



WHAT CRAZY PARENTS DO

WORKS YZ50J!

That's right: it really works!

One of the main arguments the staff of ADB puts up against the thought of having kids is the high price of launching those kids into racing. It seems we have a fairly good example with this exotic YZ50J created by Ray Fowler for his son Richard. Still, the end result was a 50 which worked. It's interesting to see what Ray did, and in his own words, here's the story.

by Ray Fowler

This is the story of the evolution of a trick YZ50J. It all started when the first YZ50G appeared and my youngest son, Richard, was showing signs of demolishing his aged Honda MR50. There was a great gap in availability of bikes for the smaller rider and the arrival of the 50cc Yamaha was greeted warmly, and the G model quickly found its way into the garage.

Over a period of two years various features of the bike were found to be wanting — or rather lacked the performance to fulfill the rider's needs. These needs centred around typical mini bike club activity, mainly gymkhana and club 5 hour enduros — plus the inevitable trips to Hungry Creek, where anything could happen!

The G model was replaced by a J early in 1982 and the "modifications" were transferred from the G to the J. It would take days to tell the sequence of the modifications so we'll just list them starting at the front of the bike.

HANDLEBARS

The G model was fitted with same clutch and brake levers as on the 80 — much too big for small hands and apart from that, too prone to break. Shorty levers were

fitted. Some Dads cut the handlebars back but we left them as they were.

FRONT WHEEL

With the help of forks which were too stiff, and with limited suspension, the steel front wheel soon had square sides. A fourteen inch aluminium rim was found at Mike Warners and we were delighted until told that the original rim (and hence hub) was a 32 spoke wheel. The standard was 36 — as was the lovely aluminium rim. The problem was solved by using the hub from a YZ80. This gave the 50 a heavier axle although it meant we had to bore the brake backing plate and the slider castings to suit the bigger axle. Heavy duty spokes were fitted.

FRONT FORKS

The YZ50 has very stiff suspension and, inspired by overseas magazine comments, we fitted air caps and experimented with oil filled forks and no springs. We didn't like the results. We machined new damper rods to give an extra inch of travel and put the old springs back in with 5 wt oil. No problems — and the extra travel was soon to be appreciated, as will be explained later.

ENGINE

Reliability was the prime objective. Young kids seem to delight in riding non stop all day and we didn't want super performance. As "trials" days are part of the club activity, the standard 12 tooth front sprocket was changed to 11. The rear sprocket was swapped for a 50T aluminium sprocket, giving the overall equivalent of two teeth down at the countershaft. Naturally no-one made a rear sprocket for the YZ50 so we machined the centre from a 420 x 50T sprocket from "we do not know what".

The main problem with the engine was the pitiful air filter. It was only just bigger than the one on the little Honda MR50, which allows air through to produce two or three horsepower, while the YZ50 is supposed to create 8 horsepower! The standard filter would only last about 4 hours in dusty conditions.

Some owners fitted a Unifilter pod and did away with the air box. Fearful that this would jeopardise our ability to last through a five hour enduro in the rain, we created another filter area in the side of the air box by framing the cut out with shaped aluminium section and fitting a vertical filter similar to the original one (which is in the top of the air box). This proved adequate for non-stop running in the dust.

The engine was forever reliable (with the help of pistons and rings). When the modifications were later transferred to a J Model, Boysen reeds and a boost bottle were fitted.

Club regulations demand strict control of noise. The standard G (and J) Mufflers soon exceeded the allowable noise limit and an Accord Aluminium Repackable Muffler was fitted. The same muffler was transferred from the G to the J.

SUSPENSION

Here's where the fun really started!

The YZ50 rear suspension is just too hard. Any 50 rider who can ride will soon complain of the jolts and restraint created by this odd design (the YZ60 is softer than the 50!). We solved this by using softer springs which were bought for about \$6 each from bike wreckers. The only remaining difficulty was the small rear wheel travel.

After a routine check it was found that the pins holding the monoshock unit to the frame and to the swingarm were bent and, therefore, hard to remove. The problem was solved by using 10mm high tensile cap screws — with heads machined to 1½mm thickness and the thread cut off. Not long after this discovery, we removed the swing arm and found the swingarm pivot bolt bent beyond description! At the same time the monoshock unit showed sign of giving up. We really didn't want to believe all this — after all, it was only a 50 ridden by a 9-year-old who only weighs 3 stone!

After one club ride we found the swingarm badly bent and the "column" between the upper and lower frame bent and cracked. The wheel was 10mm out of plumb with the

vertical plane.

A new swingarm was designed and fabricated from aluminium. We added an extra 25mm to the wheelbase of the bike and allowed for a new shock which would give 7½" of movement. The standard cheap rubber swingarm pivot bushes were discarded and brass bushes pressed into the swingarm. These float in 4 hardened steel flanged bushes which locate the swingarm relative to the bike frame.

Grease nipples were fitted to lubricate these bushes. The aluminium swingarm was strongly designed and weighed slightly more than the old steel unit. The cantilevered design of the swingarm pivot leaves a lot to be desired and there is no way our new arm could change this basic philosophy.

The new pivot rod was made from 10mm high tensile steel with nyloc nuts each side. When tightened, the rod clamps the two steel bushes (each side of the bike) against the bike frame. The swing arm was free to rotate on the bushes, and we have never had any more bent pivot rods. The aluminium swingarm proved to be excellent and no mechanical problems were encountered over 18 months of hard work.

The extra length and movement of the swingarm meant that some weird geometry existed for the chain, so the chain was kept in place with a large flanged nylon roller guide which took the place of the terrible standard "roller". The standard bottom guide consisted of a plastic roller free to spin on a bolt (lasts about 3 rides!). The new roller had two small ball races fitted. The races were replaced twice in 18 months.

Because of the swingarm angle at rest, relative to the pivot point, a special guide was designed to stop the chain from attacking the swingarm. We tried a polyurethane tyre but it just didn't last. The final design consisted of an aluminium roller, two miniature needle rollers and a shaft made from a hardened dowel. We let the chain "cut" its own groove into the aluminium. All this sounds fairly complicated but standard plastic guides get cut to pieces on a muddy day.

FRAME

The YZ50 frame is prone to bend at the back of the steering head. No doubt this is aggravated by any rider who loves to jump using the standard suspension. There is no sign at all on Richard's J of this problem, but then it has had the longer front forks and the aluminium swing arm fitted almost since new.

RESULTS

The bike modifications were completely reliable. We had 5½" of travel at the front and 7½" at the rear, with a soft feel. In trials, gymkhana and enduro events the bike proved easy to ride and apart from winning the six round Club Championship for 1982, was more than competitive in Enduro events against the bigger 80cc bikes.

