

## Project Bike Development Update

Building a race bike is never a simple case of bolting on a few go faster bits and hoping for the best. The bike has been good though – but we're always keen to make it even better. Here's what we've done since the season kicked off back in March...



**Akrapovic Evo exhaust system**  
When we did our back-to-back exhaust test over six months ago, we did it on a stock motor. Not only that, we tested the Micron system with the baffle out which we've since found out produces 112dba, making it unusable at an ACU run event where the limit is 105dba. In fact, even with the baffle in, not only did it knock 3bhp off throughout the rev-range, we struggled to get it below 106dba despite frequent repacking as advised by Micron.

Quite a few riders cheat the system by wedging a large socket in the collector pipe or making a baffle only to remove them once they've been noise tested which to my mind makes complete farce of the imposed rules and regulations – maybe I should fit an R6 motor for scrutineering and bang in an R1 engine for the race? Where do you draw the line?



**RJS SUPERBIKE idle adjuster**  
Something that we normally take for granted is an idle speed adjuster. The R6 doesn't have one (again this is computer controlled) so changing the idle speed isn't something that can be achieved easily. RJS Superbike's proprietor, Rob Simpson is very much a man that doesn't see problems only solutions. Having worked out that there is a manual adjuster on the throttle bodies, he's fashioned an R1 remote idle speed adjuster to fit and routed it to the right hand side of the bike, just above the clutch cover. It works perfectly and the increased idle speed has made the

bike much easier to ride in slower corners and knocked off over half a second round Mallory.  
The cost of parts and fitting to loose throttle bodies is £80 or bring the whole bike and the cost is £115.  
Talking about drawing lines, check out the dyno graph. With the tuned motor the Akrapovic helps it to breathe more easily, filling in a dip in the midrange to the tune of 7bhp whilst making 2bhp more at the top end. The only issue we've had is with the rearsets that Gary at Dynamic made bespoke to suit the Micron system. He's working on a revised version to suit the Akrapovic as we speak.

### BDK generator

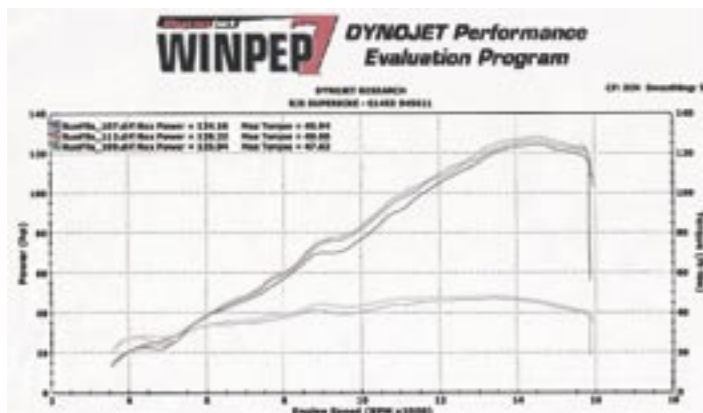
A road bike needs a whole lot of power from the generator. It needs to keep running in every possible scenario including the remote possibility of an idiot riding on full beam with his hazard lights on while blowing the horn and bouncing it off the rev-limiter... with the brake lights on. As a race bike it still has to deal with an idiot bouncing it off the rev-limiter, but with no lights to illuminate or horns to blow the need for big amps is no more.

The BDK kit gets rid of the unwieldy stock generator and heavy flywheel meaning less drag on the motor and a huge reduction in rotating inertia allowing the motor to spin up more easily. On the dyno the results showed that it gave 2bhp everywhere while the RPM against time test was massively impressive. The kit is easy to fit (so long as you have a genuine Yamaha flywheel puller) and is beautifully engineered. At £595 it's less than half the price of the YEC kit unit.



