COACHING

OFF ROAD RIDING

techniques and tips

How to:
Ride smoother,
faster
& safer

What to;
eat,
drink
& how to think

A riding manual for Motocross, Cross Country, Enduro and Trail Riders of all abilities

Kiwi Rider Coaching is Supported and approved by Motorcycling New Zealand

INTRODUCTION

Riding dirt bikes is awesome! There is nothing quite like the thrill of a getting on a dirt bike and roosting around your favourite track or riding area.

However to get the most from your riding, there are a few things you should know. This manual contains information to help improve your riding, whether you be a casual weekend trail rider or a serious Motocrosser seeking National titles.

GENERAL INFORMATION

GEAR UP
Always wear the correct safety equipment, even if you are just riding on a farm bike. A snugly fitting helmet is absolutely vital. Sturdy boots are highly recommended as are gloves & goggles.
If you are doing any form or regular riding, you really should have a good full face non damaged helmet, goggles, gloves, body armour, riding shirts and pants (or overalls), knee pads and riding boots.
See you local bike shop for some second hand gear or contact your local motorcycle club.

DO THE RIGHT THING
You get a lot of pleasure from riding your bike, but be aware that motorcycles can annoy others & spoil the environment. If you stick to the following recommendations, you will be helping to make sure we have places to ride in the future;

Always get permission before riding anywhere. Make sure your bike has a good muffler that keeps your bike quiet. Try not to damage any grassy, swampy areas, including sand dunes. Do not ride close to other houses, unless you have permission. Please take all your rubbish home & do not spill oil or petrol onto the ground

GO FOR IT!
Remember that it takes a long time to get really good at riding, but if you use the techniques in this manual, you will become a better rider in a shorter time & with a lot less falls.

WANT TO JOIN A CLUB OR COMPETE?
For advice on motorcycle competition call Motorcycling New Zealand at 07 828 7852, fax 07 828 9828 or write to Motorcycling New Zealand PO Box 253, Huntly.

OFF-ROAD BIKE SET UP

You do not need to have the flashest, most expensive bike, but it does need to be set up well. Poor bike set ups badly affect your riding technique & safety.

HANDLEBARS: The handlebars should be a little wider than your shoulders and should not be bent. Narrow handlebars tend to cause instability of the front end. The cross bar & main beam of your handlebars should form a direct line with your forks when you look down from above. You need to have your bars positioned so that they do not obstruct your legs & knees whilst you are cornering. Having wide bars that are in line with your forks makes it easier to use the 'elbows up' riding style that top riders use.

LEVERS: Levers should be set up so that when you are sitting or standing on the bike in the 'Attack positions' your arm & wrist form a direct line with your handlebar & lever. This angle is about 30 degrees below being directly forward of your bars. Having your levers lowered helps keep your elbows up.

HANG LOOSE: You need to have your lever mounts on the bars slightly loose so that they pivot if you crash, rather than snap.

LEVER FREEPLAY: You should be able to pull your clutch & brake levers in about 5-10mm before they start working. This avoids 'riding' the clutch & helps prevent fore-arm pump.

GRIPS: You need to glue and lock wire your grips on to avoid them slipping during a ride. Many people use grips with no pattern on the top side to avoid blisters. Replace grips when worn.

REAR BRAKE & GEAR SHIFT: Both these levers should be adjusted so that they sit parallel with the foot-peg & the ground. The brake should be adjusted to work when it has been pressed down one cm.

TYRE PRESSURES: Running tyre pressures too low means you run the risk of getting a flat tyre. If the pressures are too high, your rear wheel will spin & not get traction. You should run between 11-14 psi (pounds per square inch) in both your front & rear tyres. On a wet day, drop pressures to 11psi. On a hard/rocky track keep your pressures at 14psi.

SUSPENSION: Off-road riding is all about bumps so having your suspension set up correctly is vital. If you are competing, you need to get your suspension serviced by a qualified person about every 6 months at the least.

SUSPENSION SAG: You need to set your suspension so that it sags a certain amount when you sit on it. On a full-sized Motocross or Enduro bike the bike should sag 25mm under it's own weight & 95mm when you sit on it. Use a measurement between the rear axle bolt & the seat bolt to see if your sag is correct.

