

# 5 MONO BETTER

By Jody Weisel

## MOTO-X FOX'S ULTIMATE PRIVATEER YZ

### Quick as a fox

□ The Yamaha YZ125E, and its D-model predecessor, give away a handful of advantages to the class-dominant Suzuki RM125. YZs can and do win, but they do so in spite of a balky gearbox, peaked powerband and lack of low end. The YZ125 shifter is a mysterious ratchet that has been a problem child for several years. To make matters worse, the stock YZ cylinders so over-revved as to require the pilot to push the revs high up the pipe. The more revs the Wavy-Zed connects, the less cooperative the transmission becomes. To pull off a 100-percent shifting ratio the rider has to back off the throttle. The RM makes about one to two ponies more than the YZ through the mid-range, plus it will shift under power. The only place the YZ matches the Suzuki on horses is way out there where the bike won't shift cleanly. The reason is that RMs are able to get a more concentrated and applied use out of their power/gearbox relationships than the YZ. That translates into lower lap times.

Last year Moto-X Fox held the top privateer team in the 125 Nationals with Steve Wise, Pat Richter and Mark Barnett. Wise rode a special Honda, but Pat and Mark toiled around on super-sane Suzukis. Surprisingly enough, Moto-X Fox held the top-placing privateer in this year's race with Danny Turner, but they did it with a Yamaha. How did they do it?

### MOTO-X FOX YZ ENGINE

The Fox train-trail devised a complete package for the YZ125 that increased the power of the stock engine. It didn't just punch up the top end with a loss on the bottom, or give it middle end and an anemic upper and lower, the MX Fox kit increased power throughout the range.

The carb is replaced with a special 34mm Mikuni. It runs a 330 main jet, OS needle jet and standard needles. The

carb comes with a new cap and new slide (2.5 cutaway instead of the stock 3.0). The larger carb and more generous jetting are necessary to lead what will soon become a minimalist.

A Moto-X Fox head replaces the

stock head. The stock head is a joke. It looks as though it was designed as a ring-gap, temporary measure and then left on as a cost-per-unit money-saver. The Fox head does the job right. It weighs 1400 pounds more than stock, lowers the cylinder head temperature by 50 degrees and completely eliminates flash heat wave cycling that could raise the temperature by 100 degrees. There is an 82-percent increase in surface area. Moto-X Fox expert Keith Beninger suggests using the stock head gasket, and advising against ever using a thinner headgasket (even with the stock head).

The Fox cylinder gets 20 thousandths



When you are bordering on a tool of travel at each end of a one-two-five the frame beg to look a lot less imposing.



Steve Simone's super looks come in a gaudy yellow, but so does the YZ125. The front brake cable must be replaced with the YZ250 unit.



The transformation from loser to winner took one complete day of removing, opening, replacing, drilling, throwing away and sanding.



# MAKING THE MONO BETTER

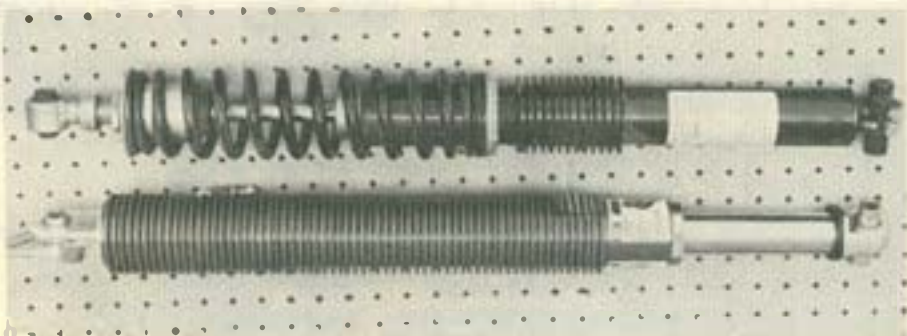
milled off the bottom, and the coning could best be described as one cylinder off of a TZ250 road racer. The exhaust ports are widened and reshaped, the transfer area is re-angled and the intake gets two creative auxiliary bypass ports that lead directly into the transfer area. Essentially, Moto-X Fox is attempting to cut back on the radical over-porting that was done by the factory while improving the aspiration characteristics of the 125 engine. A YZ1250 piston is suggested because it is a single-ring unit, but the dual-ring E piston will work almost as well.

