

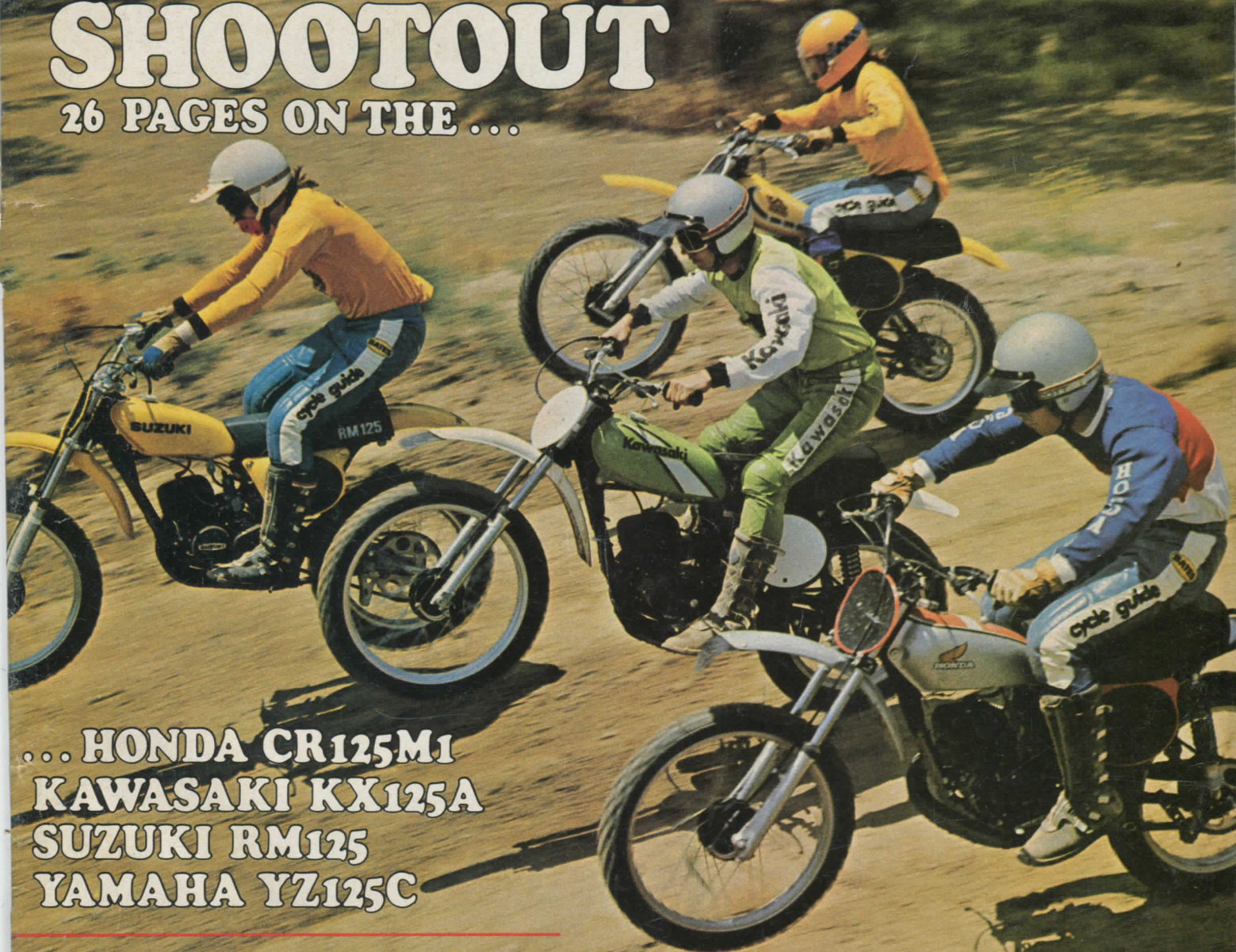
cycle guide

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BIG 125 MX SHOOTOUT

26 PAGES ON THE ...



... HONDA CR125M1
KAWASAKI KX125A
SUZUKI RM125
YAMAHA YZ125C

SAN JOSE MILE:

THE BLUE GROOVE TURNED ORANGE AND BLACK

CHICKEN MARKS GP MOTOCROSSERS

SU A NEW PERSONALITY FOR THE WATER BUFFALO

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CYCLE GUIDE MOTOCROSS COMPARISON TEST

125 MOTOCROSS



SS SHOOTOUT

The battle of Japan's best one-two-fives: Honda CR125M1
Kawasaki KX125A
Suzuki RM125
Yamaha YZ125C

SHOOTOUT



PHOTOGRAPHY BY DAVE GOOLEY, JOHN ULRICH, AND ART FRIEDMAN

As if you didn't already know, motocross is one of the fastest growing sports in the country. It's not hard to see why. Few sports combine action, color, speed, and finesse the way motocross does. And few sports equal motocross in ability to captivate young people, both as spectators and participants. Motocross is *real* for them. They don't have to be content to just watch, they can actually do it themselves.

The favorite bikes of teenage riders are the 125s. In fact, most 125 motocross races are dominated by high school and junior high school students. And if any "seasoned veteran" of motorcycling still thinks 125s are nothing more than noisy toys and their riders dumb little kids, he should truck his 250 or 360 down to the local motocross

practice track and get his doors blown off by 13-year-old Stevie Squid on his 125 Homazukasaki. As a further humiliation, he may very well learn that Stevie isn't even one of the 125 hotshoes—he usually finishes somewhere in the middle of the pack.

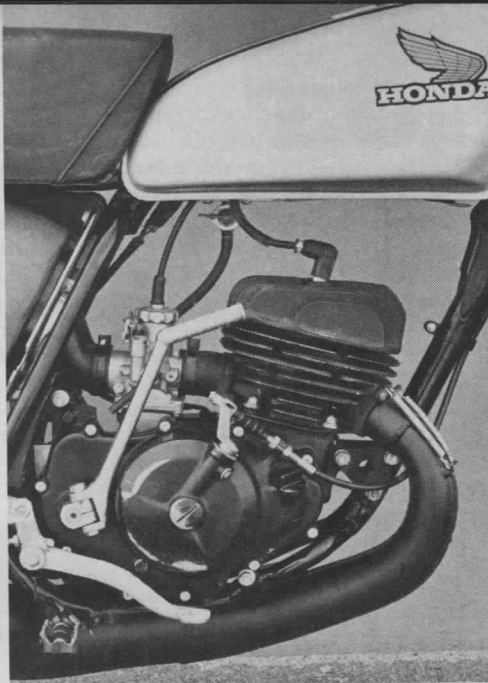
No sir, the 125 class is no longer the giggle of motocross. The bikes are every bit as exciting and exotic as any of the bigger ones. And thanks to the unbelievable performance delivered by some of these one-two-fives, some incredible young riders are developing.

Actually, youngsters have no doubt always possessed the innate talent to make a motorcycle literally fly, but they haven't had the proper equipment with which to do it until the last couple of years. Six

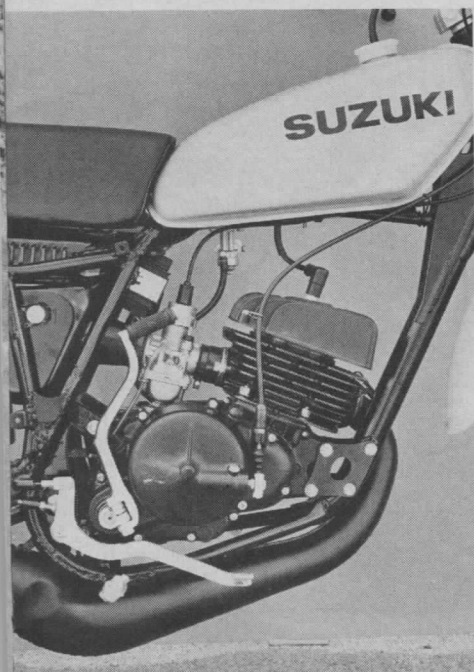
or seven years ago young dirt bike fanatics had the same fantasies as the kids do today—like soaring from a jump in a big crossup, Roger DeCoster-style, or shooting a 20-foot rooster tail while slamming off a big berm. Back then, such thoughts were definitely more of a fantasy than anything else, because performing such antics on the 125s of that day could lead you to the Emergency Ward quicker than to the checkered flag. But with the caliber of bikes and riders today, those aren't fantasies; they're reality. Those daydreams could actually be a rerun of what a 16-year-old student did during a High School Motocross clash with a rival school. And even if he really can't do all that farout stuff, it's probably his fault, not a deficiency in the motorcycle.



The YZ is the fastest of the four bikes, and its reed-valve induction also makes it one of the least temperamental and bog-free.



The Honda's engine is the second most powerful, and it accelerates the CR faster than all but the YZ on most smooth and moderately rough surfaces.



Even though it is heavier and has less horsepower, the Suzuki is faster than the Honda on really rough ground because of its superior suspension.



The Kawasaki has the smoothest, friendliest power delivery, and it gets off the starting line very well. But a very slight power deficiency and non-competitive suspension prevent it from keeping up with the others.



RM125 vs. the Yamaha YZ125C Monocross. Which one is the fastest? Which one handles the best? Which has the most suspension travel? And, of course, the only question that really matters: Out of the crate, which one of these gems of Oriental wizardry will lead you to more first-place finishes than the others? Finding the answers to those questions proved to be a fascinating challenge, not to mention a lot of fun.

THE RULES: Comparison tests can tend to produce somewhat uncertain results. The premise of a comparison is to force one motorcycle to emerge as *The* undisputed winner, but it seldom works out that way. It always seems the conclusion is that motorcycle A is the best, but motorcycle B would be better if you prefer orange and green, and motorcycle C would be the best yet if you had three thumbs, nine toes per foot, and only rode in a northerly direction on Tuesday mornings.

We didn't want that to happen, so we

The Japanese 125 motocross bikes in particular have come a long way in the last year or so, and have been the motive force behind the revolution in that class. The Honda 125 Elsinores clearly dominated racing when they were introduced about a year and a half ago, letting everyone else play catch-up, including the other Japanese bike companies. But looking at

some of the current 125s, we wondered if perhaps the game of catch-up had turned into a game of pass-up.