### DBR quick action throttle

The throttle travel wasn't really a noticeable problem at the first round at Brands, but negotiating Lydden's 'Chessons Drift', a corner where you're looking to stand the bike up and pin it, the combination of body positioning and a right wrist with limited movement (enough already) made it difficult to get full gas at the crucial point. British Supersport team, Virgin Media Optoma Yamaha have got round this by programming the Motec system to give full throttle earlier by utilising the fly-by-wire system. Problem for me is I don't have a spare £5,000 down the side of my sofa, so I've gone for a DBR short action throttle. Never a simple task, we had to source some cables to suit. We eventually found the Robbymoto cables from a cheaper (cheap and nasty) throttle fitted perfectly. This has improved things massively for a total of £190.



Micron system was easy to fit and gave great ground clearance. Unfortunately it was too loud and didn't give enough power so it had to go. Still good value and would suffice for trackdays.



The new Akrapovic system has improved the midrange massively. It's also given a gain at the top end - and just how gorgeous are those downpipes?



Dynamic rearset doesn't suit the Akrapovic design - the can bracket should be closer to the swinging arm for ground clearance. That's because Gary made it to suit the Micron system. A new version to suit the Akrapovic is on its way.



BDK flywheel on the left, stock on the right. Do you really need to be told which one's lighter?

### DYNO PERFORMANCE FIGURES

The blue line shows the graph for the Micron system with the baffle in, which I have to run to pass noise tests. The green line shows the Akrapovic giving a much stronger midrange and a better top end with a much smoother curve. The fuelling showed that it was running a little lean with the Akrapovic system - an indication that it's allowing the motor to breathe more easily - we should see further gains once we've remapped the ECU to suit the new system.

The red line is the combination of Akrapovic system and BDK generator - giving a final figure of 128.22bhp and 48.66ft/lbs of torque - that's over 4bhp up on what we've had so far with a massive boost to the midrange and a faster spinning motor - can't wait for Snetterton!

### 2006 YAMAHA YZF-R6 COST SO FAR...

Second hand 2006 Yamaha YZF-R6	£5,000	
<b>Engine/Performance</b>		
Akrpovic Evo System	£1343.00	0870 240218
Pipercross air filter	£63.16	01978 664474
Rock Oil XRP Synthesis Racing Oil (4 litres)	£37.99	01925 636191
Renthal Sprockets/Tsubaki Chain	£123.71	01522 791369
YEC Matching Loom & ECU	£800.00	01932 358066
BDK lightweight racing generator	£595.00	01508 481713/4 D
Woodcraft generator cover	£172.87	01373 464252
Woodcraft timing cover	£109.93	01373 464252
STM slipper clutch	£746.13	01689 862398
Dynojet Quickshifter	£235.00	01995 600500
JT Engine Developments Stage 1 Tune	£1500.00	01530 272045/07790 36414
DBR quick action throttle	£150.00	01255 863112
Robbymoto throttle cables	£44.00	01691 610927
YEC Kit Head Gasket	£58.00	01932 358000
Kent Cams (reprofiled)	£196.00	01303 248666
NGK R0045Q-10 Spark Plug x 4	£160.00	01442 281000
<b>Engine Total</b>	<b>£6334.9</b>	
<b>Chassis</b>		
GPR steering damper	£299.99	01945 585533
SES front subframe	£90.00	01362 850847
SES clip-ons	£110.00	01362 850847
Galfer front wavy discs	£392.00	0870 5402118
Galfer rear wavy disc	£83.00	0870 5402118
Verhill braided brake lines	£93.00	01306 885111
Dynamic footrest kit	£235.00	01455 841333
Harris fuel filler cap	£68.00	01992 532501
Pazzo brake lever	£65.00	0870 8031863
Pazzo clutch lever	£65.00	0870 8031863
Pro-Bolt Titanium fasteners	£200.00	0800 0185500
Front Fork Rebuild	£395.00	01449 777161
Öhlins rear shock	£650.00	01449 777161
Toe guard	£20.00	01455 845611
Pirelli Diablo Supercorsa SC2 Tyres	£270.00	01283 525252
<b>Chassis Total</b>	<b>£3035.99</b>	
<b>Bodywork</b>		
Race by Design carbon frame covers	£180.00	01737 822412
Race by Design carbon swingarm covers	£100.00	01737 822412
ANR Performance full body kit	£285.00	01472 601728
Racepaint UK paint job	(from) £250.00	01773 533072
<b>Bodywork total</b>	<b>£845.00</b>	
<b>Sub Total</b>	<b>£15,185.15</b>	

All prices quoted are full retail prices including VAT.

