

# ON THE LINE: FOUR 125 MOTOCROSSERS

■ No racing class is more popular or more competitive than 125 motocross. At the top of the scale, the factories field professional teams, battling it out with exotic works bikes and top riders for world and national titles. At the entry level, 125 motocross is the logical starting place for the young rider who wants to take his first shot at real racing. In between, at every motocross track on earth, there are scores of young riders of all skill and financial levels, racing 125 because it's close racing at (for racing) reasonable cost.

This has brought out the best in machinery. Because the competition is close, and because 125 MX is the best selling competition class, the factories have been making improvements as they go. Every year, and sometimes during the year, we

see a constant stream of more power, stronger frames, increased wheel travel, sophisticated suspensions.

Better bikes, in short. And a class in which the differences are small. Winning sells, so it has come to pass that all the 125 motocross machines are good. Perhaps by chance, the four major makers this year have come out with competitive mounts, some new and some improved.

So 125 motocross is a natural class for a group test, which is what follows.

When we laid the initial ground rules we felt it only fair to invite all the U.S. importers offering 125s. Thus, our test wouldn't be a comparison of machines from one country, but a cross section of machines available to the public.

Calls were made extending an invitation to compete, then follow-up calls were made. Some manufacturers were invited as many as five times. When the first day of testing rolled around we had four 125cc motocrossers, all from Japanese firms.

Since the mass-produced 125s probably account for 85 percent of new sales of 125s, the test is still worthwhile, but participation from a couple of the European more manufacturers would have added flavor.

As mentioned, 125 is popular at all rider levels. To best compare and evaluate the entries, we used six test riders rated on as wide a skill level as there is in actual racing.

Top of the class was Steve Bauer, a CW contributor who is usually the rider in our motocross test photos. He's a full-time professional, running the national circuit this year under the DG banner. With him came a college student who races his own 125, three high school racers rated expert, intermediate and novice, and a 16-year-old who's been riding since he was 10 but has never raced.

The first lesson learned here was that 125 motocross mounts are real racing bikes. They are highly tuned. They need constant maintenance. The power bands,



Kawasaki KX, Honda CR, Suzuki RMN, and Yamaha YZF Go For It







**Honda CR125R**



gear ratios, suspension settings, etc. are dictated by the demands of motocross racing. They are suited to young and agile riders, preferably as light as possible. (With a 200 lb. bike, the 125 lb. rider has an advantage over the 185 lb. man that no tuning skill can overcome.)

The 125s are demanding to ride. Our beginner has countless hours on enduro and trail bikes. He's done play races with his pals on their trail bikes, and he's a match for them. But when he went out on a track, on a racing bike against other racing bikes ridden by guys who've raced before, they went past him so fast he couldn't believe it.

"Too slow," he said. "Not the bike. Me. I can't keep up with those guys."

Perfectly normal, we assured him. Couple hours on the track and you'll pick it up.

But, Keep in mind for the comments that follow: First, a 125 motocrosser is not a trail bike or a play bike. It's suited for one

place, the track. For any other use, an enduro model will work better.

Second, no matter how good you are in the woods, unless you're the Bob Hannah of Tomorrow, even the novices will likely leave you in the dust for your first few races.

These are serious motorcycles.

#### **HONDA CR125R**

When Honda introduced the CR125 back in the early seventies, people were awed with their trickness. The little Elsinores soon ruled the 125 motocross class and demand was unbelievable. As the years rolled by, Honda seemed content with minor updates each new model year until it became almost impossible to sell a CR125. The Suzuki RM125 offered a bike with more modern suspension and the class changed from red bikes to yellow ones.

For 1979 Honda offers an all-new 125 motocrosser called the Elsinore CR125R. Like its 250cc big brother, the R stands for replica, meaning it is similar to Honda's 125 factory racers. Naturally the new berm basher is bright red, even the engine.

The 'R' has 11.0 inches of travel at both wheels and will surely eliminate the biggest complaint racers voiced about the pre-'R'—lack of wheel travel. Forks are leading-axle type with good accordion boots protecting 37mm stanchion tubes and the triple clamps have double pinch bolts. Shocks are air/oil and mounted in a lay-down position.

Wheel hubs are a conical design and the rear has the drive sprocket and brake on the same side. Smallish spokes lace the hubs to aluminum rims and Bridgestone tires with a tread pattern designed by Honda. The rear is an 18 in., the front a 23 in.

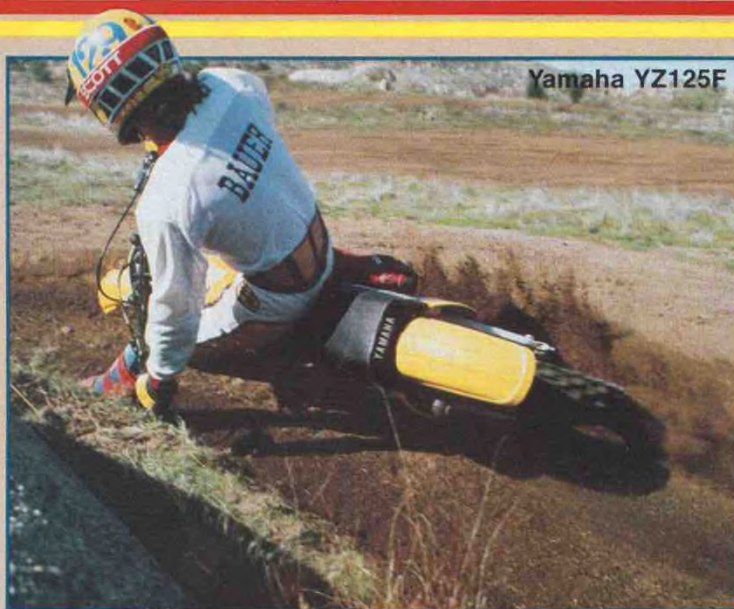
The 125 frame looks like a 250 CR frame



**Suzuki RM125N**







Yamaha YZ125F



that has been shrunk; it has a large, single front downtube and backbone that forms a T-shape under the seat. Triangulation isn't as good as some designs. The swing arm is built from rectangular chrome-moly steel and pivots in needle bearings.