We decided to find out in the best way possible. We rounded up one each of the latest offerings from the Big Four to engage in a four-way shootout. It was the Honda CR125M1 Elsinore vs. the Kawasaki KX125A vs. the all-new Suzuki

SHOOTOUT



put everything right out front at the beginning. We were looking for only one thing—the 125 that could consistently get its rider around a motocross race course faster than the others. If it were the ugliest, the heaviest, the shortest, the noisiest—it really didn't matter as long as it was the first one around on every lap. Within reasonable limits, we weren't terribly concerned about the price, either. It doesn't make much difference how much or how little you spend on a motorcycle if you *really* want to win, because if you *don't* win, it's been a bad investment regardless of the amount. If you just want to have



some fun, that's a different story. You can have fun on nearly any 125, and should decide which one to buy based on your own personal considerations.

We lived with the bikes for a month, riding them for days on end, treating them like they were our own. Unfortunately, none of the *Cycle Guide* staff races a 125, so we let other people try them, including many 125-class racers. And we consulted with a number of other 125 competitors to find out what was needed to win.

We tried to keep track of everything that happened with the bikes so that in

the end, we could weigh it all and come up with a winner—*The undisputed winner.*

THE BIKES: From a basic design standpoint, there are some amazing similarities in all four motorcycles, yet they each retain enough individuality to have separate, distinctive personalities.

They all share identical bore and stroke dimensions of 56 by 50 millimeters, except for the Kawasaki, which ekes out another one and a half cubic centimeters by having a 50.6mm stroke. The RM Suzuki has a 7.4:1 compression ratio, the YZ's is 7.5:1, the CR125's is 7.6:1, and the KX125 wins the compression ratio contest at 8.0:1.

haust, and one booster transfer port at the rear of the cylinder.

The Honda and Suzuki both use conventional piston-port intake systems. The Suzuki's is the most elaborate, employing one intake fed by a 28mm Mikuni, one exhaust, and *six* transfers. The transfers form a ring of ports encircling the rear two-thirds of the cylinder bore.

The CR125 has five transfers, two on each side and one booster at the rear. A single intake and exhaust complete the porting, and a 30mm Keihin provides the carburetion. The YZ uses a single, one-millimeter-thick wire piston ring, and the

lighter, and without the need for an oil tank, the area beneath the seat can be put to better use. Since these little boogers are usually operated WFO anyway, it's easier and simpler to pre-mix the fuel and oil for maximum running and be done with it.

All four 125s have solid-state CDI systems—in fact, all but the YZ's Hitachi CDI look virtually identical, and all are mounted at the left end of their respective crankshafts.

Three of the four use downswept expansion chambers that terminate at the right rear of the bike. The YZ has one of



The induction and porting layouts of the bikes provide the greatest range of differences in their engines. The YZ125C uses a 30mm Mikuni feeding through a four-petal reed valve. The cylinder has one large intake port, two main transfers, two smaller auxiliary transfers, one exhaust, and one boost port leading upward from the top edge of the intake.

The Kawasaki uses a 26mm Mikuni on the right side of the engine, which carburetes through a crankshaft-driven rotary valve, directly into the crankcase. The cylinder has two main transfers, one ex-

others use two thick cast piston rings.

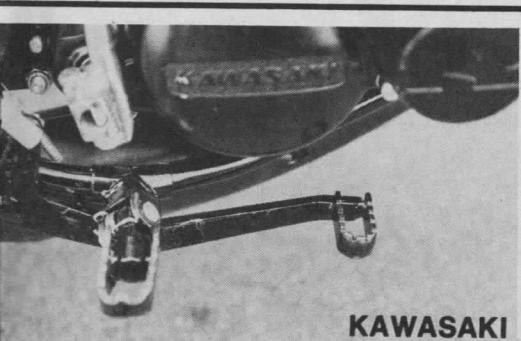
All of the machines use spur gears on the left side of the engine as a method of primary drive. The YZ has helical-cut gears, and the others use the straight-cut variety. The machines all have multi-plate wet clutches, primary (in-gear) kickstarting, and left-foot-operated, constant-mesh transmissions. The Suzuki has a five-speed box, the others are six-coggers.

None—that's right, folks—none of these bikes use any sort of oil injection system. Without the need for an injection pump, the engine can be made slimmer and

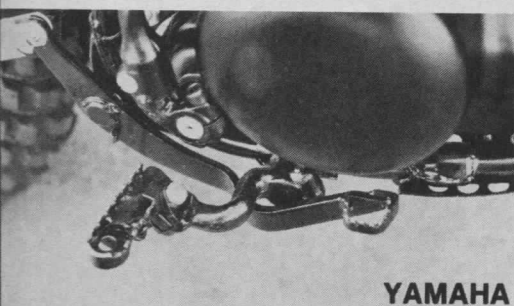
those snaky-looking, through-the-frame, upswept pipes common to all new Monocross Yamahas.

The YZ frame has double front down-tubes, while the others use a single front downer. The CR125 frame and swingarm are made of thinwall chromoly tubing, the others of mild steel thickwall tubing. This undoubtedly helps explain why the Honda was the featherweight at 179.5 pounds with an empty gas tank and oil in the fork assembly, shocks, and gearbox. The Kawabongi came in second lightest at 184.5 pounds, the YZ third at 187, and the RM

SHOOTOUT



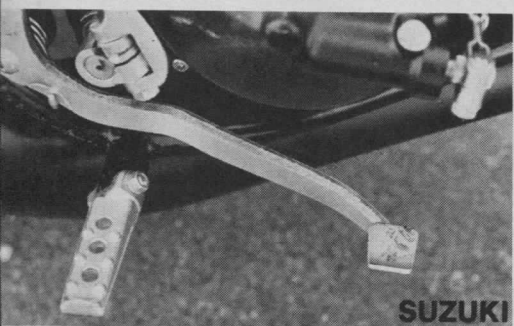
KAWASAKI



YAMAHA



HONDA



SUZUKI

The Kawasaki, Yamaha, and Honda have serrated, spring-loaded, open-loop footpegs. The Suzuki's are castings, with little bumps that don't hold your boots in place very well. Their lack of spring loading also makes them flop around when your foot is not on the peg.

fourth, tipping the Detecto at 189.

Geometry-wise, the bikes exhibit less Xerox-like sameness, but there are still some rather close similarities. The YZ has the rakiest steering head angle, 31.5 degrees, and ties with the Honda for having the most front wheel trail, 5.5 inches. The CR's steering head is steeper, though—set at 30.5 degrees. The KX 125A offers 31 degrees and 5.09 inches of trail, and the RM125 has 29 steering head degrees and 4.8 inches of trail. The YZ has the longest wheelbase, averaging 54.5 inches, the RM and CR average 54 inches, and the KX 53.6 inches.

The CR and KX use conventional rear suspensions and therefore do not have as much rear wheel travel as the other two. The KX's three-way adjustable shocks permit just 3.5 inches of travel at the axle, and the CR's four-way shocks give four inches of travel. The YZ's monoshock arrangement allows 5.3 inches of rear wheel travel, but no spring preload adjustment. And the RM Suzuki's forward-mount, lay-down, nitrogen-filled, inversely-mounted shocks have five preload settings and give a whopping 7.1 inches of rear wheel travel.

The front fork assembly follows the same sequence, with the Kawasaki's giving 5.8 inches of travel, the Honda's 6.5, the Yammie's 6.75, and the RM's 7.3. The Suzuki's fork also comes fitted with plastic protectors on the lower legs, which is a nice touch. The protectors don't look like they were made for the RM's fork sliders. They're held in place with just two loops of plastic tape, but they work and that's what counts.

The Yamaha and Kawasaki use conical front hubs and 3.00 x 21 Dunlop knobbies. The Honda and Suzuki both have full-width front hubs and Bridgestone rubber. However, the Honda wears a 2.75-section front knob, whereas the Suzuki sports a 3.00-section knob.

The RM has Akront shoulderless rims at both ends, while the others are fitted with equivalent DID rims. The YZ and KX come with 4.10 x 18 Dunlop rear knobs, and the other two are shipped with 3.50 x 18 Bridgestones. The YZ's rear brake is rod-operated, the others are cable-operated.

The 1.3-gallon YZ tank is lightweight aluminum alloy, all the others are steel. The RM has a 1.4-gallon capacity, the CR 1.6, and the KX 1.7.

Each bike has its own trick little air

cleaner arrangement tucked neatly away in some sort of airbox beneath the seat. The YZ uses two separate elements in a plastic, "siamesed" airbox designed to clear the monoshock unit. The Yamaha and Kawasaki use bristle-covered oiled foam elements, and the Honda and Suzuki have plain oiled foam.

All the 125s are equipped with folding, serrated footpegs, and only the RM's are not spring-loaded. The CR and RM have adjustable brake pedal height stops, but the YZ and KX do not.

The Honda has flat-black chromoly handlebars, the others use chromed mild steel bars. The Honda's front axle is offset toward the front of the slider tubes like a Maico, while the others are conventionally mounted.

Handgrips are a matter of personal preference, but the Honda's Doherty-type grips and the Yamaha's fairly-soft, waffle-pattern grips were the favorites. And if you took the brand names off all the seats and threw them into a pile, you'd have trouble telling which one belonged to which bike.

All the bikes have right-foot kick-starters, left-hand sidestands, single left-hand fuel petcocks, left-side drive chains, rear brake backing plates on the right side of the rear hub, front brake backing plates on the left side of the front hub, left-hand kill buttons, small gas tank filler holes with screw-on gas caps, and vent hoses on the gas caps. Only the Suzuki's fuel petcock has a Reserve position.

All the machines have unbreakable plastic front and rear fenders, side panels, and number plates. Only the Yamaha has no mud flap at the leading edge of the front fender.

The finish and workmanship of all four bikes are very nice, and even the welding—usually heavily ridiculed on Japanese bikes—is not so terribly bad. From the standpoint of appearance and apparent quality, they all seem on equal footing.