Words: Rob Hoyles Images: Racing Line Photography



## Club Life

It's been an up and down month for Hoylesey. A first MRO podium finish, a clutch failure, a new personal best lap and some bad set-up decisions all being part of that steep learning curve...



### Cadwell Park Round Three

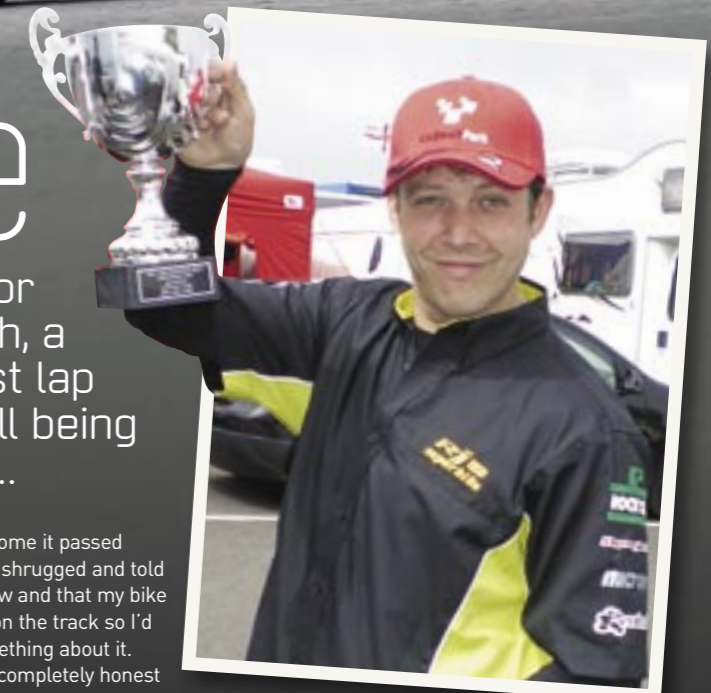
Ah, the highs and lows of racing. Cadwell Park proved to be a bittersweet experience. Of all the tracks on the MRO calendar this year, Cadwell Park has to be my favourite. As a kid I was taken along to watch all manner of racing with my Dad, and as an adult (well, physically at least) it's a place that seems to bring both the best and the worst out in me.

Friday's test day didn't start too smoothly. Having passed the noise test a day earlier on a track day, I was fairly confident that my bike would pass again. But it didn't. Despite the fact that the bloke doing the noise testing recognised me and even said: "Hello again mate. I tested you yesterday, didn't I?" My nod of agreement meant little as he re-tested me and failed me for being 1dba over the limit.

I asked politely how come it passed yesterday and he just shrugged and told me that he didn't know and that my bike was too loud to take on the track so I'd better go and do something about it.

At this point I'll be completely honest and admit that I spat my dummy out, threw various toys in all directions from my pram and nailed it out of the scrutineering bay in a massively immature fit of temper. To those of you unsuspectingly eating your Cornflakes as a purple-faced Supersport racer came past you sideways at 15,000rpm, I sincerely apologise.

Qualifying went pretty well and I ended up sixth just behind, but on the same row as former BSB privateer and real roads specialist, Denver Robb. The Superpole race was a bit of a disaster though. I finished 6<sup>th</sup> on the track, but was then demoted to 11<sup>th</sup> when I was



adjudged to have jumped the start and given a ten second penalty. I'm not arguing with that decision as I felt I may have timed it wrong and backed off the throttle so as not to gain an advantage. Lesson learned and hopefully I won't do it again, but with hindsight I wish I'd just pinned it now!