Like the rest of the bike the engine is completely new. Center cases and outside covers are small and form fitting, the countershaft sprocket is placed close to the swing arm pivot. The radial-fin head design has most of the fins originating from the center. Since most of the heat is generated at the center of the head, it seems logical for the fins to begin at the source. A single ring piston rides in the chrome-lined cylinder. The piston has an arched rear skirt so fuel can begin filling the lower end on demand. The piston has a long skirt so the arch doesn't shorten piston life or allow rock.

A 32mm Keihin carburetor feeds fuel to a reed cage that holds six stainless steel

petals. The rod contains needle bearings top and bottom and big main bearings are used. The clutch basket is shock protected with coil springs and primary drive is by straight-cut gear.

The newest Elsinore is loaded with niceties: six-speed transmission, full-floating rear brake, aluminum chain rollers, aluminum kick start and shift levers and soft grips.

Plastic parts on the CR are flexible and well finished. The front fender works well but the rear is a little too short for good mud protection. Strangely, FIM-legal side number plates aren't furnished. This apparent oversight somehow gives the new bike an outdated look.

Like the Kawasaki, the CR doesn't feel like a small motorcycle. With a seat height of 37.2 in. and a wheelbase of 56 in. it is a large machine. Weight is 209 lbs. with a half tank of gas. We weighed it twice because no one believed it could weigh

that much. It *looks* lighter than the competition but is the heaviest of our four test bikes.

#### SUZUKI RM125N

For the past few years the Suzuki RM125 has enjoyed the distinction of being *the* 125 motocrosser. It has been updated yearly and for '79 it is mostly new. Past model designations have been labeled with letters: first the 'A', then the 'B' and last year the 'C'. Seems logical for the 1979 version to be called a 'D' but Suzuki chose to call it the 'N', their way of telling the buying public the new bike is radically new.

Like its larger brothers, the little RM sports leading axle forks with 11.2 in. of travel and 38mm stanchion tubes. They have air caps and offer adjustability by changing oil weight, volume and air pressure.



Kawasaki KX125







**Honda CR125R**

The rear suspension has 11 in. travel. Shocks are remote reservoir KYB jobs in a radical lay down, mid swing arm position.

The beautiful extruded aluminum swing arm (also like big brother's) is strongly cross-braced and pivots in needle bearings.

Even the chrome-moly steel frame is new. Steering rake measures 30° on the works look-alike.

The RM engine uses a piston port/case reed induction system. This allows mild porting for good low-end response and added fuel from the reed for top-end power. A solid skirt, two-ring piston can be used with this type design, since fuel dumps directly into the crank cavity. Because the piston isn't arched or ported, it

should last longer.

A steel lined cylinder is still used and several rebore's are possible. Porting has changed only slightly from last year. The high pipe has also been redesigned to improve torque. Ignition is CDI and carburetion is via a 32mm Mikuni. The whole package is compact and the countershaft sprocket is rear-set.

The chain is well cared for by a conventional chain guide, front mounted chain tensioner, and a plastic roller mounted on top of the aluminum arm.

All plastic parts are new for '79; fenders are longer, wider and deeper. Tank shape is redesigned to make sliding forward easier and the side number plates are rear-set.

Hand levers and throttle are about the



only things unchanged from '78. They work okay but aren't as good as the dog-legged ones Yamaha uses. Handlebar shape is flatter and they are painted a nice silver.

Foot pegs have been a weak spot on past RMs. The 'N' has good cast steel pegs that won't start to droop after a few races. They have a large bearing surface, extra heavy return springs and a fine saw-tooth top.

A new steel brake pedal is routed behind the foot peg and operates a rod instead of a cable. Forget about lost kick starter levers: the problem has finally been cured. The unit now completely circles the kick shaft and a 6mm bolt threads into the shaft center. Too bad they didn't put some raised ridges on the part that contacts the boot



**Suzuki RM125N**







sole—it's still smooth and slippery like before. Inexcusable.

The new RM125 looks like a larger motorcycle than before but doesn't feel as large as the KX and CR. Bars that are narrow and low give the illusion—wheelbase and seat height are almost the same as the KX.

#### YAMAHA YZ125

The Yamaha YZ125 has been a popular bike since its introduction in 1975. For '79 many mechanical changes have taken place. Styling has also changed: rear-set side plates and yellow fork boots tell the prospective buyer it is new, but it doesn't look as new as the Honda, the Kawasaki,



Yamaha YZ125F

or the Suzuki. The shape of the plastic gas tank, although a pleasant design, doesn't match the works look of the other three.

Yamaha claims a 20 percent increase in horsepower and a broader power band for the '79 YZ125. What they don't tell is the actual horsepower figures. A radial-finned head with a centered spark plug rides on a steel lined cylinder. Steel liners add weight but allow for reboring due to wear or a mechanical mishap. Yamaha lists four oversize pistons for the 125. The piston uses two thin rings and Yamaha recommends replacing them every two races. The rear of the piston has an arched skirt so the four-petal steel reeds can start dumping fuel into the crankcase on command. An arched piston doesn't interfere with fuel

flow like one that simply has ports in it, but the arched one doesn't have much skirt left either. Piston rock is controlled by two small edges of the piston skirt.

Engine cases are tightly shaped around the large clutch, full-circle crank and close-ratio six-speed transmission. The countershaft sprocket is placed rearward and sits close to the swing arm pivot. Ignition is naturally CDI and carburetion is by a 32mm Mikuni. The primary kick start lever pedal has raised cast-in ridges.

A wishbone downtube, chrome-moly steel frame surrounds the little powerplant. As before, a large backbone tube doubles as frame member and home for yet another new design monoshock.

The new shock has a ribbed body and



Kawasaki KX125



damping can be adjusted with a flat blade screwdriver through a hole just under the front of the tank. Spring preload is also adjustable but shock removal is required. Yamaha offers a stiffer and softer spring as an option for riders who feel a different spring rate would help them.

Swing arm material is box-section aluminum and thick plastic blocks protect it from chain damage. The chain guide also has a thick plastic liner and the unit is placed close to the rear sprocket. A stationary roller controls chain tension.