ENGINE AND GEARBOX: All four of the test 125s were insanely fast little creatures, especially considering their miniscule engine displacements. In American terminology, 125cc is equivalent to seven and a half cubic inches, which ain't much. A water glass displaces approximately 22 cubic inches, three times that of a 125. An average domestic V-8 automobile engine displaces around 350 cubic inches, 45 times that of a 125. Yet that 350-cube engine would be doing well if it could



generate even 20 times the power of these 125s.

All the bikes have the same cold-engine starting procedure. You must activate the carburetor enrichening device, leave the throttle closed, and kick. The Suzuki was the only bike to continually show any reluctance to start. We often had to kick it ten or twelve times before it would light off. The other three were consistent one- or two-kick starters, hot or cold. The Honda has an awkward kickstarter that tries to fold as it hits the footpeg at the bottom of its stroke. It often succeeds, and consequently snaps up and whacks you in the calf of your right leg.

The bikes share the same approximate first gear ratios, and all have about the same amount of low end power, so pulling out from a dead stop is nearly, but not quite, the same on each one. The Yamaha runs quite cleanly at low rpm, but has a small amount of flywheel inertia and a very quick clutch engagement, making it comparatively easy to stall. The Kawasaki is also light-flywheeled, but its clutch is more progressive and has a tad lower first gear than the others, so it pulls away easily. The Suzuki's clutch is very gradual, but the low-rpm throttle response is the least crisp, requiring you to slip the clutch a little more than normal. The Honda pulls away easily, perhaps second only to the KX.

In a straight line, the YZ was definitely the fastest of the group. In a motocross, the engine is not the only thing that decides how fast a bike can accelerate—the chassis, suspension, tires, weight, and rider all play important roles. But it seemed that regardless of who was riding or what the surface was like, the Yamaha could consistently outdrag all the others. Several riders remarked that they could recall riding some 250s that didn't feel as fast.

The Elsinore initially gave every indication of being the second fastest, but the superior suspension of the Suzuki allowed it to get from corner to corner quicker on rough surfaces, mainly because it kept its wheels on the ground more often. The Honda's engine felt more crisp and responsive, but the RM was putting everything it had onto the ground, whereas the Honda was not.

The KX125 also has a healthy 125 powerplant—in fact, it may be the easiest-to-use, most predictable engine of the lot. It pulls strongly and cleanly throughout most of the rpm range, but again, the suspension can't keep the wheels on the ground as well as the others, so the KX generally loses the rough-track drag races.

Coming off the starting line, the KX was, surprisingly enough, consistently ahead of the others. Its slightly lower first gear and good, smooth midrange torque

give it a fast jump; and since most starting areas are reasonably smooth, the suspension works well enough to keep the rear wheel planted on the ground. The YZ is probably the most difficult to get going, with the RM and CR falling somewhere in between. The YZ's light flywheels often let the rpm drop too far when charging off the line, and the front wheel will jump into the air as the rear wheel stops spinning and gets traction.

Coming out of corners or wailing down straightaways, the YZ's power is impressive. If you screw up in a corner, just gas it on the next straight and you can catch up to the other three. If there is any kind of traction available at all, the Yamaha will outpull the others out of the corners, and stretch its lead even further on the straights.

The Suzuki never makes as much horsepower as the YZ, but you can use every bit of what's there. The suspension and steering work so well you can keep the throttle wide open more often than with any of the other machines. So even with a mild power anemia, the RM consistently cut the second fastest lap times on most race tracks. If you encounter a smooth track with long straightaways, the Honda Elsinore will probably outrun the Suzuki.

The RM's five-speed gearbox and tendency to bog if you let the rpm drop too far make the process of gear selection in corners more critical than with the others. The bike has a decently-wide powerband, but if you let the revs drop *too* far, the engine may bog slightly. A closer-ratio six-speed might help somewhat, as would slightly cleaner running on the low end.

It's hard to imagine, but the YZ125C—the fire-breathingest, wheel-spinningest 125 of the bunch—the undisputed horsepower and acceleration king—is also the most bog-free at low rpm. To bear this out, we rode the YZ along a flat, level stretch at about 10 or 15 mph, stuffed the gearbox into sixth, and tweaked the throttle wide open. We got some pretty feeble acceleration, a torrent of intake noise, but absolutely *no* bogging or loading up. On the race track, that trait makes the YZ even more potent, and at the same time provides it with a most forgiving nature. If you accidentally end up one gear too high in a corner, the YZ still has enough poop to pull you out of that corner nearly as fast as it would have in the proper gear. The engine very definitely *is* peaky, as evidenced by the way it perks to life at about 8500 rpm. But it nonetheless runs cleanly well below that engine speed,

making the motorcycle much easier to ride than most peaky two-stroke racers.

The Honda and Kawasaki will both bog out slightly if you allow the rpm to drop too low, but this doesn't occur unless you try to ride about two gears higher than ideal. These engines are also peaky, as any competitive 125 tends to be, but not to a bothersome extent.

With all the shifting these bikes require, the gear selector mechanisms must work easily and positively every time. Thankfully, all four bikes meet that prerequisite nicely. The Honda once required a selector adjustment to cure a case of erratic downshifting, but a fall on the shift lever caused the problem in the first place, so we can't blame the bike.

The Yamaha's shift lever has the shortest throw—about three-quarters of an inch—and it even engages the next gear before the lever gets halfway through its arc. The Suzuki's seven-eighths-inch lever throw was the next shortest, with the Honda and Kaw both requiring about a full inch of movement.

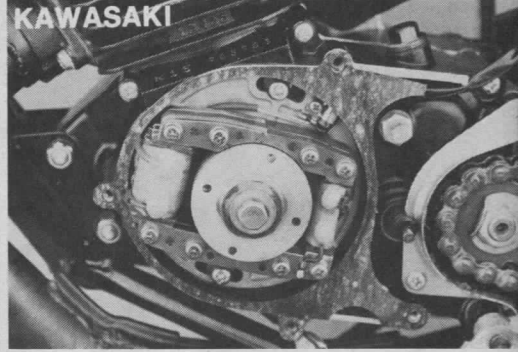
At first, the YZ's short throw was a trifle bothersome, especially for a couple of big-footed riders. They would inadvertently bump the lever whilst climbing around on the pegs and end up in an unexpected false neutral at the most inopportune times. After they became more familiar with each machine, though, this ceased to be a problem.

The clutches on these little screechers appear to be almost bullet-proof. We abused the hell out of them throughout the test, including what seemed like thirty trillion practice motocross starts—but nary a clutch acted up in any way. Their feel, engagement, and progression remained constant at all times.

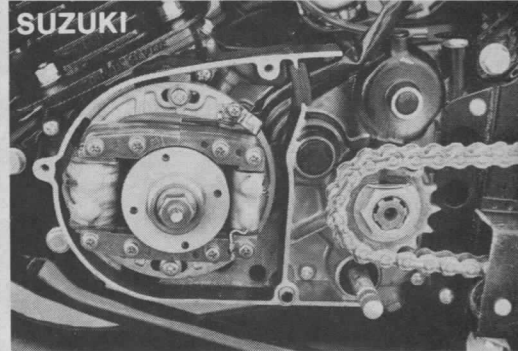
HANDLING: Right now, the World Championship motocross race teams are deeply involved in the development of better, longer-travel suspensions. In some cases, they've even slacked off on engine R&D. They're not crazy; it's just that they now know all the competitive engines make more power than the chassis can put to the ground. Therefore, to make more power is only to waste more power. That just about tells the story as far as Grand Prix motocross is concerned, and also, as far as our 125 comparison test is concerned.

Two of our bikes had long-travel rear suspensions, two of them did not. Three guesses as to which ones came out on top in the handling department. If anyone needs a graphic demonstration of the effectiveness of long-suspension travel, one

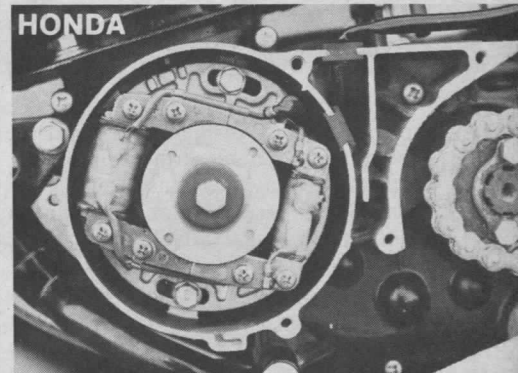
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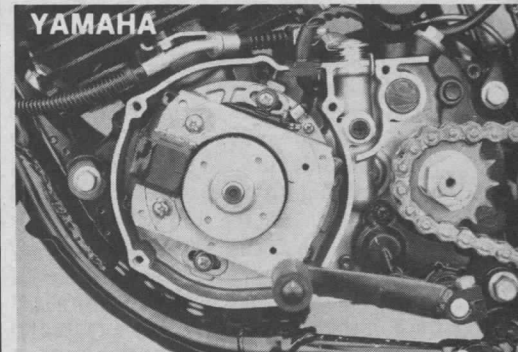
SUZUKI



HONDA



YAMAHA



The KX, RM, and CR use nearly-identical capacitive discharge ignitions, but the YZ has its own exclusive CDI unit.