Sunday morning's race was a bit more like it. I wish I could remember what I had for breakfast, because for the first time all season, I felt totally at one with the bike. I made a good start and got away with the leaders - the dominant Seton Tuning Yamahas

of Weymouth, Lyon and Cooper with Dean Daniels on the Honda leading the way into Park corner with Robb not far behind. I can't even remember how it happened but according to my fellow riders, I got past Weymouth on the way out of Mansfield before diving underneath Daniels and Cooper into the chicane as I set off after Lyon.

A few laps later, Weymouth outgunned me down the start/finish straight, but then high-sided out of Mansfield gifting me second place while young Lyon cleared off into the distance. My first podium in MRO and I'm well fired up for more of the same in race two. The lights go out, I dump the clutch and... the sickening noise of metal against metal and no drive scares me witless as the six rows behind me fly past, narrowly missing me. The cause turns out to be a problem with the prototype clutch plates that I'm testing. The swarf has got into everything and the motor is totally wrecked. And there's just two weeks to go until Brands.

#### BRANDS HATCH - ROUND FOUR

Trying to get hold of an R6 motor and have it tuned in less than ten days isn't that easy. It's not cheap either. Happily thanks to a few contacts and the enthusiasm of Rob Simpson at RJS Superbike, it all came together with a low-mileage motor from a breaker's yard.

This is the real stressful side of racing, and

the time I spent phoning round, collecting and chasing up parts took total precedence over the essential things in life, like working and sleeping. Christ, racing gets to you.

Rob worked on the motor late into the night throughout the week and, at 9pm on the night before the test day declared the bike fit to race. I was relieved and thankful to have Rob's support - there's no way I'd have had the time or been able to afford the rebuild otherwise - thanks mate.

I arrived at Brands just after midnight on Thursday, wound the legs down on the caravan and crashed out. I awoke with a bit of a headache no doubt caused by sleeping on a slope. I make a mental note to level the caravan properly next time.

The bike runs faultlessly throughout a test day marred by rain that doesn't quite manage to soak the track properly as I get in more practice at changing wheels than I'm ever likely to need.

The weather for Saturday's qualifying sessions is better, with a good wide dry line. I always struggle at Brands though; I'm crap out of Clearways and I'm fairly useless at getting Paddock Hill right - I'm either in too hot and off the throttle or simply too slow in. I qualify 7<sup>th</sup> with a 49.8 with the top ten separated by less than a second - it really is a close field this year.



The short six-lapper on Saturday doesn't quite go to plan. I get away okay with the leaders, before nearly high-sided out of Clearways trying to get a run on the pack then stupidly try to make it all up on the brakes into Paddock, almost losing the front. With two laps left I've made it far too hard for myself and end up seventh.

Sunday doesn't go much better. The first race is a soggy affair and I struggle to find the confidence needed to go fast in the rain. Anthony Johnson is on a mission though, and claims his first MRO win with an impressive 51-second lap in the wet on his way to demoting me to 5<sup>th</sup> in the Championship.

The second race is even worse. The track is neither wet nor dry but soon there's a dry line. The race is stopped after several crashes and I'm kind of hoping that it'll be called a result. We're kept on the grid for a while before the restart and within a lap I can feel the rear wet is falling apart - I'd chosen the softest compound and on the drying track it didn't stand a chance. The slightest whiff of throttle cranked over sees it spin up, a problem exacerbated by a lack of set-up skills that resulted in an overly soft set-up. I go backwards pretty much and end up 9<sup>th</sup> on aggregate.

My results this month has proved a couple of things. That I can go faster in the dry than I thought, and slower in the wet than I realized, so that's something I definitely need to work on.

The great thing is that this year is one of the most competitive in MRO for a while and I'm glad to be a part of it. The learning curve since my first tentative laps last year as a novice has been a steep one. But then that's what makes racing all the more addictive.