In a refreshing move the Fox crew suggests that you use your stock exhaust pipe. Although they have pipes that can give you more power, they are trying to create the type of power that has something in the works for every situation. The stock pipe is well made. But, Fox does have a super-secret thick exhaust flange that is 15mm longer and 5mm narrower at the neck. Without confusing the issue with theories of flow patterns and the dynamics of gas discharge, the Fox flange really is the most significant improvement available for the YZ engine.

The Fox engine will now perform well enough to make you the top privateer at the 125 National circuit, because it made Danny Turner hat. You just have to be able to do the riding as well as Danny. But there are a few little bits of engine trivia that are important. The jetting is critical, especially in regard to the needle. The engine may appear to be jetted perfectly, but as the engine heats up the mixture will lean out enough to cause both a loss of power, and possibly a loss of the whole kit and kaboodle. Use a 3-50 Metzeler (or the of your choice) but nothing larger than a 3-50 unless you want to waste precious and expensive power trying to burn a 100.00 litre. Do not use a Moto-Tek Ignition with the Moto-X Fox engine. It is undesirable. It will improve the stock bike, but it is essential that it be carefully and expertly lapped onto the shaft. Even then it is sometimes unreliable because of the lack of a key fit. Do not bend the reed edge stops to allow your reeds to open further. The stock stainless steel petals are good, but if you bend the stops you could open up a whole bag of worms. Moto-X Fox recommends Golden Spectro at 37:1 and the use of a Moto-X Fox Poly Foam air filter. The peak power will be at 10,000 rpm.

## SUSPENSIFUL SUSPENSION

The world has waited for a good accessory replacement for the stock



Night and day, black and white. Shock and shocker, the Fox Airhex are worth \$225.



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Off of Racing World's latest jump the Moto-X Fox mono-mods soaked up the landing with ease. Check out the ground clearance, which means there is travel left.



Yamaha moi shock. The \$225 Fox Airshox is better than stock. It comes with a complete manual of info and adjustments and makes the stock springs look like a springer. The Fox makes it an easy fit, but if you follow the instructions you'll be pleasantly surprised. The Fox team bikes use the Airshox and it has been proven in the toughest competition. The shock should be dialed in a little soft so that you can adjust to the ride characteristics.

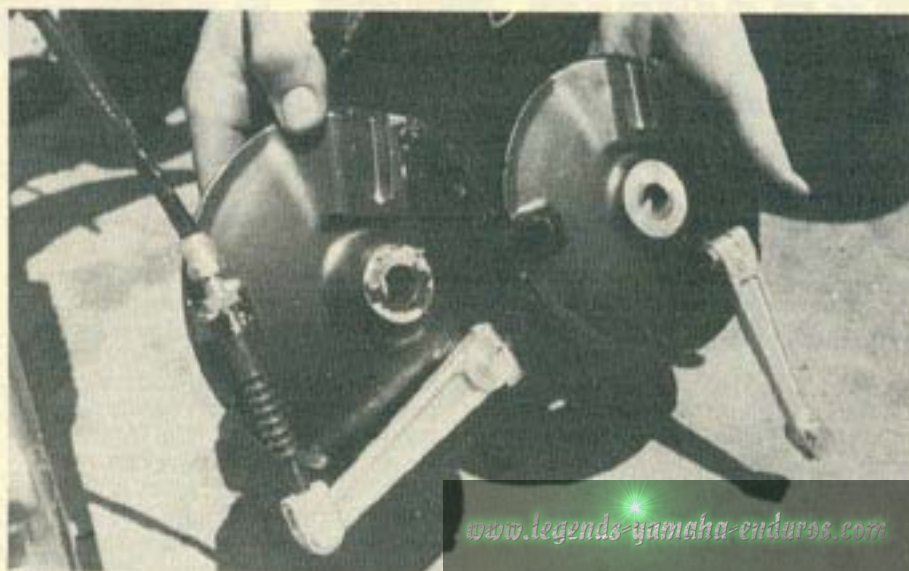
The Fox team bikes also come with Simons forks. The \$326 Simons setups are the best aftermarket front forks available today, but there are a few problems that we had to work out on our own. The Simons forks are so long that you have to get a YZ250 front brake cable to reach the front wheel. Also, the Yamaha backing plate must be machined to fit in between the yellow Simons sliders. Moto-X Fox offers this service, or your local machine shop can do it for you.