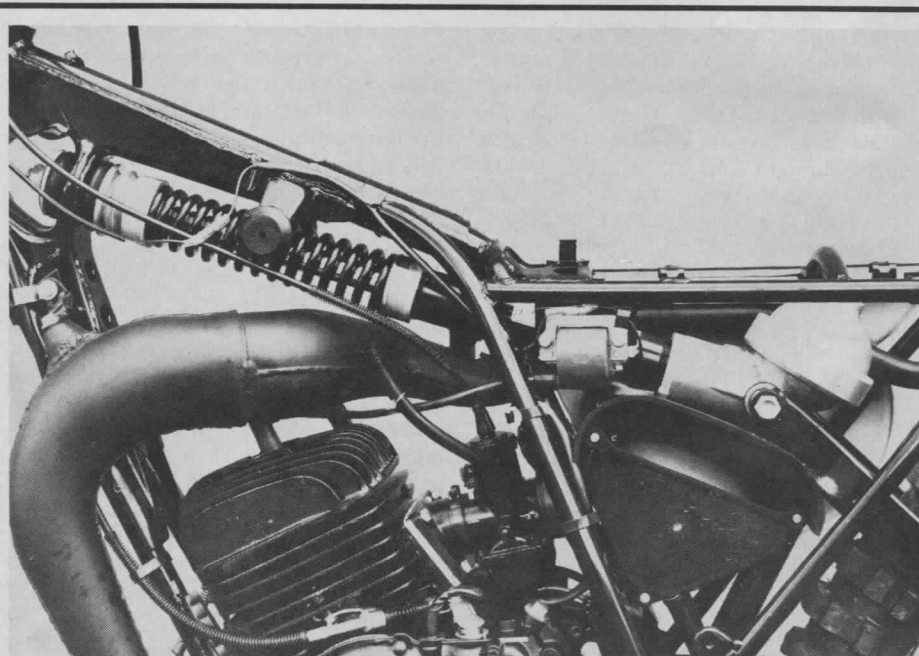
SHOOTOUT



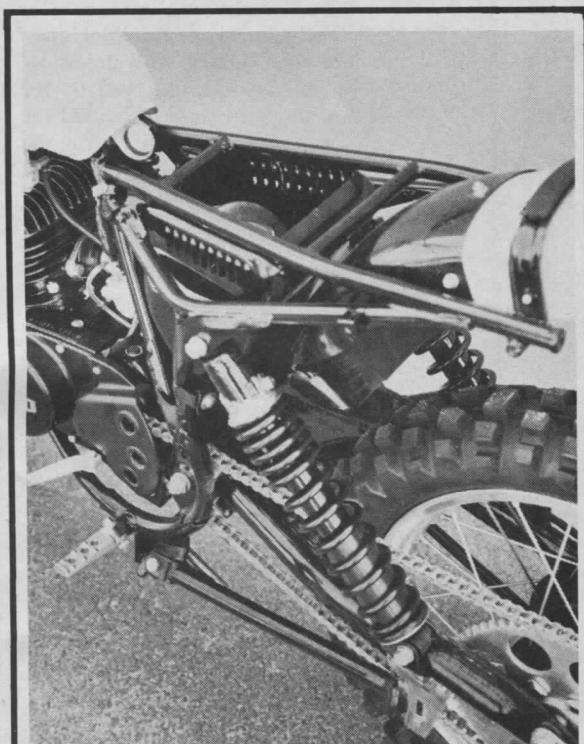
hard ride on each of these bikes over the same rough race track surface will permanently answer any questions he may have.

The Suzuki's suspension is absolutely one of the finest available on a stock motorcycle right now, especially at the rear. The front fork springs are a bit too soft for anyone over 135 or 140 pounds, but the fork action is really plush. Even though the front bottoms frequently, it does it ever so gently. And the Kayaba gas shocks are great—they keep the rear wheel on the ground throughout the entire 7.1 inches of rear wheel movement. With all that travel at the rear and 7.25 inches of it up front, you can literally glide the RM over some ruts and bumps that would give you big trouble on a short-travel machine. Overall, the RM's suspension is the best of the four, allowing you to go the fastest in the rough with the least amount of effort. We noticed a very slight trace of shock fade after 20 or 30 minutes of hard charging, but it never was enough to adversely affect the handling.

The YZ also has an excellent suspension system, even though it doesn't offer quite as much travel as the RM. The Yamaha front end has about half an inch less travel



The YZ's monoshock setup is just like the bigger Yamahas, but it has a smaller shock and softer spring.



The Suzuki RM125 frame is basically a TM125 frame with all the necessary tubing and gusseting added to accommodate the long-travel rear suspension.

than the Suzy, but the spring rate is better for most riders, and the damping is also quite good. The rear suspension allows 5.3 inches of travel, almost two inches less than the Suzuki. In addition, the Monocross springing is slightly stiffer than the RM's rear shocks. Translated into riding terms, this means the YZ front fork works as well and bottoms less in the rough, but you pay a mild penalty of needing a firmer grip on the bars when you blast through sharp, choppy terrain. At the rear, the monoshock does an excellent job of keeping the wheel on the ground and absorbing the bumps, but does not quite measure up to the Suzuki's rear suspension. The rear end stays put and goes straight, exhibiting just a trace more wheel hop than the RM in the rough stuff. We never noticed any fade whatsoever in the monoshock unit, regardless of how long or hard we rode.

The Honda does surprisingly well for a motorcycle with just four inches of rear wheel travel. The front fork functions smoothly, offering 6.5 inches of travel and respectable damping. On smooth and moderately rough surfaces, both ends of the bike stay on the ground and in line, and the suspension soaks up the bumps quite well. But when the course gets really rough, the suspension lets you down. Under those conditions, the rear wheel starts bouncing around and spending too

SHOOTOUT



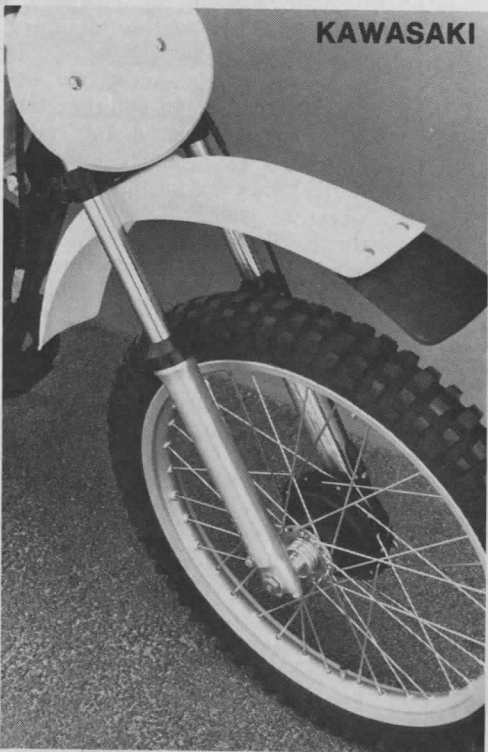
SUZUKI



YAMAHA



HONDA



KAWASAKI

The RM's 7.25 inches of front fork travel is tops, followed by the YZ's 6.75, the CR's 6.5, and the KX's 5.75.

much time in the air. The front then becomes overworked and bottoms out frequently, making you grip the handlebars tightly to keep them from being wrenched out of your hands.

The Kawasaki handles in a similar fashion, only worse. The bike has even less suspension travel at either end, and the damping isn't as good as with the others. On top of that, the wheelbase is the shortest, which causes the bike to get out of shape even easier. On relatively smooth surfaces, the bike handles decently and the suspension can take care of small and medium-sized bumps. But as the track gets rougher, the front fork and rear shocks have a decreasing ability to do the job properly. If you try to keep up with the Suzuki or Yamaha on a rough track, the KX can literally get out of hand. It will leap and bound and thrash and bottom and make you hold on for dear life. Even if you do somehow succeed in maintaining a competitive pace, which is highly unlikely, you won't be able to do it for long without crashing.

The Honda and Yamaha have nearly identical steering geometry figures, wheelbase, and weight bias, but they steer quite differently. Everyone felt the Honda had the best steering feel and precision, with the Suzuki second, followed by the Yamaha and the Kawasaki. Provided the suspension can keep the wheels on the ground, the CR goes *precisely* where you point the front wheel, and it does so without requiring much muscle. The Maico-like front fork arrangement undoubtedly helps a lot, since the inertia of the steering mass is less with this design. The 2.75 x 21 front tire also seemed to work better than the 3.00 x 21 tires in loose or sandy corners. No one ever recalled the Honda's front wheel washing out at any time. The CR's steering traits make it a versatile cornering piece, since you can either bounce it off a berm or stuff it around the inside of a tight corner with equal success.

The Suzuki's steering is almost as precise as the CR's, but every once in a while the front wheel would wash out in a loose corner. The RM is actually a better berm-turner than the Elsie, thanks to the long-travel suspension, but the Honda's front end hangs in there better than the Suzuki's. The RM compensates for this by having a superior ability to get through really rough corners easier than all the other machines—again, due to the long suspension travel.

The Yamaha is also an excellent berm-basher, but it has an even greater



SHOOTOUT



tendency than the Suzuki to slide the front wheel on loose, flat corners. We had to be extra careful to get right up *on* the tank in these corners or the front wheel would go away. We suspect the 3.00 x 21 Dunlop front tire was at least partially responsible for this washout, since both the bikes shod with them had this problem.

The Kawasaki has the shortest wheelbase and perhaps the lowest center of gravity, so it seems able to sneak around those tight hairpin turns better than the rest—providing the corner is not loose or sandy, which will cause the front wheel to skate somewhat. It is the shakiest of the group when you slam it into a berm, though, possibly because of the shortness

