

T E A M

Benwell

Team Benwell Go Bike Racing...

Part 1

(Part of a series of articles written for Racer magazine 2002)

Intro

After years of Rc car racing and even more as motorcycle enthusiast's team Benwell have always had a desire to go RC bike racing. When the Kyosho bikes first came out they looked like fun, but were a little too toy like to capture our imagination. We decided to wait for a proper bike.

Well it took a long time coming but just such a bike is now here....

Nuova Faor SF501

We first saw an SF 501 at a local car meet run by Maritime Racing in Chatham. Matt from Racer magazine had taken the review model to the meeting to show it off. The following morning an order for two bikes was placed with Ted Longshaw, the UK distributor, and the fun was soon to begin.



Now we won't bore you with a blow by blow account of the build or talk about how pretty it looks, if you're a racer like us then all you want to know is "*what does it go like*". It's possible by now that you have heard all kinds of horror stories about how hard they are to ride and that they don't turn etc, but don't believe them, they're all wrong. They just need to be built correctly and, if you're a car racer, require a different driving technique. Let us explain.

Set up

First things first. Build the bike completely as kit. Make sure everything is fitted well, straight and free and check the following:

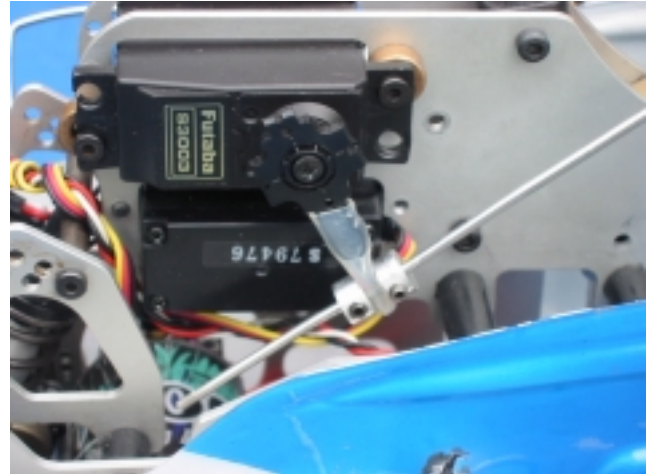
- To help stop the front forks binding up when you crash (and you will to start with) leave one front wheel bolt slightly loose (keep an eye on it though or it will eventually fall out)
- Bolt the rider figure on solidly (it's a lot of weight to have flapping around)
- Adjust the chain so that its just slack at its tightest spot (they all have at least one tight spot)
- Glue the tyres on well, especially the rear.
- Choose a mild motor to start with. A stock or similar is ideal
- Check that when you move the transmitter steering to the left that the front wheel steers to the right and vice versa (all will become clear in a mo)
- Set the front fork rake to its max position. (adjuster screwed right out)
- Mount the rear swing arm pivot in its lowest position and adjust the preload on the rear shock so that the rear swing arm is level with the ground.
- Check that when the bike is leaning right over nothing touches the ground except the tyres and side guards. If you can't stop the fairing touching consider lengthening the forks by 5mm. You do this by inserting a short length of tube on the fork leg between the e'clip and the bottom steering yoke. Any good model shop will have something.



Ok now the trick to the whole bit. The steering linkage.

On an RC car you make sure that the steering servo is attached as rigidly as possible to the front wheels, doing your best to get rid of any slop.... Not so with a bike. When correctly set up it will still be possible to move the front wheel from lock to lock with the servo horn remaining central! The best way to think of it is that the bike steers itself you just encourage it which way to go. The photos show the different approaches to this but trust us when we say that to start with, have it sloppy and only use a little steering throw. i.e. a spring set-up needs to be set with no preload at all, and silicon system

requires at least 14mm of free length and in both cases use a short-ish servo arm or turn down the rate on your transmitter. This will make the bike slow to turn, but it will turn. Make it all too tight and it will be ultra responsive but you'll struggle to keep the bike upright. Finally, make sure that the servo arm is at 90 degrees to the steering arm, and that with the steering centred, the front wheel is pointing straight ahead.



Lesson 1

Ok so how does it steer.

A bike steers as much because it's leaning over as it does because of the angle of the front wheel. So the first thing is to get it to lean over. This is where the steering turning the wrong way comes in. By turning left, the wheel moves to the right encouraging the bike to lean to the left and initiate its turn. Once into the turn you can often just let go of the steering and control the bike through the turn on the throttle. Accelerate, and it picks itself up taking a wider line, ease off and it will hook in tighter. To straighten up you just power out of the turn or if necessary turn the other way slightly. It all sounds complicated but just like when you learnt to ride a bicycle, if you practice there comes a point when it all clicks into place and seems really easy.

Riding - Initial runs

Rule number 1. Find a BIG space. We guarantee that to start with you won't get it to turn. You'll soon suss that to get it to stay upright and go straight that you just let it do its own thing but when it comes to a turn it will just fall onto the crash bar and go straight on. Don't give up though. Try starting a turn then letting go of the steering and guiding it through with the throttle. You'll soon get the hang of it. The biggest difference from a car is that you have to plan your moves ahead. You can't just arrive at the corner and turn. You have to give it time to lean over and settle into the turn. Practice and it will soon fall into place.....