We ended up making one piece ourselves. The brake stay on the Simons forks is a metal block that slips into a slot on the backing plate. This block keeps the brake panel from spinning and serves the same purpose as a brake anchor arm. The metal block that was supplied with the Simons forks was not machined to a close enough tolerance to avoid an annoying clicking sound and slight movement when the brakes were applied. We whipped out a much larger and better-fitting block of our own.

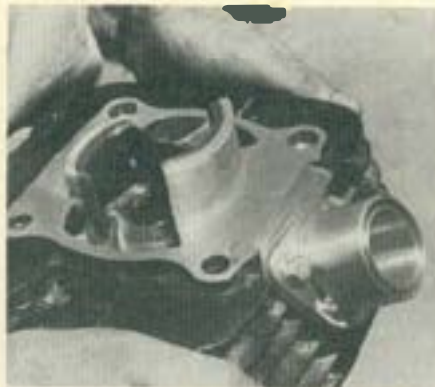
#### THE RIDE CLYDE IS A SURPRISE

The suspension is in excess of 11 inches at ached, and the result is a 125 with a wheelbase of over 57 inches. The YZ125's previously great turning is gone. The bike now seeks a bit of requires a large patch of JT fuel from the gas tank coming into turns. But this is the price that you have to pay to get supreme suspension. Whoops, jumps, ruts and other tricks are dealt over without the slightest fens. The feeling of the forks and shock is confidence-building. The long wheelbase and increased rake also help the bike's rough-terrain stability.

The new engine is fast and competitive. Paired with the cog legs, nothing can touch you down a rough straight. The gears are 100-percent usable than they were with the stock engine. There is a nagging gap between second and third that ridiculous use of the clutch will get you over. Coming out of a fast second gear corner, second is too high and third wants to bog, but it is a problem that you would have solved on the stock YZ by staying in second. At least you now have the grunt to clutch your way out in third.



The shock front backing plate (left) must be machined down to slip in between the Simons sliders.



The secret and super-effective exhaust hanger. This shiny aluminum item could account for 1/2 horses throughout the range.



The Moto-X Fox cylinder head has 62-percent more surface area than stock. That makes a difference on the thermometer.

Moto-X Fox has proved this unit in the hands of the most talented 125 privateer in the country. Darryl Turner rode it to first place. The Junior riders were not as overwhelming in their approval of the total package. The loss of the turning ability and rapid increase in speeds, mixed with tricky shifts, made more than a few novice testers dislike



The nitrogen, or nitrogen valve, sticks out of the frame through a hole that you must drill. Be sure to follow the instructions. It is murder to get that little braided hose through the hole.

the machine. The intermediates loved it. It had power and suspension by the bootload, and they had the developing talents and skills to pull it off. The Expert riders believed that it was one of the few nationally competitive Yamaha 125s. All agreed that it was head and shoulders over the stock YZ125E.

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# MAKING THE MONO BETTER

## DG's OW REPLICA KIT 125

### Water-cooled moneyburner

□ You can't afford it if you could afford it, then it probably wouldn't be worth it. The DG OW Replica kit retails for \$750. The OW kit is a virtual copy of the bike that Bob Hannah rode to his first 125 National Championship in 1976. It is a duplicate of the cylinder, piston, rings, head, radiator, side case and hoses that were driven into exile by

privateers and the AMA claiming rule.

Yamaha was so fearful of losing the water-cooled 125 to Mickey Doone that it has never been raced in America since. The works water-pumper now resides with Dutchman Gerard Floridon the Grand Prix circuit. Not surprisingly, the private Japanese development company of Noguchi, which is an unofficial arm of Yamaha, gathered up the pieces and put the expensive kit together. It sells directly to any Yamaha YZ125 O or E model.

People notice the bike some miles

away. It gathers crowds as soon as it is unloaded. Water-cooled heads have come and gone, but a completely water-cooled engine is new to the land of local racing. The chrome-lined cylinder has a water jacket that carries the fluid, either water or antifreeze, down from the radiator into the head, around the barrel and back to the radiator via a crank-driven pump. The water pump mounts in front of the clutch. The kit comes with a totally redesigned right side case.