HONDA



KAWASAKI



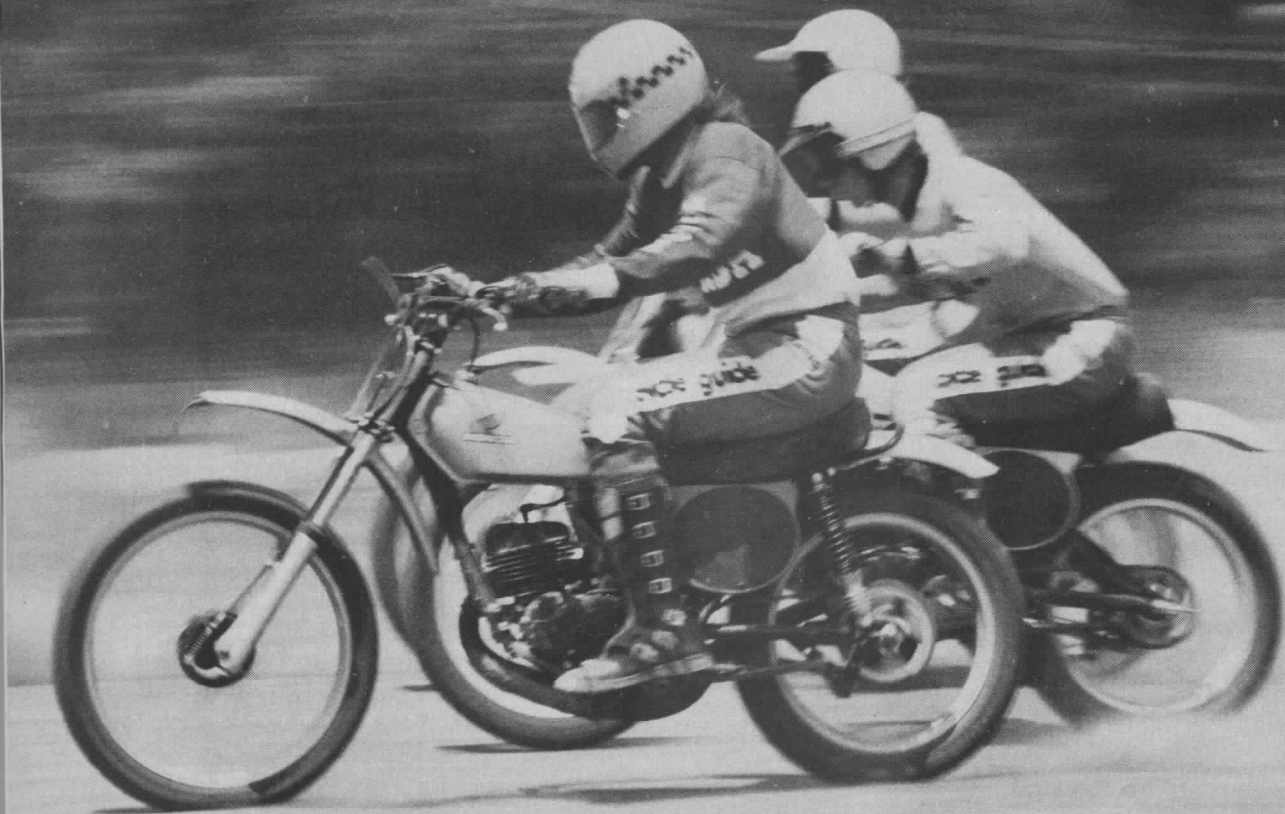
YAMAHA



SUZUKI



The CR and KX have conventional short-travel rear suspensions. They are at a handling disadvantage when compared to the 5.3 inches provided by the YZ's Monocross system, and the 7.1 inches supplied by the RM's lay-down Kayaba gas shocks.



of the suspension travel. You get bounced up off the seat when you hit the berm, and the bike often turns off its intended line as you leave the berm.

The Kawasaki lands hard from high-altitude jumps, and is often difficult to control if you come down a little sideways or front-wheel-first. The suspension bottoms heavily at both ends, and the handlebars try to tear out of your hands. You can hang on sufficiently at the beginning of a moto, but by the end you're generally faced with the choice of either slowing down or getting off.

At the other end of the spectrum, the RM125 lands so softly and gracefully you feel like you've fallen onto a waterbed. Regardless of how high you get launched off a jump, there is never a trace of harshness when you come down on the rear wheel. The front suspension is also nice and cushy, but you can bottom it out if you land on the front wheel. Fortunately, all you usually get is noise when the front bottoms; the handlebars never try to escape your grasp, and the bike doesn't get out of control.

The Yamaha also lands very gracefully. Both ends are sprung somewhat more stiffly than on the Suzuki, but the YZ touches down with just a mildly harder thud than the RM. And you can land much harder on the front wheel without bottoming the fork. Of the foursome, the Yammie also seems to assume the textbook jumping attitude most naturally.

The Honda jumps and lands as nicely

as any conventionally-suspended motorcycle we've tested, but compared to the YZ and RM, it is not up to snuff. A hard return to the earth requires a tight grip on the bars, and a crossed-up landing does not feel nearly as stable as with the Yamaha or Suzuki, although better than the KX125A.

COMFORT AND RIDE: Without a doubt, the Suzuki emerged as the most comfortable, easiest-to-ride 125 of the four. The only thing the bike did even remotely detrimental to its comfort was to bottom the front suspension easily. But it always bottomed so nicely no one ever complained about it. As a sort of offbeat tribute to the ease with which the 'zuki can be ridden, one of the testers had to ride with a badly-sprained left wrist, an injury he sustained on another motorcycle not connected with the test. He found he could ride the Suzuki at competitive speeds considerably longer than any of the other 125s. He could ride the Yamaha the second longest, the Honda third, and the Kawasaki the least.

The seating positions of all four machines are quite similar, so you must work at telling one from another. The Yamaha's footpegs are about an inch further rearward than the others, which may explain its natural front-high jumping attitude. All the bikes are roomy enough to accommodate six-foot-plus riders comfortably in both the standing and sitting positions, and are ideal for riders who stand between five feet seven and five feet

ten inches tall.

The seats are all about equally shaped and padded, and are about the same from a comfort standpoint. We spent many consecutive eight-hour days on these machines and never accumulated any saddle sores. The Suzuki, with its saddle poking up nearly 35 inches from the ground, could pose a little problem for short-stemmed riders, but high motorcycles are turning into an industry-wide trend ever since the long-travel-suspension epidemic hit the motocross sport. The height of the RM causes you to think it's a bigger bike when you first handle it or straddle it. The Yamaha "feels" like the second largest, Honda the third, and the Kawalski the smallest.

If we were to have a special category for engine vibrations, the Honda would win it with ease. A few times the vibes got so bad we checked the engine mount bolts for tightness because it felt like something big was coming loose. There's a strong possibility the frame is more responsible for the high vibration level than the engine. The CR is the only one of the quartet with a chromoly frame, and thinwall chromoly tubing transmits vibration more efficiently than mild steel tubing. The Suzuki has the second highest vibration level, the Kawasaki third, and the Yamaha the least.

None of these critters are what you would call quiet. The little silencers on the end of the pipes restrict the noise to

Continued on page 84

HONDA CR125M1

SPECIFICATIONS

Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one piston-controlled intake, four transfers, one booster, one exhaust
Bore and stroke	56mm x 50mm
Displacement	123.1cc
Compression ratio	7.6:1
Ignition	CDI
Charging system	none
Carburetion	one 30mm Keihin slide/needle
Air filter	washable oiled foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 4.00:1 ratio
Clutch	wet, 6 drive plates, 5 driven plates
Starting system	primary kick
Transmission	6-speed, left-foot shift
Overall drive ratios	(1) 31.08; (2) 23.47; (3) 18.94; (4) 15.88; (5) 13.95; (6) 12.82
Transmission sprocket	14-tooth
Rear wheel sprocket	51-tooth
Drive chain	1/2-in. pitch, 5/16-in. width (#428)
Front fork	6.5 in. (165.1mm) travel
Rear shocks	4-way adjustable, 4 in. (101.6mm) rear wheel travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	2.75 x 21 Bridgestone knobby
Rear tire	3.50 x 18 Bridgestone Motocrosser knobby
Frame	tubular chromoly steel, single downtube
Steering head angle	30.5 degrees from vertical
Front wheel trail	5.5 in. (140mm)
Wheelbase	53.5 to 54.7 in. (135.9 to 138.9cm)
Length	77.8 in. (197.6cm)
Weight	179.5 lb. (81.4kg)
Weight distribution	44.3% front, 55.7% rear
Ground clearance	7.5 in. (190.5mm), at expansion chamber
Seat height	32.6 in. (828mm), unladen
Handlebar width	34 in. (863.6mm)
Handlebar grip height	41.5 in. (105cm)
Footpeg height	11.2 in. (284.5mm)
Instrumentation	none
Gas tank	steel, 1.6 gal. (6L)
Sound level per SAE J331a	100.2 db(A)
Suggested retail price	\$899 East Coast, \$892 West Coast

SUZUKI RM125

SPECIFICATIONS

Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one piston-controlled intake, six transfers, one exhaust
Bore and stroke	56mm x 50mm
Displacement	123.1cc
Compression ratio	7.4:1
Ignition	CDI
Charging system	none
Carburetion	one 28mm Mikuni slide/needle
Air filter	washable oiled foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 3.388:1 ratio
Clutch	wet, 6 drive plates, 5 driven plates
Starting system	primary kick
Transmission	5-speed, left-foot shift
Overall drive ratios	(1) 31.11; (2) 23.08; (3) 18.15; (4) 15.17; (5) 13.25
Transmission sprocket	14-tooth
Rear wheel sprocket	60-tooth
Drive chain	1/2-in. pitch, 5/16-in. width (#428)
Front fork	7.25 in. (184.2mm) travel
Rear shocks	5-way adjustable, 7.1 in. (180.3mm) rear wheel travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	3.00 x 21 Bridgestone knobby
Rear tire	3.50 x 18 Bridgestone Motocrosser knobby
Frame	tubular steel, single downtube
Steering head angle	29 degrees from vertical
Front wheel trail	4.8 in. (122mm)
Wheelbase	53.5 to 54.5 in. (135.9 to 138.4cm)
Length	81 in. (205.7cm)
Weight	189 lb. (85.7kg)
Weight distribution	45% front, 55% rear
Ground clearance	9.8 in. (248.9mm), at expansion chamber
Seat height	34.8 in. (883.9mm), unladen
Handlebar width	33 in. (838.2mm)
Handlebar grip height	45 in. (114.3cm)
Footpeg height	14 in. (355.6mm)
Instrumentation	none
Gas tank	steel, 1.4 gal. (5.3L)
Sound level per SAE J331a	98.5 db(A)
Suggested retail price	\$925 East and West Coasts