The rear hub is conical and carries a rod operated, full-floating brake.

Forks are leading-axle air/oil Kayabas with 9.8 in. of travel. Triple clamps have double pinch bolts and the top one has rear-set bar clamps, making fork maintenance easier and providing room for height adjustment

of the 36mm fork stanchion tubes.

A comfortable seat and large plastic fenders pamper the rider and make long outings enjoyable. The monoshock design makes for a machine that is very narrow in the mid-section below the seat and moving around on the bike is easy as a result.

The 125YZ has a "smaller than the rest," feel to it, but comparative measurements don't back this up. The YZ's seat height is only 0.5 in. lower than the Kawasaki and Suzuki. Handlebar width is the same as the Honda, and most other measurements are close. Maybe the flat top tank shape is responsible for the smaller feel. Everyone in the office played the "guess which one is lightest" game. No one picked the YZ. Guess what, the YZ is the lightest of the four, weighing in at 200 lb. with a half tank of fuel.

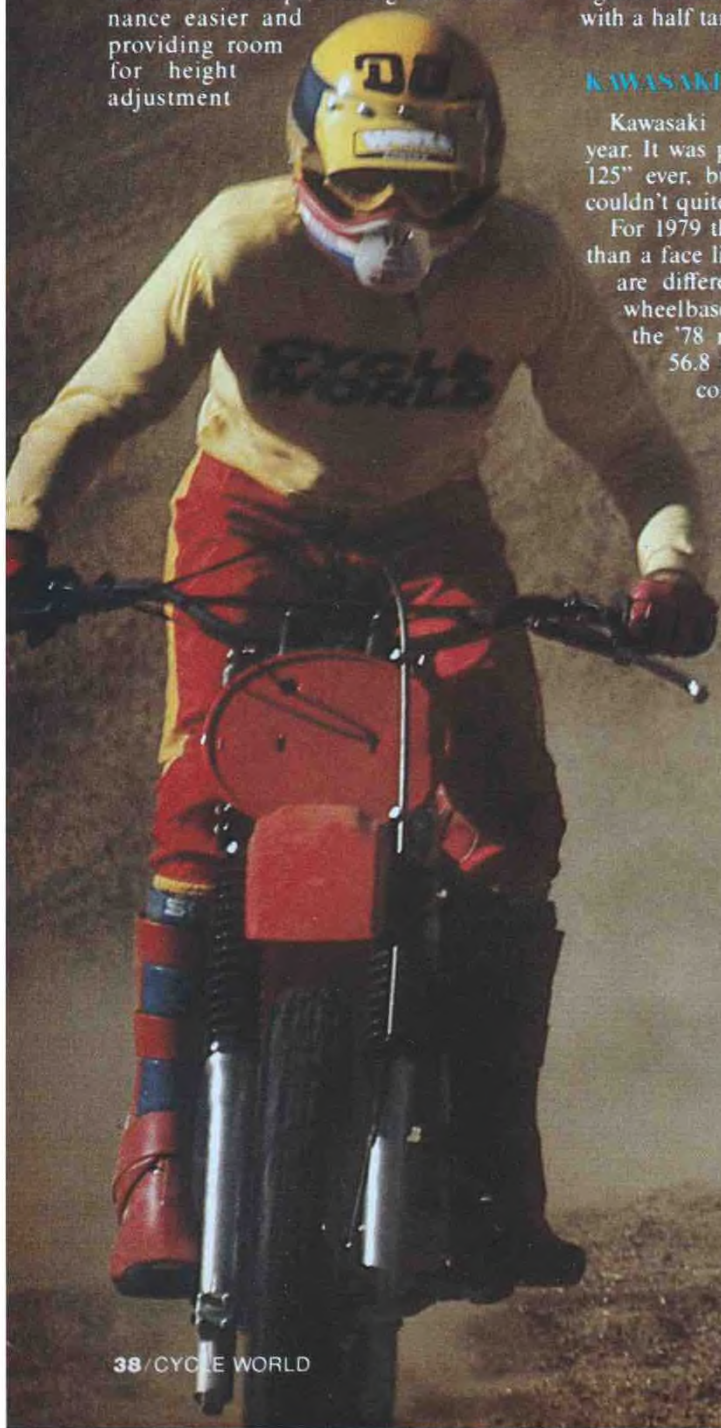
#### KAWASAKI KX125

Kawasaki introduced the KX125 last year. It was probably the best "first year 125" ever, but good as it was, the KX couldn't quite match the Suzuki RM125.

For 1979 the KX has been given more than a face lift; almost all measurements are different. The biggest change is wheelbase, up almost two inches from the '78 model. With a wheelbase of 56.8 in. the 125 KX can't be considered a small bike,

and it doesn't feel small; more like climbing aboard a 250. Most of the increase in wheelbase is a result of a longer aluminum swing arm. The arm has been lengthened without changing the relationship of lower shock mount and axle, that is, it has been lengthened between the pivot and the lower shock mount. With this come longer shocks, mounted at more of an angle. The new arm and longer shocks give added rear wheel travel, from 8.5 in. last year to 10.5 in '79.

Fork travel has also grown 0.8 in. and now measures 9.8 in. Although travel has increased, engagement hasn't decreased. Rather than simply pull the stanchion tube out of the lower casting, gaining travel and losing engagement, Kawasaki chose to retain over 5.5 in. of engagement and cast new lower legs. The new castings have extended bottoms, allowing the stanchion tube another 0.8 in. of travel. This is an expensive way to increase travel, but it is the right way.





The lower triple clamp is unchanged, the top all new. The new one has double pinch bolts and rear-set handlebar mounts. Handlebar shape is also new. Some riders will like the bend, others won't, but they feel right for most.

The KX frame is basically the same, with numerous changes and modifications. Rake has been steepened to 29°, from 30° last year. A tube and flat bracket have been added across the triangle section under the seat. Additionally, the shock mounting boss has been lowered and different bracketry has been added for the seat and

side number plates. Tube diameter and material remain unchanged and tapered roller bearings are still used for the steering stem.

Even the plastic airbox has been improved. The foam filter is now serviced from its top by removing a pull pin.