### H2O, AIN'T TOO SLOW

This DG Replica is a rocketship. The exhaust noise is different from its air-cooled brothers' and you can hear the high-pitched shriek from way down the track. There is more power sooner, and a much broader powerband than the stock curve. The bike literally chewed up the competition down the



From the left-hand side he only gives away that something is in the works is the belgian, perforated front number plate.



The number had to be cut out of the background and a million holes drilled to ensure adequate ventilation. Even this is the minimum airflow level.



The aluminum alloy cylinder is a sandwich of water and chrome. The three hoses aren't the plumber's nightmare they seem to be.



straight, and although the Suzuki RMs pulled stronger off the bottom and out of the corners, the DG OW Replica was more than competitive.

Three problems raised their heads during the developmental time in the States. The test riders complained about the weight of the radiator and its fluid resting on the triple clamps. Yet, Haimah seemed to cope with it back in '76. Secondly, the pump-action came apart several times due to a faulty locking pin. DG head wrench Harry Klemm finally manufactured his own pin and reported the solution to Noguchi. The final problem was, in fact, a stumper. The radiator could not take the abuse. For a factory elder with a squadron of road and off-road racers racing in his track, the radiator leaks and stress fractures weren't a problem, but before DG could sell the kit the breakages had to be eliminated. The aluminum clamps that held the radiator were beefed up first, but the radiator continued to fracture.

The ball was passed back to Japan, where Noguchi vowed to return with a stronger, fully enclosed radiator to meet the rigors of American motocross. The kit will not be for sale until the Japanese engineers can guarantee a reliable package for the average rider.

No average rider is going to need the OW Replica. The bike is for the connoisseur, the collector, the history buff or the psych-out artist. It is the stuff that dreams are made of.

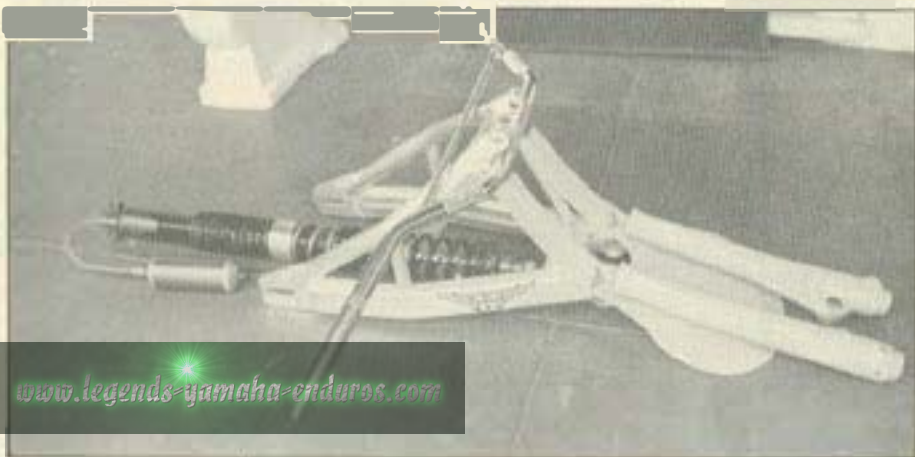
# AL BAKER MAKES ENDS MEET

## YZ125 suspension kit

□ For Al Baker, life's always a little softer, a little better, and a lot plusher than it is for everybody else. Not that Al is the H.L. Hunt of motocrossers, but Baker thinks of every aspect of life in terms of suspension. When a new bike comes out it is immediately taken out to his desert motocross track and whipped to the point of fork and shock frenzy. The mass-produced shortcomings are found, and carefully formulated solutions are applied. No one understands the workings of the front and back of a motocrosser as well as Al Baker.

The YZ125 in stock form has a set of forks that express the elementary designs of hydraulic damping, and then try to correct for their shortcomings with compressed air. A fork was once the hot setup, almost the rage, of the motocross world. It was a sad that inventive Americans tried. The Japanese saw it as a marketable addition to the line and it is here, Baker loses the air spring forks in favor of a totally progressive spring machine to exacting machined fork internals.