KAWASAKI KX125A

SPECIFICATIONS

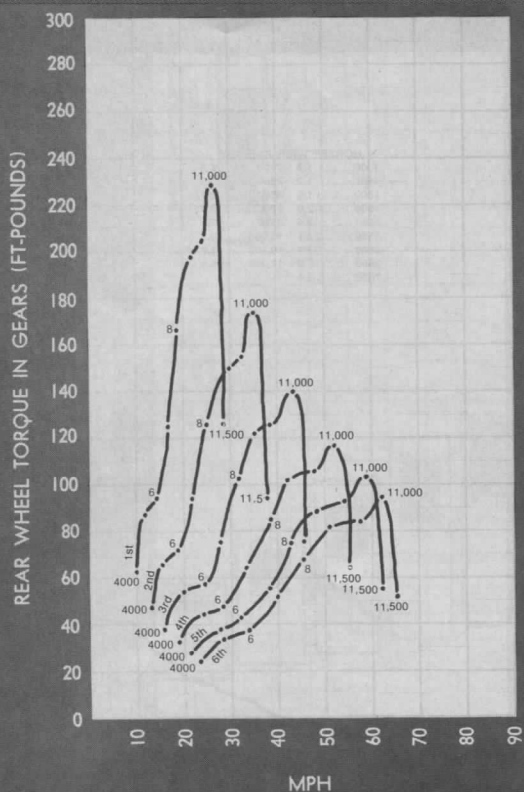
Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one rotary-valve-controlled intake, three transfers, one exhaust
Bore and stroke	56mm x 50.6mm
Displacement	124.6cc
Compression ratio	8.0:1
Ignition	CDI
Charging system	none
Carburetion	one 26mm Mikuni slide/needle
Air filter	bristle-covered washable oiled foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 3.14:1 ratio
Clutch	wet, 5 drive plates, 4 driven plates
Starting system	primary kick
Transmission	6-speed, left-foot shift
Overall drive ratios	(1) 32.89; (2) 24.49; (3) 19.27; (4) 16.52; (5) 14.49; (6) 12.90
Transmission sprocket	13-tooth
Rear wheel sprocket	60-tooth
Drive chain	1/2-in. pitch, 5/16-in. width (#428)
Front fork	5.75 in. (146mm) travel
Rear shocks	3-way adjustable, 3.5 in. (88.9mm) rear wheel travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	3.00 x 21 Dunlop Sports knobby
Rear tire	4.10 x 18 Dunlop Sports Senior knobby
Frame	tubular steel, single downtube
Steering head angle	31 degrees from vertical
Front wheel trail	5.09 in. (129.3mm)
Wheelbase	53.0 to 54.3 in. (134.6 to 137.9cm)
Length	80.8 in. (205.2cm)
Weight	184.5 lb. (83.7kg)
Weight distribution	43.6% front, 56.4% rear
Ground clearance	7 in. (177.8mm), at expansion chamber
Seat height	32.3 in. (820.4mm), unladen
Handlebar width	34.3 in. (871.2mm)
Handlebar grip height	42.3 in. (107.4cm)
Footpeg height	11.6 in. (294.6mm)
Instrumentation	none
Gas tank	steel, 1.7 gal. (6.5L)
Sound level per SAE J331a	99.7 db(A)
Suggested retail price	\$890 East and West Coasts

YAMAHA YZ125C

SPECIFICATIONS

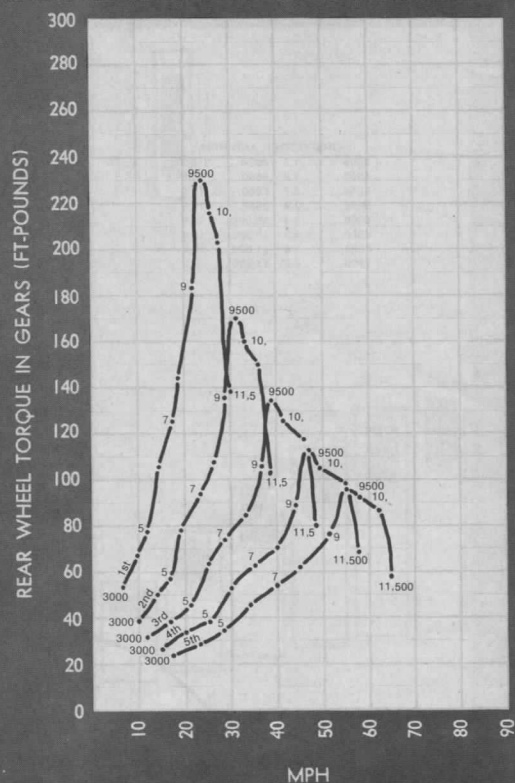
Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one four-petal reed-valve-controlled intake, four transfers, one booster, one exhaust
Bore and stroke	56mm x 50mm
Displacement	123.1cc
Compression ratio	7.5:1
Ignition	CDI
Charging system	none
Carburetion	one 30mm Mikuni slide/needle
Air filter	two bristle-covered washable oiled foam elements
Lubrication	pre-mixed fuel and oil
Primary drive	helical-cut gears, 3.894:1 ratio
Clutch	wet, 5 drive plates, 4 driven plates
Starting system	primary kick
Transmission	6-speed, left-foot shift
Overall drive ratios	(1) 31.76; (2) 24.19; (3) 19.46; (4) 16.27 (5) 14.29; (6) 13.08
Transmission sprocket	14-tooth
Rear wheel sprocket	45-tooth
Drive chain	1/2-in. pitch, 5/16-in. width (#428)
Front fork	6.75 in. (171.4mm) travel
Rear shocks	non-adjustable spring preload, 5.3 in. (134.6mm) rear wheel travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, rod-operated
Front tire	3.00 x 21 Dunlop Sports knobby
Rear tire	4.10 x 18 Dunlop Sports Senior knobby
Frame	tubular steel, double downtube
Steering head angle	31.5 degrees from vertical
Front wheel trail	5.5 in. (140mm)
Wheelbase	54.0 to 54.9 in. (137.2 to 139.4cm)
Length	81.2 in. (206.2cm)
Weight	187 lb. (84.8kg)
Weight distribution	45.2% front, 54.8% rear
Ground clearance	10.6 in. (269.2mm), at brake pedal
Seat height	33.7 in. (856mm), unladen
Handlebar width	35.8 in. (909.3mm)
Handlebar grip height	43.3 in. (110cm)
Footpeg height	13 in. (330.2mm)
Instrumentation	none
Gas tank	alloy, 1.3 gal. (5L)
Sound level per SAE J331a	97.2 db(A)
Suggested retail price	\$998 East Coast, \$990 West Coast

HONDA CR125M1



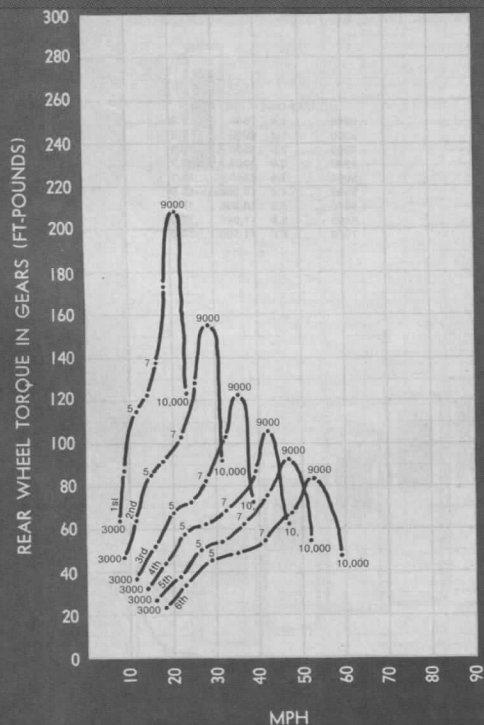
This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.

SUZUKI RM125



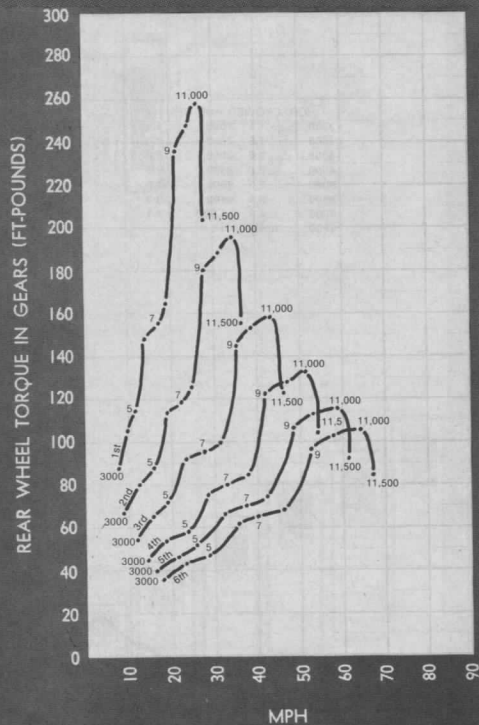
This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.

KAWASAKI KX125A



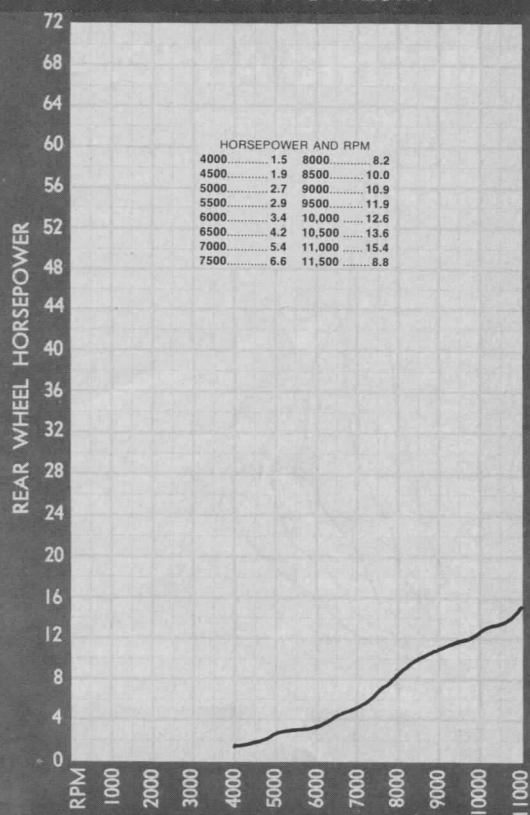
This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.