Engine modification for '79 is much greater than what shows on the data panel. A six-petal Boyesen reed valve is still stock, so is an Electrofusion cylinder that allows closer piston to cylinder tolerances and weighs less than a steel lined type. Cylinder porting and timing aren't changed. The carb is again a Mikuni with 32mm venturi, but the '79 model has a bell-mouthed inlet; it expands between venturi and mounting flange. We assume it's something to do with increasing flow

through the carb, although the factory tech guys were vague about it. The crank assembly is new: same weight but the web's outside diameter has been increased from 87 to 90 mm, and web width is narrowed, 22 to 21.7mm. The side of the connecting rod has been modified for better lubrication of the crank pin and the larger crank fits inside new cases.

Transmission ratios have been juggled to eliminate the bog and make better use of engine output. First, 2nd and 3rd are now higher, making low just right for starts and tight corners. Fourth, 5th and 6th are the same internally but read differently on the data panel because the '79 has a three-tooth smaller rear sprocket than the '78 model, thus changing the figures overall.

A new pipe with a smaller diameter headpipe and expansion chamber modifications increase power at the top of the rev scale.

Fuel tank material has changed from aluminum to plastic and the new shape has increased capacity to 2.1 gal. A plastic cap with a vent hose is used and the vent nipple is recessed into the cap to prevent damage to the cap or rider.

Flashy is a good way to describe the little KX. The green, black and gold combination from last year has been expanded to include green grips, green fork boots, fork leg protectors and shock springs. All plastic parts are also green. A gold anodized aluminum swing arm and DID rims make the KX almost too pretty to ride in the dirt.

Trickery abounds on the little Kawasaki; bolt heads are dished, shaft centers drilled and aluminum is used for the brake pedal, swing arm, rear sprocket and chain guide. Nothing appears overlooked; chain rollers have sealed bearings, the rear brake is full floating, the kick starter has a ribbed end to prevent slipping, shocks have remote reservoirs, forks are adjustable with air. Dunlop K190 tires are stock and an excellent owner's manual is furnished.

Another holdover from '78 is the Kawasaki pricing system for the 125. According to the factory, there is no suggested retail price. The production run has been increased but the KX125 is still a limited model, and the idea is still that dealers buy them and sell them to racers. The lack of a list price may mean the dealer gets one for his team and you don't. Or it may be a hint that if you're serious, you can get a bargain.

Whichever, it's not much help when it comes to a comparison test. A few phone calls turned up a Santa Ana, Calif. Kawasaki dealer with a KX125 in stock, for sale. His sticker said \$1386, minus tax and freight, so that's the figure given in the



specifications chart and that makes the KX just about \$100 more expensive than the other three bikes.

## NOTES

As usual with a group test of racing machines, the main features of each entry are similar; two-stroke Singles, reed valves, use of lightweight components and techniques to save all the weight the average buyer can afford. In effect, the only major differences within the group are the 23-in. front wheel on the Honda and the mono-shock rear suspension on the Yamaha. A quick glance at the specifications chart shows test weights are within 9 lb. For the group, they're within 1 percent of identical weight distribution, they all have primary kick start, chrome-moly frame and oiled foam air cleaner, while none come with repackable silencers or rebuildable shocks.

No two tracks are the same, and no factory can predict what sort of terrain its product will be raced on, so it's fair to expect a production bike built to handle anything. Also fair to test at the extremes, which we did. Day One was spent on a rough track, an informal circuit built by amateur racers and never ever graded or prepared. It's hilly and packed with whoops and ruts and there is no straight to speak of. Tough to ride, and a good test of suspension.

The other track is smooth. Indian Dunes is nationally known and carefully prepared. It's flat and fast, built on sandy soil. Nice place to ride, although we sometimes feel it's too smooth and doesn't test suspensions hard enough. Good place for this group, though.

As a note on the human group, because weight is important on a light bike, it's worth noting that the pro tips the scales at 165 lb. vs 150 for the college rider, 140 for the expert and intermediate, 125 for the beginner and 110 for the novice.

Riders were sent out in rotation, to ride fast laps for impressions, then back to the pits for de-briefing and a swap of mounts. The same procedure was followed three days later, at the smooth track. Then we had some races, but because this is a racing group and winning is nearly everything, the results will be given later.

## IMPRESSIONS

### Honda:

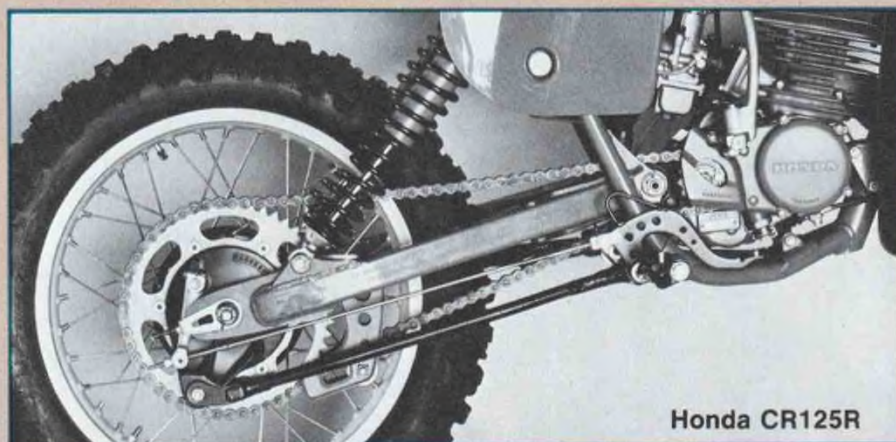
The pro thought the best part of the CR was the motor, which comes on smoothly and gives good power. Easy to ride, he said.

The mid-range group liked most of the bike. Bars and pegs and seat fine, they said, and the brakes don't lock or skip. The long travel paid off on the downhill, as the CR kept in a straight line even with both ends kicking up and down.