FORK HEIGHT: The amount of the top of the forks poking out of the top fork mount affects the bike handling. Having a lot of the fork showing means the front of your bike is lowered which makes the bike turn more quickly, but be more unstable at high speeds over rough ground. Having the top of the fork level with the top fork holder raises the front of the bike, making it more stable, but turning slower.

FOOT-PEGS: The angle of your foot-peg is vital to riding well. Foot pegs sag down on the outside after a lot of use. The footpegs need to sit up higher on the outside when viewed from the front or behind. To do this, take your foot-peg off & put a dab of weld on the bottom inside of the peg. Having your footpegs tilted up helps glue your knees to the seat/tank junction, which fast riders do.

BODY POSITION

Correct body position is the foundation of riding well. Just like if you started to build a motorcycle, you would start with the frame, so to when learning to ride better, you start with your frame - your body.
Consider your back as a part of the frame of the bike and your arms and legs as suspension.

There are two basic body positions to use for off-road riding;
The Standing & Seated Attack Positions.

1. STANDING ATTACK POSITION

- Rough ground
- Up hills
- Downhills
- Sweeping corners
- Jumping

1. Stand crouched on the bike with knees slightly bent
2. Grip seat with knees
3. Elbows up so arms are in line with forks
4. Head above the handle bar
5. Looking ahead

2. SEATED ATTACK POSITION

- Cornering
- Starts

1. Sit as far forward as possible
2. Crouched & leaning slightly forward
3. Elbows up so arms are in line with forks
4. Head 3 hand widths above handle bars
5. Grip seat/tank with legs
6. Two fingers on hand controls
7. Looking ahead

TIP
When traction is not available, slip your backside back towards the middle of the seat. This adds weight to the back tyre. Keep your head above the bars to keep some traction on the front end.

GENERAL BODY POSITION TIPS

- *Double your suspension - "stand up"*
- *Getting central takes the strain off the body and keeps even traction front and rear*
- *Always grip with the knees*
- *Relax you hand grip on the handle bars when possible*
- *Always look ahead*

BODY MOVING

A motorcycle is a rider active vehicle, meaning that you have to move your body around to control the bike.

Not moving, or moving the wrong way, can ruin traction, upset the suspension and tire you out real quick. Learn to move around the bike and you are starting to discover safe, smooth and fast riding.

STANDING TO SITTING

It is really important to **move smoothly between standing & sitting** so that you keep your body weight balanced on the bike.

To move from the seated attack position to the standing attack position, simply straighten your legs until you are standing on the bike with slightly bent legs.

To move from the standing attack to the seated attack position, sit & **slide forward in the same motion** until you are sitting as far forward on the seat as possible.

NOTE that your head & shoulders remain in the same position whether you are standing or sitting. Only the position of your legs & behind changes. Your head should be the length of your forearm away from the handlebars at all times. Elbows are up always for strength & stability.

CENTRES OF GRAVITY

You have an imaginary point in your body around which your weight is evenly distributed. This point, called your Centre of Gravity (COG), is just in front of your stomach. Likewise your bike has a similar point around the middle of the engine. Controlling a motorcycle has a lot to do with where the two COG's are in relation to each other.

The closer a rider can put their COG to the bike's COG, the more stable, controlled and balanced he/she will be. This is why most top riders crouch over their motorcycles with their **head centered over the handlebars.**

A common mistake made, especially by off-road riders, is that riders sit too far back on their machines. This means their COG and weight is rear of the motorcycle's COG. This means the rider overloads the rear suspension, strains their forearms and back muscles **(leading to forearm pump)** and uneven traction on the tyres.

BRAKING, CORNERING AND ACCELERATING FORCES

In order to counter accelerating forces the rider will move their COG forward. To counter decelerating forces the rider moves their COG back. This applies to both braking/accelerating and uphills/downhills.

GET LOW

The lower the body's COG to the base of support, the more stable the bike and rider. A rider crouched low over their bike is less likely to be thrown sideways in a corner. By crouching low, the pendulum effect is decreased.

WEIGHTING THE OUTSIDE FOOTPEG

In order to get maximum traction, the rider should press down on the outside footpeg.

CORNERING

Corners win races! Anybody can go fast on a straight. But if you can save 1/4 of a second every corner = 2-3 places higher up at the end of the race.