YAMAHA YZ125C



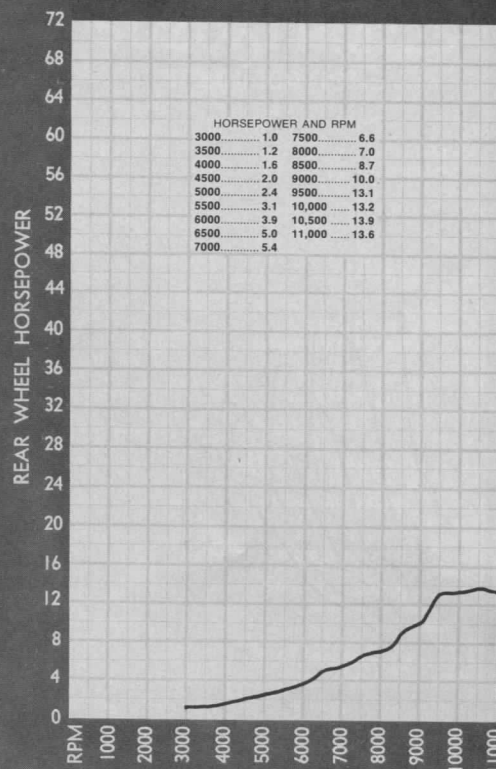
This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.

HONDA CR125M1



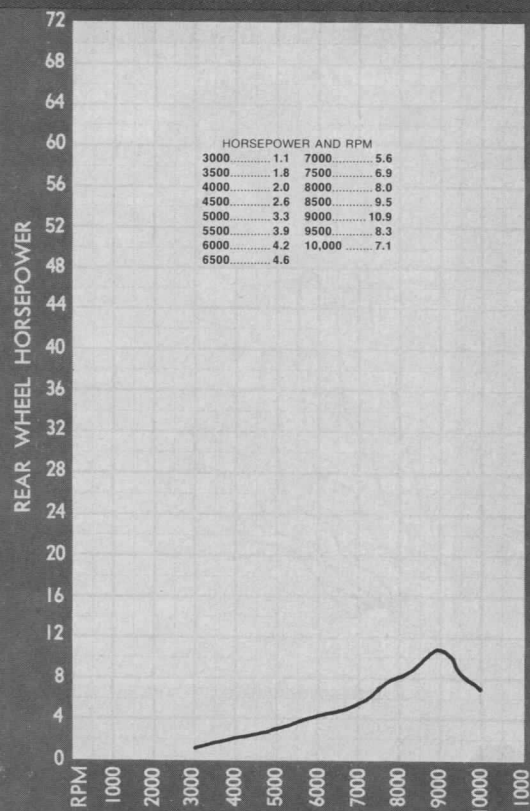
This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MKIII rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

SUZUKI RM125



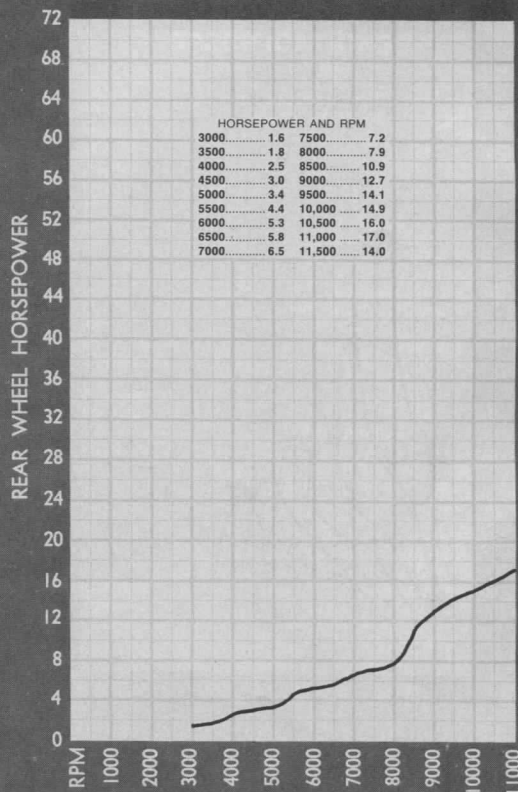
This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MKIII rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

KAWASAKI KX125A



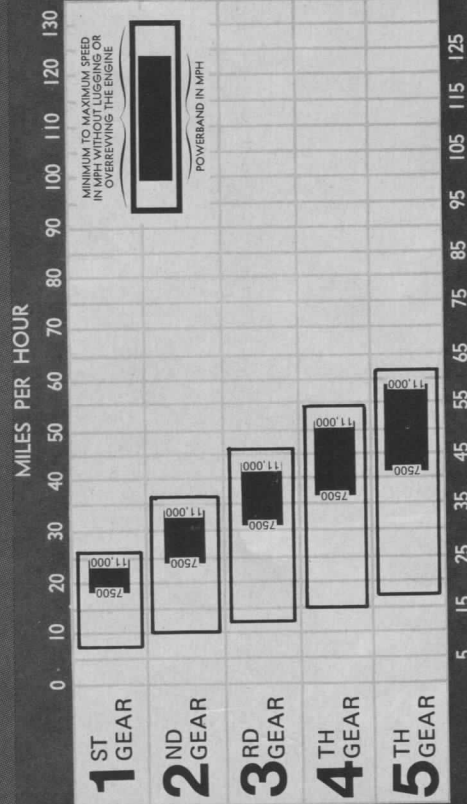
This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MKIII rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

YAMAHA YZ125C

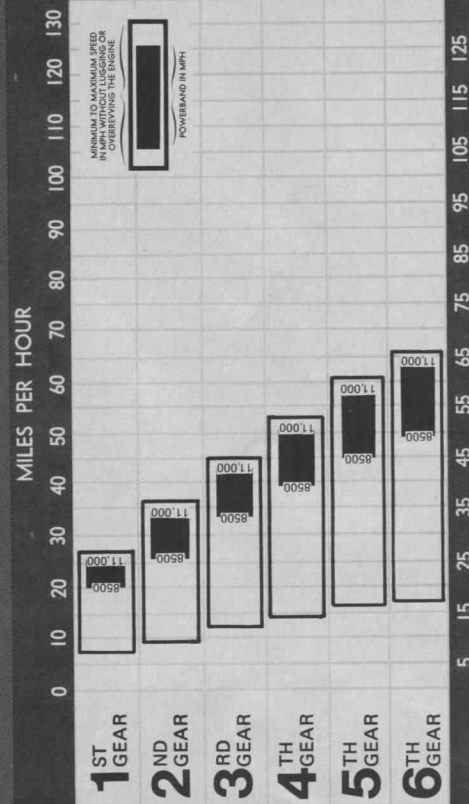


This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MKIII rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

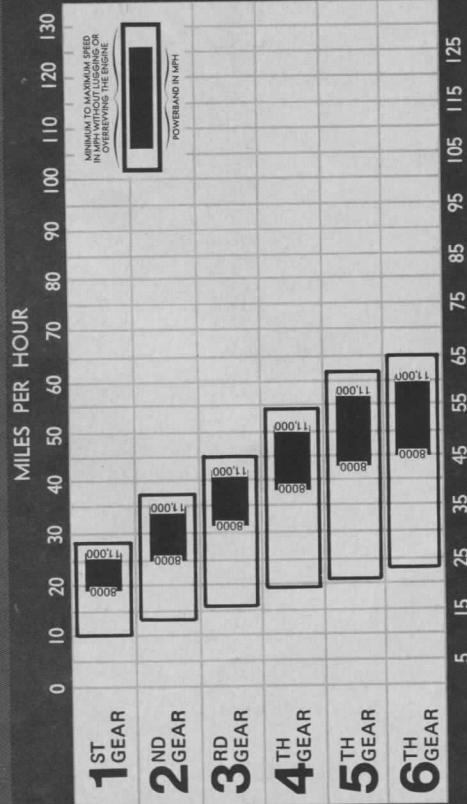
SUZUKI RM125



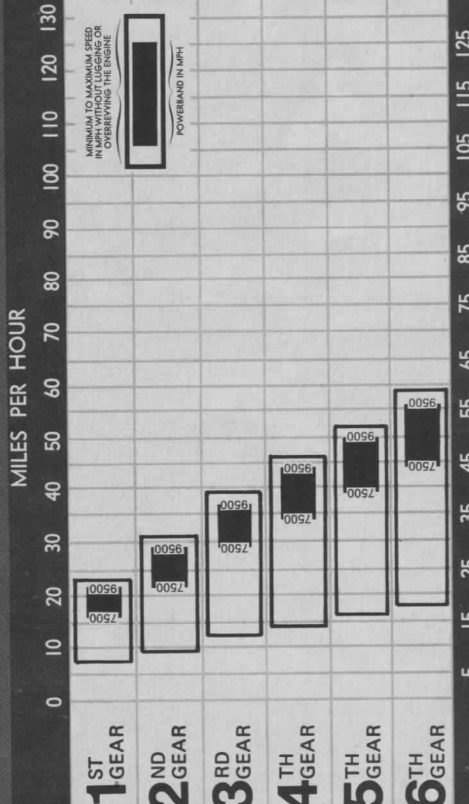
YAMAHA YZ125C



HONDA CR125M1



KAWASAKI KX125A



SHOOTOUT

Continued from page 43

about the level of a Rolling Stones concert held in the back of an unpaneled van. The Honda spewed forth 100.2 decibels of two-stroke profanity, followed closely by the Kawasaki at 99.7, the Suzuki at 98.5, with the Yamaha a mere whisper at 97.2 decibels.

Nearly everyone liked the Honda's handgrips, and the Yammie's grips ran a fairly close second. Most riders didn't care for the RM's grips, but said they *could* live with them if need be. All of the riders said they didn't like the Kaw's grips, and they *couldn't* live with them.

The RM125 needs spring loading on the folding footpegs, since they like to fold up and flop up and down if you lift your boot in the rough. The YZ's pegs could also stand a better footpeg springing arrangement. The springs are not held in

left footpeg, so you must point your boot inward slightly to catch the lever. This was a recurring problem at first because we were jumping back and forth between bikes and had not yet become entirely familiar with the idiosyncrasies of any of them. After a while we seldom, if ever, missed the CR's shift lever.

The first question people asked when they spotted the way the RM's plastic side panels wrap and bulge around the forward-mount rear shocks was "Do they get in your way?" The answer is no. The tops of your boots brush them when you slide rearward, but they never cause you any grief.

BRAKING: The Yamaha's brakes are the most sensitive, powerful, and require the least amount of lever or pedal pressure—hence, they are the most difficult to use. You sometimes lock the rear wheel too easily, and you must be somewhat careful to keep the same thing from hap-



pening with the front wheel. They're just about one notch more powerful than they need to be.