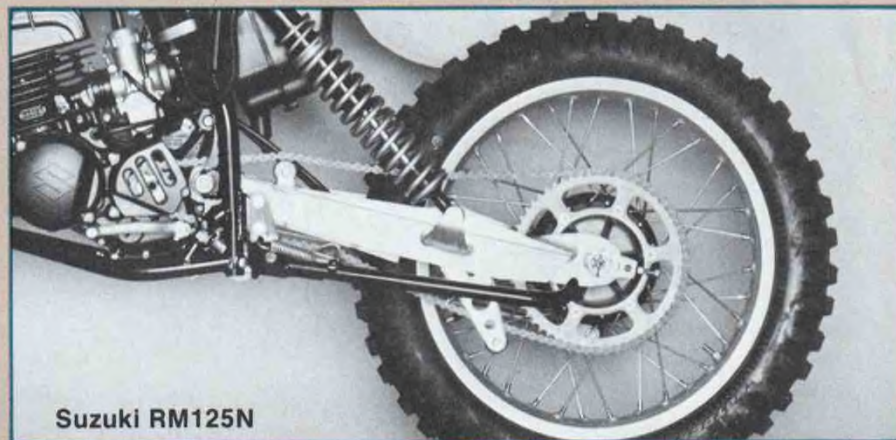
The younger two riders displayed the



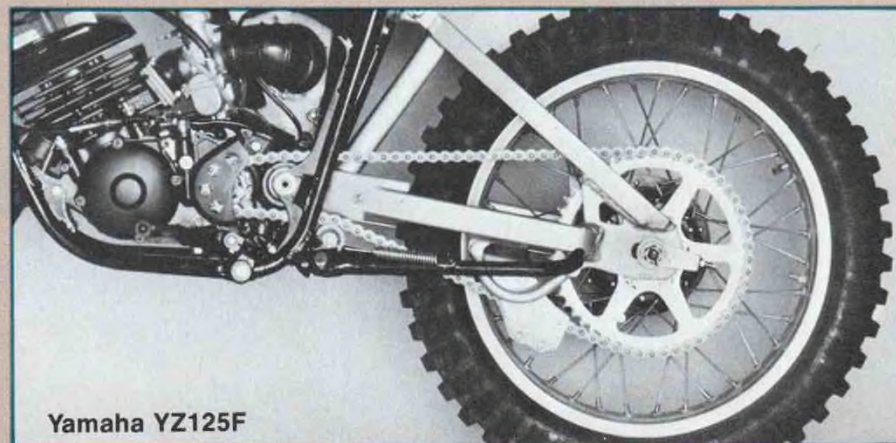
Kawasaki KX125



Honda CR125R



Suzuki RM125N



Yamaha YZ125F



**Kawasaki KX125**



**Honda CR125R**



difference of some racing experience and none at all. The novice reported that the CR came out of turns well, power just fine, as long as the engine was kept within the power band. The beginner liked the CR best, and found it easiest to ride except, he said, that the power caught him by surprise. He'd come through the turn with the engine revving too slowly, the revs would pick up and snap! there was the power and there came the front wheel, straight up. A serious bike.

All this is fairly mild praise. The criticism of the CR is more detailed.

It involves the CR's 23-in. tire, or the Honda-designed knobby tread, or the steep steering rake combined with the long trail of the big tire, or perhaps the frame.

What shows up is a handling difficulty, in the rough and on turns. The CR's front wheel skates. Doesn't have the bite the others have. Steering is quick, as it should

be with the steep forks, but the grip isn't there. Next, the front wheel had a wobble. The faster guys noticed it under heavy braking, on approaches to turns, which means the forks were compressed and the rake at minimum. The bars jumped hard enough to nearly yank the grips from the rider's hands.

The heaviest man didn't notice this. And the lightest rider said he had the wiggle even when he backed off on the throttle, which would load the front.

Our guess is a combination of steep rake, long travel, lots of trail and long tire footprint. The twisting force generated on turns by the tire against the bars makes it hard to keep the wheel straight. The wheelbase—second shortest of the group—helps the CR in fast and tight turns, but doesn't resist reaction to the front wheel. Honda believes in the big front tire, and has designed the CR125 (and the larger XRs

and XLs) around the 23. We are not sure this is good.

#### **Kawasaki:**

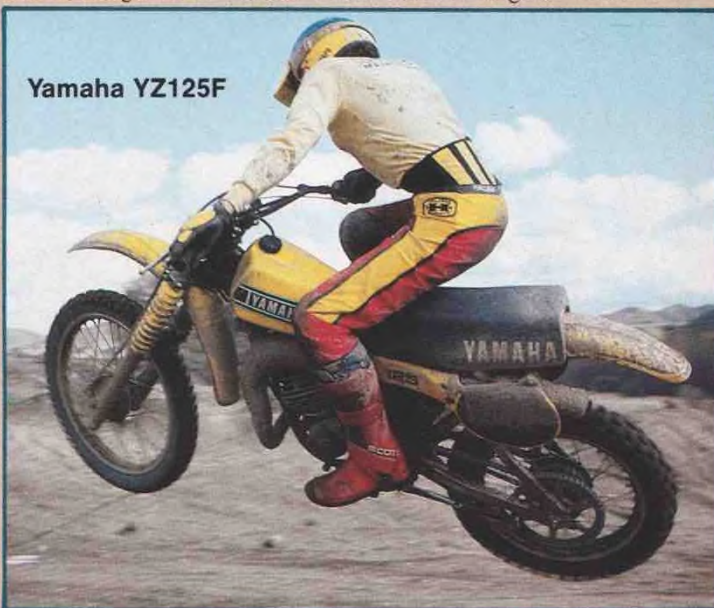
The KX125 has to be scored as a remarkable improvement. The pro felt right at home, right away. The KX is just a bit higher and longer and wider, so it felt as if it was made for a full-grown rider.

The KX tires worked fine on both the granite of the rough track and the mixed sand and mud of the smooth track. Shifting was just right, and didn't even need the clutch. Although wheel travel was third out of four, Steve wasn't aware of any shortcomings. The forks worked fine right from the truck. Although the shocks felt too stiff at first, they improved during the first few hours of break-in. The result was suspension that did its job well. Sort of a surprise, in a way, as we've become used to talking about wheel travel as a goal. Worth re->

**Suzuki RM125N**



**Yamaha YZ125F**





membering here that nine or 10 inches of properly controlled travel is better than 12 in. that isn't controlled.