TECHNIQUE

- Enter corner in standing attack position on the line giving best 'flow' around the corner
- Brake as hard as you can.
- Change down gears. Choose a gear that will get you part way down the next straight
- then after braking bumps, just before the middle of the corner, sit smoothly into the seated attack position
- As you sit, apply the gas smoothly in one motion
- Stand up as soon as possible after exiting the corner

TIPS

- *Remember to get the bike leaned over before you sit*
- *Remember sit just before the apex (middle) of the corner!*

CORNERING PRACTICE ACTIVITIES:

- Slow first gear circles
- figure 8's, barrel racing, stand up cornering

& weaving in & out of cones.

RUTTED CORNERS:

- You need to be very accurate when riding a rutted corner
- It is vital that you line the rut up so you enter in a flowing way
- Lean with the bike, rather than leaning the bike below you
- Get your inside leg up high so it does not drag on the ground

CORNERING LINES: In general, try to take wide entries into corners, especially flat and bermed turns. A wide entry means you make the corner as flowing as possible and can usually get on the gas earlier.

JUMPING

Soaring through the air is an awesome feeling & the reason many people ride bikes
But if you want to ride fast & safe, there is more to learn about jumping than just air time

TECHNIQUE

- Most jumps are approached in the **standing attack position**.
- Choose a smooth spot on the jump to take off from.
- Make sure the bike is in the 'meaty' part of the power band as you hit the jump face
- Grip the bike firmly with your legs
- Give the **throttle** a little blip as you take off.
- Do not push or pull on the bike as you take off. Just let the suspension compress & rebound naturally
- Always look ahead.

Do not attempt a jump you are not confident on.

CROSS COUNTRY SKILLS

MUDDY/BOGGY/SANDY GROUND

Pick a **good line**, which offers the most traction. Enter the muddy ground in the standing attack position, but **leaning slightly back** so your front wheel doesn't dig in. Keep up plenty of revs & try to maintain some speed & **momentum.**
If you get stuck, jump off quickly & push with the bike in first gear revving low.

DOWNHILLS

- Look for a good smooth line at the top.
- Shift your **weight as far back** as possible.
- Use both brakes to slow down.
- **Grip the bike tight** with the insides of your legs.
- Keep the engine running if possible especially if you riding a 4-stroke machine, which has, engine braking.

Let the brakes off for a second if you cross a tree root or really slippery section.

UPHILLS

- For Motocross hills, stand up, look ahead and attack the hill. Stay in the standing attack position.
- IN a trail situation, try to pick a good line when you are well away from the hill
- Change down gears when the revs die and or use a bit of clutch
- Always look ahead

IF YOU GET STUCK ON A HILL
Pull the rear of the bike around until the bike is lying across the hill with the seat closest to the top of the hill. Get on the top side of the bike, because it is easier to lift from the top, then lift the bike up. Either push the bike to the bottom or jumps on and ride the bike down. (Be careful of other riders).

TRAIL RIDING

Use the **crouched standing attack position** & always **scan the trail 20m ahead** so you can pick the best lines & **react** to logs, banks & other riders. Roll the throttle on smoothly around corners & maintain momentum. To cross logs, lean back, wheelie the front end over, close the throttle & shift your weight forward to ease the back tyre over the log. Drop tyre pressures to 11 psi if the trail is really slippery. Consider using heavy duty tubes, a pipe guard & hand guards.

FITNESS TRAINING

Riding a dirt bike takes a lot of physical effort. You need to develop endurance in your legs, arms and back (basically all muscles) as well as get aerobically fit (breathing). So you really should do some form of fitness training.

Some good activities include;

- Riding your motorcycle
- mountain biking
- road cycling
- swimming
- running

Other really fun activities that improve your fitness for riding include;

- kayaking
- waterskiiing
- wakeboarding
- surfing

The most specific form of training you can do is to actually ride/race your bike. Off the bike activities will help you to get fit, but can never replace riding your bike. You need to spend at least 50% of your training time on the bike.

MOUNTAIN BIKING provides an excellent workout for the legs & cardiovascular system, but does not work the upper body that much, (unless you are carrying your bike through rough terrain or biking downhill on rough terrain)!

Try to do some fitness training at least 3 times a week for between 30 to 60 minutes. Push yourself to a point where you feel uncomfortable, but not in pain

** Young people should not do weight training until their bodies have matured!*

NUTRITION… fuelling the body!

