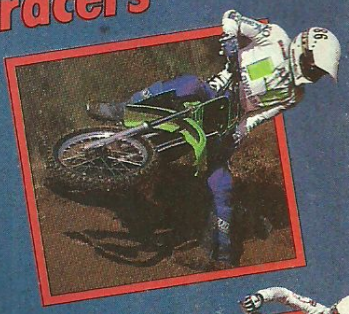
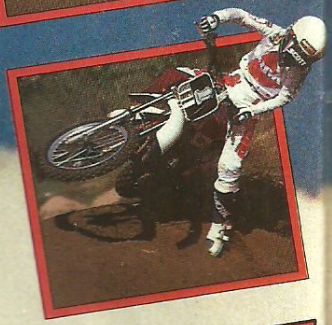
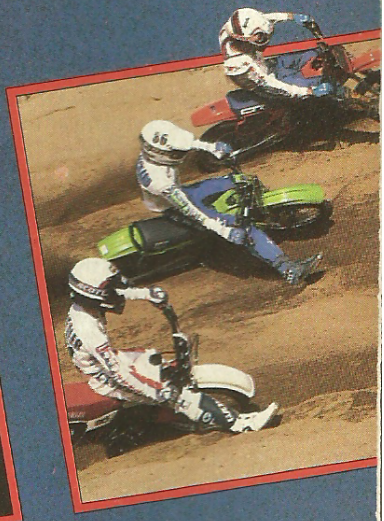
Small arms for small racers





MINI MX MISSI



Yamaha YZ80

LES

When you have a stable of stellar machines like these three minis, you need stars to show them at their potential. We enlisted Shane Trittler as the star for the YZ80 berm and jump shots; we knew that Scott "Lizard" Brown could manage the jump to hyperspace on a Honda CR80; and Shawn Blanchard, one of Kawasaki's star pilots, is seen here on the bike green enough to be an alien.

Disneyland has a popular ride on which an unseen narrator announces that "you are entering the world of inner space." With today's mini motocrossers, you are entering the universe of half-scale hyperspace. When Honda, Yamaha and Kawasaki built these three motorcycles, they built the best dirt bikes—regardless of their size—ever offered to the public.

For the riders they are designed for, the KX80E3, CR80R and YZ80N have better suspension, transmission ratios, shifting actions and handling than the "big" bikes. Acceleration—even with an adult aboard—is breathtaking.

You've heard they're pipey? Not compared to most 125cc motocrossers. After we took a few laps on these amazing MX missiles, we were impressed that mini riders could make the transition to bigger bikes as easily as they do. By comparison, even the best of the bigger dirt bikes feel like barges with barely adequate suspension systems.

In spite of their overall excellence, though, there are personality differences among these contenders and even a few actual flaws. We will announce a winner, but keep in mind there are no losers in this bunch.

[Editor's note—Though we have only three minis in our shootout, there are minis available from Suzuki as well. Except for graphics changes, the RM80 that wasn't able to win our shootout last year is unchanged for 1985 according to our sources at Suzuki. We were also unable to obtain the 1985 RM80 in time for the shootout. Because of these facts and the rumors that Suzuki has an all-new 80 in the wings for 1986 scheduled for an August '85 release, we decided to wait so we could test the radical new 80.]

TECHNICALLY SPEAKING

Due to the fierce competition among manufacturers in the minicycle classes, and because of strict National Motosport Association rules, many of the specifications of these three motorcycles are close to identical. While there are other sanctioning bodies governing mini MX racing, most manufacturers follow the basic guidelines set by the NMA with only minor deviations in requirements and classes.

Due to the tiny engines and close competition within this genre, the miniature MX motors remain the focus of attention. All three motors share a common thirst for a

PHOTOS: KAREL KRAMER

REDLINE REPORT

MINI MX MISSILES

Horsepower is a key factor in any mini success, and these three tots are all very successful. If you check these dyno charts carefully, though, you will see that the Yamaha makes the most horsepower of the toddlers with 16.0 ponies at a buzzy 11,500 rpm. The Honda has a quite similar power curve to the Yamaha and stays "on the pipe" for a 4000 rpm spread, though with a total of 14.3 horsepower at 12,000 rpm, the Honda is down on power compared to the other two.

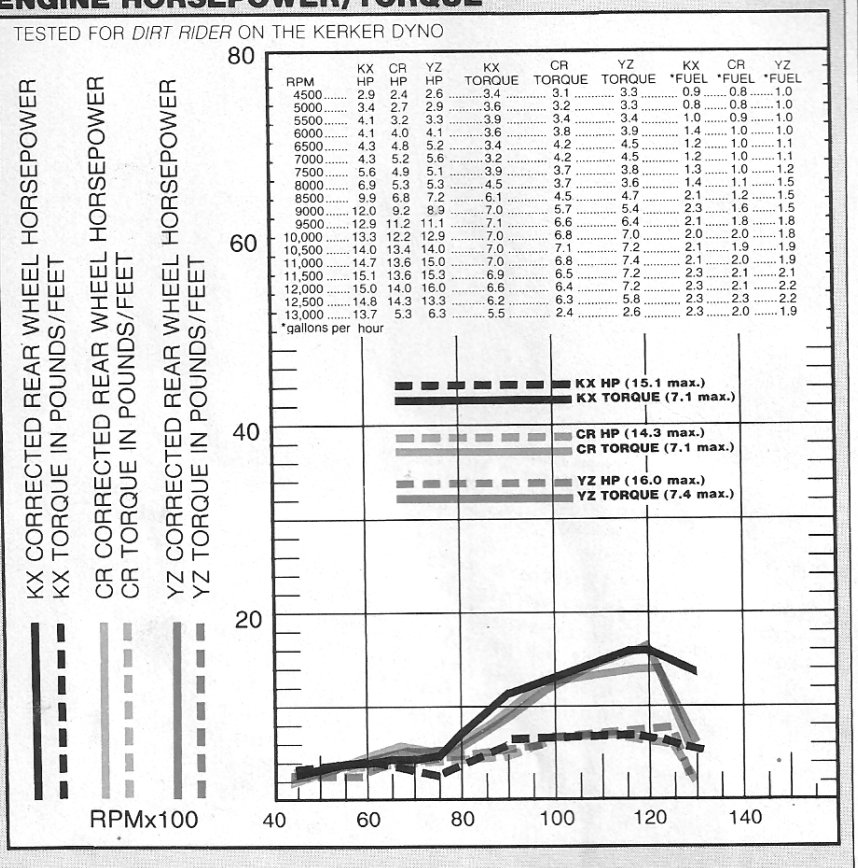
But you really need to get amongst the numbers to see why the Kawasaki is king (or, in this case, prince). The engine comes on the pipe 500 to 1000 rpm sooner than the other two and comes on harder, too. It does peak at 15.1 horsepower, but its power spread charted by the dyno shows it has a wider powerband. We really felt that powerband at the track and, basically, that easy-to-ride power tipped the scales to make the Kawasaki the winner of this shootout.