Much the same on power. The KX engine doesn't have any more power than average and it's got the normal number of gears. But the powerband and gear ratios have been carefully matched. At any speed, if the rider has the correct gear the power is there, ready when you are.

The RM-owning intermediate said the KX steered more slowly than the Suzuki, the new one or his own, but added that to him that was a plus.

Three of the riders said the KX signed off earlier than the Suzuki while the Honda had more punch at the low-end. Newer riders reported the slow steering made the KX hard to turn, and the newest tester said the back end slid out under power.

There was something of a graduated effect with the KX. The larger (and presumably stronger) riders liked the size and had no reports of control problems, while as the testers got younger, they said the bars seemed wide, the grips too large, the brakes heavy.

What all the riders added was that the KX did everything well.

#### **Suzuki:**

The reigning champion begins with something of an advantage—it's assumed to be good because it's always been good—and a handicap—more of a reputation to live up to.

The pro was comfortable with the RM.

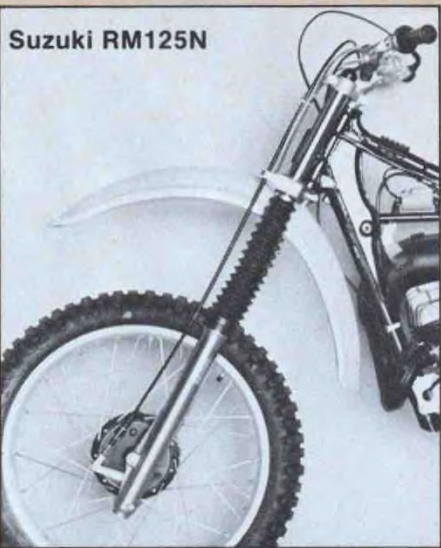
**Yamaha YZ125F**



Most responsive engine, he said, although because the ratios aren't spaced right, you have to be ready to ride around a situation that could get the engine over-revved or bogged down. He and the other two experienced racers liked the handling, as they could use the RM's quick steering to advantage. The front brake worked well and the rear brake tended to skip, especially on the rough with the front brake unloading the back of the bike.

The RM engine seemed to have the most power on top, compared with the others, while for some reason the lighter men felt the RM lacked punch at the low end while the beefiest guy said it had more

**Suzuki RM125N**



grunt than the others.

Both RM owners said the '79 is a major improvement, with more mid-range power and improved steering making the new bike easier to ride. The PE owner was even happier, as the motocross machine was just like his enduro bike except that the RM has more of everything.

Suspension came somewhere in the middle. "Nothing spectacular," says one note. "Straight on the whoops, but not as good as the Honda," says another.

The other riders felt pretty much the same way, as if when Suzuki gained a little here and a bit there, they smoothed out the RM to the point of having no major flaws,

## **The High Costs of 125 Motocross**

**A**ll our test bikes came with good owners manuals showing the owner how to perform most maintenance procedures and all but the Kawasaki had a chart telling when things like piston and rings should be inspected and replaced. Kawasaki feels rider level should be taken into consideration. A pro level rider should inspect and replace parts more often than a novice. A pro won't need a maintenance chart but it might be handy for the beginner and novice.

We ran our test 125s head to head for two days, a different course each day. Maintenance amounted to cleaning the air cleaners, checking nuts, bolts and spokes. Before the end of the second day the Yamaha was clattering and finally refused to start without pushing. The Suzuki started missing and occasionally shut off completely for a few yards. Later, tear downs were performed; the Yamaha's rings were finished. They were almost worn completely through. The Suzuki miss proved harder to find; in fact, we're not sure whether the electrical connections got

wet (we rode in mud the second test day) or the C.D.I. was defective. Next time out, it worked fine.

Because the Kawasaki and Honda were the favorites, we naturally rode them the most. Both were raced on a weekend. Steve Bauer won a 125 pro race at Corona raceway and Donnie Griewe and Scott Lantz won a Grand Prix team race the following day on the KX. Don and Scott ran the KX in the intermediate class and won overall against 250s and open bikes, so it was used hard. We found the swing arm bolt broken at the outside edge of the frame mounting gusset. We replaced it and went racing again the following week in the 125 pro and high school Senior classes. After an easy win in the high school class and a third in the pro, the swing arm bolt was broken again. Both bolts broke at the threads outbound of the stress point, indicating a problem with the bolt, or the recommended torque of 65 ft/lb. is too much for the hollow bolt. Load forces would have broken the bolt inside the gusset plate, not outside it.

We motocrossed the Honda in the beginner class once and a desert expert rode it in the desert two different weekends. After all our testing it came through unbroken. But, we know from the Honda maintenance chart, the top end needs rebuilding.

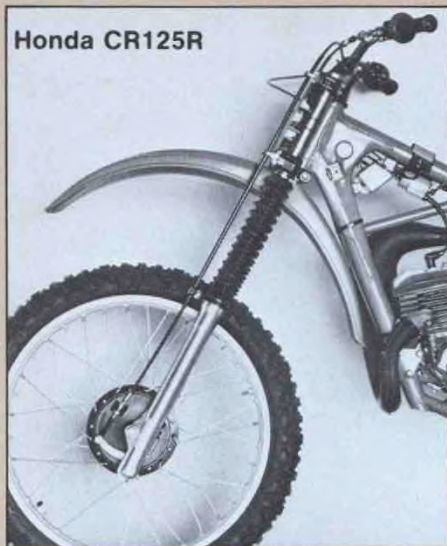
On the surface, 125s are a cheap way to get involved in racing. For \$1400 or so, a long travel, high horsepower, motocrosser can be purchased. Needed modifications will be few as most bikes are competitive in stock form for all but the pro class.

The thing the prospective buyer often forgets when considering the 125 class is maintenance. Current 125s are producing tremendous horsepower for their displacement. Some of them are producing in excess of 3.5 bhp per cubic inch. Most of them wind over 10,000 rpm to produce this much power and as you might suspect, they are highly stressed.

