Eventually learn how to use upper body for leverage for 200m & 500m)</i></p>	<p>Aero bars</p> <p>Practice, practice, practice moving onto bars</p> <p>Drop bars:</p> <p>Move hands into hooks (<1”)</p> <p>Move one hand at a time to start</p>	<p>In the turns, head drops a little but will tilt towards right shoulder</p> <p>Allows better sighting</p> <p><i>“Look over top of glasses”</i></p>	<p>Keep back flat</p> <p>Flat back keeps diaphragm muscle unrestricted</p> <p>ALWAYS ride with the best POSITION and TECHNIQUE</p>

PICTURE PERFECT PACE LINE !!!!



**AUSTRALIA TEAM PURSUIT
2004 OLYMPIC CHAMPIONS
3.58.233 (60.445 kmph / 37.75mph)**

A NIGHT AT THE RACES

PRE-RACE MEAL

Races start at 7:00 – What do you need to eat and when, to give you the fuel for the evening?

GEAR BAG

Be prepared!! ALWAYS have tights, jacket, even if it is 90*
Packing list and check each item

EQUIPMENT

Check your equipment after each session and fix it immediately
Do not wait until race night for mechanical assistance.

CAMP SET UP

Define your space, know where everything is
Chair, trainer, bag, bottles/food

WARM UP

KEY: Must get your HR up to race tempo during warm up
From your training log, write your 'recipe' for your warm up
How long (time) in a pace line
How many jumps, long efforts
Total time required

Between races, keeping warm

RACE NIGHT NUTRITION

Racing starts at 7:00, what / when do you need to eat your pre-race meal, to fuel you for the evening?

Sip on a gel, nibble on a bar, fruit

Sip water constantly

After racing, within 40 – 60 minutes, eat a light meal

COOL DOWN

10 – 15 minutes on the wind trainer after your last race,

Very low resistance

RPM's – Start at 80 – 85, gradually slow to 60 – 65

When am I cool?

HR down to 60%

Legs feel lighter, not tight

END OF THE EVENING

Find the positives

Where you need to improve?

What did you do really well?

HAVE PHUN!!!

PACKING CHECK LIST

EQUIPMENT		CLOTHING	
	Track Bike		Helmet
	Race Wheels		Skin Suit
	Back Up Wheels		Tights
	Wind Trainer / Rollers		Jacket
	Pump		Base layer
	Chair		Warm Base Layer
			Socks
	Medical Information		Shoes
	Contact List		Glasses
			Gloves
			Chamois Crème
			Extra skin suit
			Race Number
TOOLS		NUTRITION	
	15mm Box Wrench		2 Bottles, 1 Water, 1 Electrolyte
	5mm Alan Wrench		2 Gels
	6mm Alan Wrench		2 Bars
	Chain Rings / Cog		1 Banana
	Disc Wheel Pump Chuck		Fig Newtons
	Small Parts		After Race Snack
	Safety Pins		Plans for After Race Meal
	Other Box / Open Wrenchs		

Track Chat

Apron	The flat area around the infield just inside and below the banking or racing part of the track.
Attack	To go at a faster pace in order to get away from a rider or group of riders.
Banking	The steepest area of the track.
Blocking	To get in the way or slow down another rider for someone else's advantage. Often used as a team tactic for a teammate who is in a break.
Box	A situation where opponents surround a rider.
Break	A rider or group of riders that leaves the main group behind.
Bridge	To leave one group of riders and join another group that is further ahead.
Category	The USCF divides the abilities and/or experience of riders into smaller groups or category. Categories are beginner; 5, novice; 4, sport; 3, expert; 2, and elite; 1.
Chasers	Those who are trying to catch a break or a lead rider.
Drafting	Riding in a pocket of moving air, a slipstream created by the rider in front.
Field	The main group of riders. Also known as the pack, bunch, or peloton
Fixed gear	A direct drive chain and cog set up in which the rider cannot coast or shift gears.
Flyer	A surprise attack, usually done alone.
Gap	The distance between a group and individual riders.
Hammering	Riding hard, going all out.
Hand sling	Form of changing partners in a Madison Race.
Hook	A turn up track cutting off another rider's path.
Jump	A quick acceleration usually developing into a sprint.
Lead Out	A type of sprint when the first rider leads a second rider well into a sprint giving the second rider the advantage of sitting in.
Paceline	A string of riders who alternatively ride at the front and sit in.
Pack-Peloton	The main Group of riders.
Pole	Area on the track between the measurement line (black) and the Sprinter's line (red).
Prime	A sprint for prizes within a mass start race. (<i>Pronounced Preeme</i>):
Pull	To take a turn going hard at the front of the field.
Sitting-in	To occupy a position in a pace line other than the lead.
Sprint	Final burst of speed for the finish line.
Track Stand	A maneuver in match sprint event where neither competitor wants to lead out, resulting in both riders balancing their bikes in order to stop on the track.

APPLIED ON TRACK

PACE LINES

DEMO PACE LINE

- 2 – 4 riders demo pace lines – Leader comments on each rider's responsibility
(Refer back to pace line etiquette)
- Riding smoothly – evenly spaced – looking / watching ahead
- Exchanges – flick elbow – look for clearance – move up track – move down back in

RIDER ON FOOT WALK THRU

- Demo riding pace line on foot (Set up 6 cones to simulate track)
Review speeding up / slowing down (chain reaction) exchanges
- Split riders into groups of 3-4
Walk thru pace line (LEADER steps in to speed up / slow down)

ON BIKE

- In same groups of 3-4 (max 8 groups)
16-18 MPH max speed
Practice pace lines, exchanges,

**N'OUBLIEZ PAS!!!
STICK!!**

ACCELERATIONS

DEMO ACCELERATIONS

- 2-3 Individual riders – Leader comments on each rider's position
- Jumps
Where on the track
Total Position on the bike
- Standing Starts
Review position (Refer to 'Standing Start' page)
Always stress POSITION to minimize injury

ON BIKE

- Riders spread out (suggested max 5 riders / pair of eyes)
- Jumps
All riders go thru motion of jump on flat – NO ACCELERATION 2X each
All riders go thru motion of jump on banking – MINIMUM acceleration
- Standing starts
All riders go thru motion of start
Group / Thursday night start
Standing start for Kilo / 500m / Pursuit

SKILLS / DRILLS

DEMO SKILLS

- 2 Riders
Hands on
Each rider left / right hand on lower back of partner
- Hold hands
Each rider hold hands with partner on both sides
Hand sling (do not let go)

ON BIKE

- No more than 6 groups for first time
- Hands on
- Hold Hands
- Hand Sling