The other three bikes are very similar to one another in their braking behavior, and all the other brakes are more progressive and predictable than the YZ's. None of the bikes have "ideal" motocross brakes, since they all require too little pressure to lock the wheels. However, the RM, CR, and KX brakes are easier to live with than those on the Yamaha.

We experienced some occasional rear wheel hop with all the motorcycles during hard stops, and they all lost about half their stopping force when the shoes got wet. They usually recovered during the next few applications. So if you're keeping score, call it a three-way tie for first place in The Great Braking Contest, with the

Yamaha coming in last.

RELIABILITY DURING TEST: After we got a few things sorted out, the 125s were impressively durable, but it took a day or so to get rid of all the "bugs."

The Honda required a minor adjustment of the shifting mechanism on the second day, due to a reluctance to down-shift consistently. However, we had fallen on the shift lever the previous day, so blame that one on us, not the motorcycle. We only mention it in case someone else does the same thing—falls on the shift lever, that is. If the bike stops shifting properly afterward, you'll have an idea of where to look for the trouble.

Our Suzuki acted up something terrible on the first day, refusing to start without being pushed and frequently bogging out unexpectedly. We took the carb apart,



We measured the piston-to-cylinder clearance and piston ring end gap of all four bikes before and after the test to determine which one would wear out the quickest.

changed the plug, rejettied, even pulled the top end off, all to no avail. We returned the bike to Suzuki, and they replaced the CDI system. The bike then started more consistently, but it still had a tendency to bog. After more carburetor adjusting and jetting the second day, we finally rid the RM of its evil temperament.

The KX125 insisted on losing the two retaining springs that hold the expansion chamber into the cylinder—and again, on the first day. We picked up some new springs from Kawasaki, and kept a watchful eye on them thereafter. They only came off once more, and that, ironically, was on the *last* day of riding.

We had to tighten all the spokes of both wheels on all four bikes after the first day, and the front spokes of the YZ and RM after the second day. Both wheels of the Yamaha and Suzuki needed attention after the third day, with the RM developing a flat spot in the front rim. The Yamaha's wheels needed no further attention, but the Suzuki's front spokes required tightening after both the fourth and fifth day of riding. From that point on, they remained tight. After being adjusted prior to the second day, the CR and KX spokes remained tight throughout the duration of the test.

On the fourth day, the left fork seals on both the CR and RM started seeping oil. By the end of the day, the seepage had turned to a genuine drool. The right fork seals on both bikes never leaked a drop, and neither did the seals on the KX or YZ.

In an effort to at least *estimate* the longevity of these 125s, we pulled the top ends off all four before we started riding them and measured the piston-to-cylinder clearance and the piston ring end gap. We checked again *after* the test to see how much each of those parts had worn. To be even fairer, we always used the same brand of oil, mixed at the same ratio, for all four bikes and they were each refueled from the same source. That way, any excessive (or lack of) wear in one particular engine would not have occurred because of any differences in the oil.

Our results were not very spectacular, but they should be encouraging to a prospective owner of a Japanese 125 motocrosser. The Kawasaki's piston-to-cylinder clearance increased one thousandth of an inch (.001"), while the clearance on the other three grew by only one-half of one thousandth (.0005"). The end gap of the Yamaha's single piston ring opened up by .005", as did the top ring of the Suzuki. The RM's lower ring end gap increased .007".

The Kaw's top ring wore enough to increase the gap by .004", and the bottom ring measured .003" more end gap. The Elsinore wore the least of all, with the top ring showing an increase of only .001", and the bottom ring indicating no wear whatsoever.

These wear rates are not excessive,

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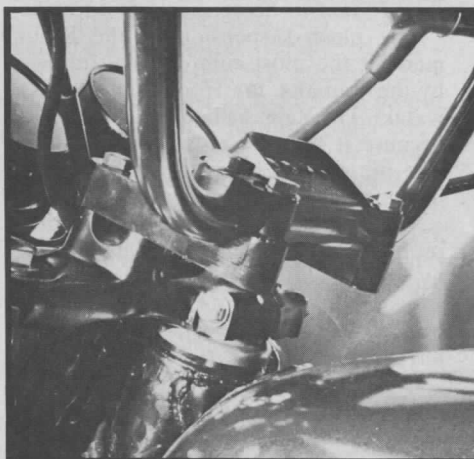
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especially considering the dusty riding conditions, the high-rpm nature of the engines, and the number of hours we logged on each bike. With that knowledge, we estimated the average rider, racing three or four times a month and practicing once or twice a week, would need to re-ring his 125 one to three times a season to keep it fresh, and probably re-bore the cylinder or at least fit a new piston between seasons.

The Kawasaki has a weird sidestand bracket arrangement. The holes on the bracket are two millimeters larger than the bolts that pass through them. As a result, the bracket and stand were continually working loose and flopping around, and they made the bike rather wobbly while resting on the sidestand.

We had to make surprisingly few chain adjustments on the bikes, and the clutch cables, front brake cables, and rear brakes all required about one adjustment each. The RM fouled one plug during its first-day tantrum, but that was the only mandatory plug change required. We put fresh plugs in all four bikes at the conclusion of the test, just prior to their respective dyno runs. Even that plug change was just a precaution to assure the fairest possible power readings for all the machines.

None of these bikes seem to be any easier to work on than the others. When changing gearbox oil, the Yamaha's high pipe gives it a slight advantage over the low pipes on the other three, since you don't have the expansion chamber to deal with. Conversely, the low pipes are an advantage when you want to remove the cylinder head. The Kawasaki's crankcase-mounted carb allows you to remove the top end more quickly than on the other bikes, but carburetor adjustment and maintenance is more difficult with this design. So it all evens out in the end.

The only potential service problem we can foresee is with the Yamaha's monoshock system. As more Yamaha dealers learn the intricacies of the nitrogen-charged monoshock, and as servicing tools and facilities become more plentiful, the concern will lessen. Fortunately, the shock unit on the YZ125C works nicely for most riders, so it should not need to be fooled with.

SUMMARY: The four Japanese 125 motocrossers—the Honda CR125M1, the Kawasaki KX125A, the Suzuki RM125, and the Yamaha YZ125C—are evenly-matched in some categories, and miles apart in others.

The Yamaha has the most impressive engine, both in power and in flexibility. Overall, the Honda has the second best engine characteristics, and the Kawasaki holds a slight edge over the Suzuki.

The Suzuki exhibited the best overall handling traits, with the Yamaha a close second, the Honda third, and the Kawasaki fourth. The Honda had the best steering, the Yamaha the best front fork, and the Suzuki the best rear suspension



(in addition to being the easiest to ride).

The plush suspension of the Suzuki made it the most comfortable, followed by the Yamaha, the Honda, and the Kawasaki. The Yamaha had the worst brakes because it had the most powerful ones. The other three bikes were about equal in the stopping department.

The Honda gave us the fewest reliability problems, edging out the Yamaha only by a couple of extra front-wheel spoke adjustments needed on the YZ. The Kawasaki was third in reliability, and the Suzuki fourth.

CONCLUSION: In our opinion—and in the opinion of every rider who tried all the bikes—the one out-of-the-crate 125 that can carry you to more first-place finishes than the other three is the Yamaha YZ125C. We felt the Suzuki to be second best, the Honda third best, and the Kawasaki fourth.

As always, there are a lot of "ifs" surrounding a comparison. For instance, *if* the Suzuki had more power, it could have won. *If* the Honda had long-travel suspension, it may have won. The only bike more than one or two "ifs" away from winning was the Kawasaki. It needs some serious upgrading before it will get into the same league as the other three.

But "ifs" don't win races; handling and performance do. And since the Yamaha offers the best engine performance, and is either first or second best in most handling respects, the choice was obvious.

There will also be cries of "What about the tricked-up bikes? The winning 125s aren't stock."

True. Right now, tricked-to-tears Elsinores dominate the 125 class, and for several reasons: More of them are being raced than anything else, more good after-market parts are available for them than for anything else, and their owners have invested a lot of money to make them faster and better-handling. But they aren't stock bikes; and our job, at least with road testing, is to evaluate stock motorcycles set up just the way they roll out of the crate. Lots of people *do* race stockers, and those production bikes are getting better and faster all the time.

Trick bikes or not, the YZ is gonna give everyone a race for their money. Several

riders of reworked non-stock 125s tried the YZ and thought it was every bit as fast and handled as well as their own bikes. Once someone comes up with a few goodies for the YZ, it will *really* put the hurt on the competition.

For Suzuki, the RM125 is a giant leap forward. At long last, some of the racing technology that helped Roger DeCoster and Joel Robert garner a fistful of World Championships has found its way to the production line. But Suzuki's ultra-conservatism, a trait that has characterized most of their motorcycles for some time, prevented them from winning this comparison. The stock RM125 finished second solely because it didn't have enough power to keep up with the YZ. But Suzuki is offering a factory kit for the RM, a \$200 bolt-on affair consisting of a different pipe, a 30mm carburetor, a cylinder with more radical porting, and a piston with a higher intake cutaway. They put a kit on an RM and allowed us to try it during the comparison. Our conclusion: The RM would have won the test if the kit had been standard equipment. The trick parts make the Suzuki just about as fast as the YZ, and with its slight handling edge, would have made it *The* Japanese 125 motocrosser. It's nice to know the kit is available, but it's also hard to understand why they didn't build it like that in the first place. The kit doesn't make the RM any harder to ride, and adds about 10 or 15 percent on the top end and mid range without taking much away from the bottom end. If you buy an RM, get the kit. It's worth the money.

Coincidentally, the suggested retail prices of the motorcycles fall in line with their finish in the test. The YZ is the most expensive, the Suzuki is the second most costly, then the Honda, followed by the Kawasaki. There's about a hundred-dollar spread between the Yamaha (\$998 East Coast, \$990 West Coast) and the 'saki (\$890 East and West Coasts). But that \$100 will buy you more power, performance, and handling than you could beg, borrow, or steal for the same amount on your own. Considering that, the price differential is almost negligible. But if it bothers you, remember—with these bikes, you get what you pay for. **CG**