If it doesn't go straight then small tweaks can be taken out using the trim. Any more and you will have to adjust the steering linkage. If you do all the adjustment on the trim you will eventually find that the bike steers better one way than the other.

if your starting to get the hang of it then lets have some fun.

Valentino Rossi eat your heart out.



Ok its not quite grand Prix but I guarantee you'll be having as much fun. Once you have got the hang of riding, and you've tweaked your bike you'll be doing everything Rossi can on his Honda, only with out the fear of killing yourself on the first high side. You wont get the millions of pounds from sponsorship deals either, but that's the price you have to pay....

Ok so you're getting the hang of it now this is what you do next...

- Bend the side guards up (see pic) so that the bike leans over to about 40deg to the horizontal. (trust me it can go that far)
- Sling in a hot 12t motor
- Reduce the fork rake to about 22deg (screw the adjuster down so that the front tyre is about 7-8mm from the front of the fairing at its closest point.
- Raise the swing arm pivot to the central location and set the shock pre-load so that the fairing sits level to the ground.
- Increase the throw on the servo or fit a longer arm
- Firm up the steering. (*Slightly*) either cut 1-2 mm off of your silicon or move the collets holding the springs in 5mm on each side.



Now your motoring. Letting the bike lean over more and reducing the fork rake helps it turn tighter and faster.

Increasing the servo throw and stiffening the linkage helps it respond quicker.

Raising the rear swing arm location reduces rear grip slightly and allows you to drift the rear under power or back it in to a corner on the brakes (slide in sideways like you did as a kid on your bmx when dad wasn't looking).

Fitting the 12t motor puts an enormous smile on your face and has everyone going Wwwwhhooooooo man, that is so damn quick.

Ok so now there are a couple of new techniques to learn as well.

Braking



Ideally you'll have a speedo or transmitter that allows you to adjust your brakes but don't worry if not. Just drill a small hole in your transmitter and fit a self tapping screw (see pic) to reduce the backward travel. Adjust as required. You need just enough brake performance to slide the rear but not so much that it locks up. You'll soon know if you've gone too far the first time you get it into a massive tank slapper, and throws itself through the air.

Now you will be amazed how late you can brake and still get round a corner. Steve Newey of Formby Models trounced every one at the Racer national at Halifax running just a rear brake. However, on a point and squirt track, when the grip is low or just coz it looks cool, you might want a front disk brake as well.



The front brake kit comes with everything you need. Set it up to give you the most braking force you can. This will help you achieve a balance with the rear, and if you ultimately get too

much braking you can always turn it down using the new self tapping screw you fitted into your transmitter!



Its arguable whether you really need the front brake for a quick lap on most tracks but it is much easier to race the bike. There's nothing quite like stuffing it up the inside and standing it on its nose as you slide under the next bike on a tighter line.....

Riding Lesson 2 – Wear out that back tyre

To be fair you'll do well to wear it out, they last forever but you will have a great time trying. The single most important thing you'll practice is cornering under power. Acceleration takes a little of the weight off the front wheel and allows it to turn into the corner better. You drift the rear to maintain the chosen line and use the centrifugal effect of the wheel to hold it at you're chosen angle of bank. All this combined means that you will corner considerably faster.



In car racing the time difference around a corner by someone that's good and some one that's really good is maybe 1/100th of a sec. On a bike that would be ½ second. Add that up over the course of the 3 or 4 key corners on a track and all of a sudden you're 2-3 seconds off the pace, every lap!! If this was a touring car national you'd be propping up the H final and planning on spending loads of money. In a bike race you're almost there and I guarantee that you'll find all that time and more in your cornering technique.

At the moment, although people are starting to lightly modify bikes and refine them in their own way, a kit bike ridden by a good rider could still win a national, or would certainly finish in the top 3, I don't think there is another class of RC racing that you could say that about.

To sum it all up

Smile. Team Benwell have been racing cars for a combined total of 32 years. Although we have loved it all, its been a long time since we drove an RC car for the sheer fun of it and we can't remember the last time we went to a car park with one, just for something to do.



Bikes are different. You can have a wide-open space with nothing in it and still have a whale of a time drifting the rear out of an imaginary turn, backing it into the next one. Watching it just start to wheelie as you power out of that slow turn in front of the start finish straight and passing that imaginary chequered flag miles in front of Rossi....



Now stick it on a track with a group of friendly enthusiastic mates and the fun just multiplies.

Help is on hand

So if we have whetted your appetite check out the following: -

<http://www.teambenwell.co.uk>

The home of team Benwell with more info on living with your bike

Ted Longshaw 01689 855 313

The Uk importer

Formby Models
GM Models

Wasily the most enthusiastic bike stockists in the country and able to offer loads of help and advice, ask to speak to Steve.

<http://homepage.ntlworld.com/paul.tidd/main.html>

Other useful sites that helped

<http://www.mmperformance.net/>

Team Benwell get up and running

Finally if your still unsure but want to have a chance to chat to other riders join the Team Benwell RC Bikes email group. You can find a link on the website.

Late News

Team Benwell will be holding an RC Bike master class at the end of September, probably at the fantastic new facility in Brookland, Kent.

A fun event for riders of all abilities and any make of bike. Some one-to-one tuition will be available and the mix of some theory and plenty of track time is designed to help everyone get the most out of their machines, and maybe encourage them to have a go at racing.

For more information see the Team Benwell web site or contact Ted Longshaw, the UK importer of the Nuova Faor bikes.