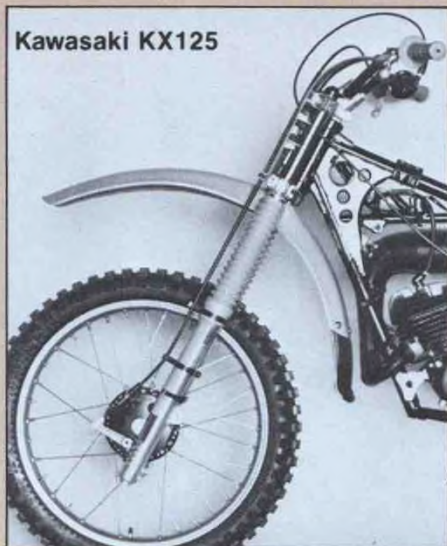
Following recommended parts replacement intervals for a year of racing will bring the price of these highbred racers into proper perspective. The 125 class may



Honda CR125R



Kawasaki KX125



and no major strengths, either.

#### Yamaha:

The YZ125 didn't fare well. The factory won the national title during 1978 and the YZ has been a popular bike since even before the monoshock went into production, but the production models have lagged behind the times.

Pro Steve Bauer said "The suspension just doesn't work. The forks are too soft and the back is too stiff. There's too much compression damping."

The suspension shortcomings showed up in several places. All the riders noticed the stiff back end, especially on the whoops, where the rear wheel kicked. Mid-

way through the first day the pit crew backed the damping adjustment all the way down, without telling the riders what had been done. Not one reported an improvement.

The faster three men all had trouble on berms, as the front end ran wide, up and over. No amount of muscle could keep the bike down on the line, and because the YZ is relatively low to the ground, the riders dragged the pegs, something that doesn't usually happen.

The engine worked well at top revs but seemed to lack power below that. The ratios were matched to the band, though. Both the largest and the smallest tester said

the YZ felt like a smaller bike, perhaps a 100, and neither felt this to be an advantage.

#### FINDINGS

These notes begin to sound suspiciously like absolutes. They are not. Because the riders say the Kawasaki feels big and the Yamaha feels small, or report that the Suzuki seems to have more speed than the Honda, doesn't mean one is huge and the other tiny, or that one is a bullet and the other a slug. We're working, after all, with four racing bikes that were built to the same rules and (we assume) for about the same cost.

What we have here is a general outline, a broad arrow pointing in the direction of . . . convention.

A blow to innovation. The chief complaint about the Honda is that the 23-in. front wheel with Honda tire and geometry to suit the wheel and tire, doesn't work as well in this application as does the 21-in. wheel that's been standard for years. Yes, the various brands vary, tread to tread and track to track. No doubt swapping 21-in. tires on the other bikes would alter their performance, but because Honda offers its own size and type, you can't swap and the CR buyer will have to use what he's got.

The Yamaha monoshock is different. There was a time when the monoshock was routinely regarded as a Good Thing. Yamaha has been working and changing the system for four years now, and although it's better every time, and can be adjusted >

be the most expensive class to race in. Yamaha and Honda recommend replacing the piston every three races; Suzuki says every five races. And a pro may have to do it each race to stay competitive. Compared to an open class machine that may go a complete year on the original piston, it doesn't take long to conclude the 125 rider

or his father, or brother, or friend, best have a well supplied tool box and mechanical knowledge to keep a 125 on the race track every week.

Add normal between-race chores like changing fork and transmission oils, lubing cables, bearings and levers, checking bolts and nuts, cleaning the air cleaner,

tightening spokes, washing the machine and replacing crashed parts, (we all crash occasionally) and some one had better have a lot of free time also. Perhaps this is actually a bonus; it is an excellent way to keep Junior occupied during the week.

	Every Race	Every Second Race	Every Third Race	Every Fifth Race	Every Ninth Race
Honda			Replace piston, rings, rear sprocket, spark plug, chain rollers		Replace top rod bearing, piston pin, countershaft sprocket
Kawasaki	Kawasaki does not have a set repair schedule. Replace parts as needed.				
Suzuki	Inspect spark plug	Replace piston rings	Replace rear sprocket, main bearings, chain	Replace piston, countershaft sprocket, cables	
Yamaha	Inspect piston, piston pin	Replace piston rings	Replace piston, chain	Replace top rod bearing, main bearings	



more easily than any of the factory shocks and most aftermarket shocks, there doesn't seem to be any inherent advantage to the monoshock system. We've wondered for some time if, perhaps, the actual benefit of the monoshock was not the shock but the two-plane swing arm. By the book, the upper and lower sections, braced and gusseted, are bound to resist flex better than the usual flat swing arm, other things being equal. What the other companies have done since Yamaha did the monoshock was not copy Yamaha. Instead they've done work on the old method. The current one-plane swing arms look to be working, and the current shocks fitted to the Honda, Kawasaki and Suzuki are good ones.

Repeating, although all racing bikes have gained wheel travel in (sorry) leaps and bounds, the useful maximums have been reached. All the machines in the group could be bottomed at speed on the roughest terrain, and all were soft on the smooth parts. That's as it should be. But