The stock YZ forks give slightly more than 8½ inches of travel. The Baker modification increases that travel to about 10 inches, but more importantly brings about a marked improvement in



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Baker R&D can supply anything you need for your YZ125, from fork skins to Biorubber-endored swingarms.



The special Al Baker fork kit includes new springs, damper rods, oil, and almost two inches more of travel. The stock suspension needs the help.



The new 1979 Yamaha's will have Yamaha stenciled on the side just like this Japanese version. The DG OW replica was outfitted with YZ250 forks and a full reservoir.



When you come out for your Sunday ritual the OW Replica makes you look good.



# MAKING THE MONO BETTER



The total fork and shock mods will run you a little over \$200. Compared to the efforts of others it is inexpensive and effective.



Our poor, worn-out mono received a total fix with the injection of needed oil, a red reservoir, Baker's special dual mono springs and aluminum spacer. It still looks worn-out, but it can't.

## AL BAKER R&D MONO MODS

YZ125 fork kit	\$59.95
Complete mono-mod (red reservoir)	\$148.00
Complete mono-mod (gold reservoir)	\$158.00
Red reservoir installation	\$75.00
Gold reservoir installation	\$85.00
Dual mono shock spring	\$20.00
Alloy swingarm for YZ125	\$165.00

the dampening action. The Baker YZ125 fork kit costs for \$59.95 and includes a high-quality and truly progressive fork spring, a new set of center rods that have been machined with a taper to allow the forks to work when they should and return quickly and positively when the works done. PJ1 fork oil in the proper viscosity for the YZ's stroke and a complete set of instructions. The same kit is also available for the YZ250 and 400, along with a full 2-inch kit for the big bikes. The 125 kit only comes in the 10-inch kit because efforts to increase the travel to 11 or 12 inches resulted in a machine that was unportable and difficult to turn. Given the firm is and geometries of the current YZ125 and E frame, 10 inches is the magic number to maintain precise steering geometry.

Blot Gover's mechanic, Jim Fell, used to work at Al Baker R&D, so Baker is in touch with the happenings and events in the world of Yamaha. The mono shock is here to stay, but its shortcomings are known to everyone who rides one. The YZ125 mono gives less than eight inches of rear wheel travel (a lot more is claimed, but not delivered), the overloading of the reservoirless mono seems to shear the oil polymers with six or four races, which breaks the oil down to the extent that the oil is a sludge that must be replaced to get the shock back up to specs, and finally, the large single spring is harsh in its dealing with small, pothole-like bumps. The problems are not insurmountable, but they require a complete program, not just a minor mod here and there.

The Baker mono shock mod changes the internal valving to spread out the return action of the shock, allowing it to follow the ground more closely and more securely for the rider. The internal modifications also increase the shock travel to generate 11 inches of rear wheel movement. The stock Yamaha comes with a travel limiter for that limits the shock movement to four inches. Baker machines a special travel limiter that increases the shaft travel to six inches.

A new dual-rate spring and an aluminum spring spacer are included in each kit. The two springs are designed to replace the single stocker. The smaller of the two springs absorbs the jolts and obstacles of up to four inches of travel. The second and larger spring then progressively picks up the ball and makes the transition to a full 11 inches. In addition, a remote reservoir is added to double the oil capacity. The

(continued on page 67)



## MAKING THE MONO

(continued from page 50)

Increase quantity of oil lessens the chance of loda and lengthens the shock's overall life expectancy. There are two reservoir sizes available — the standard red reservoir and the larger gold reservoir.

When the mono shock kit is reassembled it will return to the YZ a totally modified package (\$148). The dampening, valving, restrictors, springs, quantities and oil will have been changed. Each rod is also available separately. A specially formulated PJ1 mono shock oil has been blended to work within the confines of the big bearing. All you need to add is a blend of right wrist.

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There are two reservoir sizes available. The red reservoir is the standard model, while the gold is extra-large.



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#00-0008	"Expert" RM 400C	90.00
#00-0003	"Expert" YZ 125B, E	110.00
#00-0012	"National" YZ 125B, E	95.00

## TUNING MANUAL:

#50-1902 - Suzuki RM  
Tuning Manual \$5.95  
California residents add sales tax.

MOTO-X FOX

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