Understanding nutrition is not difficult. It is simplest to **think of your body as a motor, which requires fuel, a spark and a cooling system.** The best fuels for your body are Carbohydrates such as bread, potatoes, cereal and fruit. Look at the following comparison between an engine and the human body.

FUNCTION	ENGINE	BODY
ENERGY	PETROL	CARBOHYDRATES
START & MAINTAIN FUNCTION	SPARK PLUG	PROT & VITAMINS
STRUCTURE/HOLD TOGETHER	FRAME	MINERALS
LUBRICATE & COOL	OIL & COOLANT	WATER

Just as your motorcycle will not run well on poor quality fuel, your own body will not perform well if any fuel source is inadequate.

EAT

- Eat regular small meals containing mostly carbohydrate food Potato Fruit Bread Cereals Noodles Rice Pasta
- Avoid too much fatty foods
- Avoid milk based food prior to riding (stomachs can get upset)
- Try to eat on the day you ride, even if it is just a banana

DRINK

- Drink heaps, especially for endurance events and on hot days
- Drink water, fruit juice or a sports drink (diluted 50%)
- Eat and drink after the event to fill up your energy reserves for a quick recovery

SPECIAL NOTES ON FLUIDS- AVOIDING DEHYDRATION!

The biggest nutritional problem many people face is a lack of fluid leading to dehydration. During intense exercise, up to 3 litres of fluid can be lost per hour. It only takes a loss of one percent of body weight caused by fluid loss before performance is impaired. The symptoms of dehydration (a lack of fluid) include head aches, starry vision, cramp, disorientation and exhaustion and can become as serious as stroke and death. You ***do*** need to drink before you are thirsty!

NUTRITIONAL MYTHS

- A LACK OF SALT CAUSES CRAMPS! Possibly in a very few cases this is so. Normally it is either repetitive muscular action or a lack of fluid that causes cramp.
- YOU ONLY NEED TO DRINK WHEN THIRSTY! Wrong!! Thirst is felt *after* fluid is required.
- SPORTS DRINKS BOOST PERFORMANCE! Sometimes!! In special cases, such as endurance events, sports drinks are beneficial.
- CASUAL RIDERS DO NOT NEED CORRECT NUTRITION. Wrong again!! Recreational riders have just as much need for correct nutrition as the world champions, because they are often not as fit!

TRAINING THE BRAIN

Your mind plays a huge role in how you ride. Your mood, your concentration, thoughts etc have a big influence - either positive or negative.

KEEPING CALM BEFORE THE BIG EVENT
Many riders get anxious before a competition, especially a major one. The symptoms of being too nervous include feeling weak and tired, sweating, adrenaline flowing and treating those around you unfairly. The following are some effective methods of calming down so you can perform well.

- Affirmations; positive self talk
- Changing fear into excitement. The physiological symptoms of fear are very similar to the symptoms of excitement. Tell yourself "I am excited by this challenge"!
- Downplay the importance of the event. Pretend the event is just at a club level.
- Remain busy. Check your bike, prepare your gear, walk the track.
- Play familiar relaxing music

CONCENTRATION
Maintaining concentration is one of the most important psychological aspects of sports performance. Following are methods of maintaining concentration on riding.

- HERE AND NOW: Put your entire thoughts into the immediate challenge. Nothing else. Just the next 2 seconds riding ahead.
- SELF TALK/KEY WORDS: Use words like attack, focus, smooth to help you concentrate on riding.

MENTAL TOUGHNESS
A lot of sports psychology comes down to MENTAL TOUGHNESS. This is the ability to control your own mind & remain positive & focused no matter what happens. You need to become a mentally tough unit. Get inside your head. Once you can achieve a consistent positive never-give-up, 100% effort attitude you can perform at your best always.

POSITIVE THINKING AND VISUALISATION
Before going over a jump or around a deep rut, imagine yourself doing it perfectly. Fill the mind with the right picture and often the body will follow through. Thing negatively and you will probably fall off.

SUMMARY

Riding dirt bikes is sport that just can not be matched. The excitement of the corner, the adrenalin of the start line or simply the freedom of exploring new country keeps us involved in the sport of off road riding. Hopefully though this manual you have gained some tips on how to ride better, maybe faster and certainly with more control.

Nick Reader.