#### SPECIFICATIONS

	Kawasaki KX125	Honda CR125R	Suzuki RM125N	Yamaha YZ125F
List price	\$1386 (see text)	\$1275.	\$1279	\$1257.
Fork travel	9.8 in.	11.0 in.	11.2 in.	9.8 in.
Fork stanchion tube diameter	36mm	37mm	38mm	36mm
Rear wheel travel	10.1 in.	11.0 in.	11.0 in.	9.4 in.
Tire, front	3.00-21 Dunlop K190	3.00-23 Bridgestone Claw	3.00-21 Bridgestone	3.00-21 IRC
Tire, rear	4.00-18 Dunlop K190	4.10-18 Bridgestone Claw	4.10-18 Bridgestone	4.10-18 IRC
Engine	two-stroke Single	two-stroke Single	two-stroke Single	two-stroke Single
Bore x stroke	56 x 50.6mm	56.0 x 50.7mm	54 x 54mm	56 x 50mm
Piston displacement	124cc	124cc	123cc	123cc
Compression ratio	7.5:1	8.4:1	8.0:1	8.3:1
Claimed power	26.9 bhp @ 10,500 rpm	na	na	na
Claimed torque	13.4 ft. lb. @ 10,000 rpm	na	na	12.4 ft. lb. @ 10,500 rpm
Carburetion	32mm Mikuni	32mm Keihin	32mm Mikuni	32mm Mikuni
Ignition	CDI	CDI	CDI	CDI
Lubrication system	premix	premix	premix	premix
Primary drive	straight-cut gear	straight-cut gear	straight-cut gear	helical gear
Gear ratios, overall:1				
6th	13.85	12.39	12.72	13.71
5th	15.22	14.07	13.90	14.94
4th	17.51	16.11	15.83	17.13
3rd	20.25	19.28	18.77	20.56
2nd	24.82	23.23	23.28	25.70
1st	30.46	31.44	31.04	33.74
Oil capacity	1.1 pt.	1.5 pt.	1.7 pt.	1.6 pt.
Fuel capacity	2.1 gal.	1.7 gal.	1.7 gal.	1.6 gal.
Fuel tank material	plastic	aluminum	plastic	plastic
Swing arm material	aluminum	chrome-moly steel	aluminum	aluminum
Starter	primary kick	primary kick	primary kick	primary kick
Air filtration	oiled foam	oiled foam	oiled foam	oiled foam
Frame material	chrome-moly steel	chrome-moly steel	chrome-moly steel	chrome-moly steel
<b>DIMENSIONS</b>				
Wheelbase	56.8 in.	56.0 in.	56.7 in.	55.5 in.
Seat height	36.5 in.	37.2 in.	36.5 in.	36.0 in.
Seat width	5.5 in.	6.4 in.	5.6 in.	5.5 in.





the bikes the riders felt best on were those with the best balance of spring rate, damping and travel, rather than those with the most travel.

In the engine category, we settled the matter of maximum power with a simple test: a drag race from the starting gate.

There were no clear winners or losers.

The four bikes were so close that each time the first bike to the first turn was the one whose rider had gotten the best start.

Reports of speed and power are relative.

This became more evident for the actual races, which were held at Indian Dunes, the smooth track made average by heavy rain the day before we ran there.

Timed practice laps had the machines much closer than the riders, that is, the faster men did better on all the bikes than the slower men did. No point in having a full race.

Next, the timed laps were so close that one mistake, going a few feet wide here, having the rear wheel hook up and lifting

	Kawasaki KX125	Honda CR125R	Suzuki RM125N	Yamaha YZ125F
Seat length .....	23.4 in.	21.6 in.	19.6 in.	21.2 in.
Seat front to steering stem center .....	13.3 in.	14.0 in.	13.5 in.	14.0 in.
Handlebar width .....	33.0 in.	33.5 in.	32.5 in.	33.5 in.
Footpeg height .....	15.0 in.	15.9 in.	16.0 in.	14.8 in.
Footpeg to seat top .....	21.8 in.	21.8 in.	20.5 in.	21.5 in.
Footpeg to shift lever center .....	5.3 in.	5.5 in.	5.8 in.	5.8 in.
Footpeg to brake pedal center .....	5.3 in.	5.0 in.	5.4 in.	4.8 in.
Swing arm length .....	20.8 in.	22.0 in.	21.0 in.	19.0 in.
Swing arm pivot to drive sprocket center .....	3.4 in.	2.6 in.	2.7 in.	2.8 in.
Gas tank filler hole size .....	1.6 in.	1.4 in.	1.6 in.	1.7 in.
Ground clearance .....	13.0 in.	14.2 in.	13.0 in.	11.9 in.
Fork rake angle .....	29 deg.	28.0 deg.	30 deg.	29.5 deg.
Trail .....	4.9 in.	5.2 in.	5.2 in.	5.0 in.
Test weight w/half tank fuel .....	203 lb.	209 lb.	204 lb.	200 lb.
Weight bias, front/rear percent .....	47/53	47/53	47/53	46/54
<b>FEATURES</b>				
Forks adjustable with air? .....	yes	no	yes	yes
Rear shock damping adjustable? .....	no	no	no	yes
Rear shocks rebuildable? .....	no	no	no	no
Provision to check transmission oil level? .....	yes	yes	no	yes
Does owners manual show how to disassemble complete engine? .....	yes	yes	no	no
Does pipe burn rider? .....	no	no	no	no
Brake pedal height adjustable? .....	yes	yes	yes	yes





Yamaha YZ125F



Yamaha YZ125F



Honda CR125R



Suzuki RM125N



Suzuki RM125N



Kawasaki KX125

the front there, made more difference than the bike's potential did.

What we finally used was three-lap motos, flying start, with Pro Steve Bauer and Expert Don Griewe. Two bikes only, swapping back and forth to get the pattern. We reckoned Steve would get each bike to its maximum and Don would be right on his heels, as you'd expect with a pro and an expert.

Because each course is different and each track changes every lap, the times can't be treated as absolutes. Instead they show how the bikes compared against each other at the same time and place.

The winner: Kawasaki KX125, with a best time of 3:51.4. Best time for the Honda was 3:52.5, a difference of slightly more than one second. The Suzuki was two

seconds off that and the Yamaha was one second behind in its match with the Suzuki.

Close racing.

There is a clincher. The pro won all but one of the match races, as expected. But in one round, with the pro on the Honda and the expert on the Kawasaki, the expert got a wheel inside the pro on the first turn, backing the more experienced rider off. There they stayed, as the Kawasaki had just enough extra to prevent the faster man from getting around. In every other contest that day, the best rider turned the best time.

Two qualifiers here: One, price. The bikes are close but it may happen that the beginning rider will need to buy the lowest-priced machine, which the KX125

isn't.

Two, preparation. Our pro is quick to point out that in the pro class, there is no stock bike. Everybody is using aftermarket shocks, special forks or triple clamps or exhaust systems or cylinders ported to Stage 12 or something. Steve agrees with the Kawasaki as winner, but if there was a category for most easily improved, he says, the Suzuki should get the nod.

Back with the winner, though, after saying this and meaning it, Steve took the stock KX to his home track and ran the pro class against the usual swarm of modified Suzukis, Hondas, Yamahas and Kawasakis.

He won.

So does the KX125.