ENGINE HORSEPOWER/TORQUE

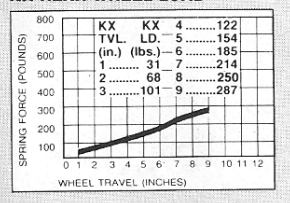
TESTED FOR *DIRT RIDER* ON THE KERKER DYNO

RPM	KX HP	CR HP	YZ HP	KX TORQUE	CR TORQUE	YZ TORQUE	KX *FUEL	CR *FUEL	YZ *FUEL
4500	2.9	2.4	2.6	3.4	3.1	3.3	0.9	0.8	1.0
5000	3.4	2.7	2.9	3.6	3.2	3.3	0.8	0.8	1.0
5500	4.1	3.2	3.3	3.9	3.4	3.4	1.0	0.9	1.0
6000	4.1	4.0	4.1	3.6	3.8	3.9	1.4	1.0	1.0
6500	4.3	4.8	5.2	3.4	4.2	4.5	1.2	1.0	1.1
7000	4.3	5.2	5.6	3.2	4.2	4.5	1.2	1.0	1.1
7500	5.6	4.9	5.1	3.9	3.7	3.8	1.3	1.0	1.2
8000	6.9	5.3	5.3	4.5	3.7	3.6	1.4	1.1	1.5
8500	9.9	6.8	7.2	6.1	4.5	4.7	2.1	1.2	1.5
9000	12.0	9.2	8.9	7.0	5.7	5.4	2.3	1.6	1.5
9500	12.9	11.2	11.1	7.1	6.6	6.4	2.1	1.8	1.8
10,000	13.3	12.2	12.9	7.0	6.8	7.0	2.0	2.0	1.8
10,500	14.0	13.4	14.0	7.0	7.1	7.2	2.1	1.9	1.9
11,000	14.7	13.6	15.0	7.0	6.8	7.4	2.1	2.0	1.9
11,500	15.1	13.6	15.3	6.9	6.5	7.2	2.3	2.1	2.1
12,000	15.0	14.0	16.0	6.6	6.4	7.2	2.3	2.1	2.2
12,500	14.8	14.3	13.3	6.2	6.3	5.8	2.3	2.3	2.2
13,000	13.7	5.3	6.3	5.5	2.4	2.6	2.3	2.0	1.9

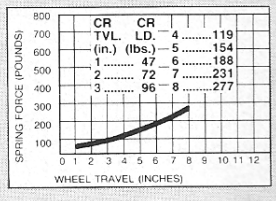
*gallons per hour



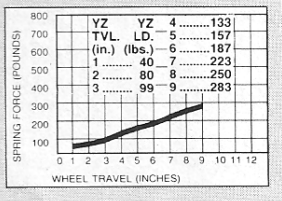
KX REAR WHEEL LOAD



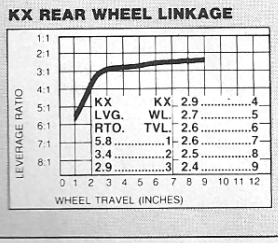
CR REAR WHEEL LOAD



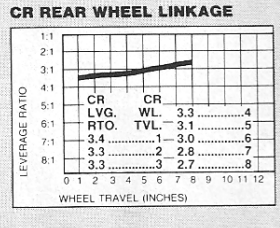
YZ REAR WHEEL LOAD



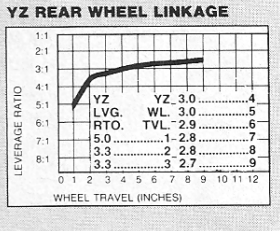
KX REAR WHEEL LINKAGE



CR REAR WHEEL LINKAGE



YZ REAR WHEEL LINKAGE



mixture of water and coolant as all are liquid-cooled. All feature six-speed close-ratio transmissions as well.

Of the three, only the Kawasaki features a reed-valve inducted cylinder that uses a non-borable liner. Kawasaki coats the cylinder bore by electrically exploding alternating types of wire inside it. The wire particles fuse to the aluminum cylinder wall to form a tough, thin coating that transfers heat very well. Additionally, there are none of the cylinder/liner mismatches seen in most sleeved cylinder liners. The only way to repair it is to replace it, while the Yamaha and the Honda have oversize pistons available. In the case of both the Yamaha and the Honda, though, the engine is at the 83cc displacement limit of the NMA on the stock bore. To race NMA events, the Yamaha and the Honda would need a stock bore.

Other than the cylinder liner, the KX80 is a fairly conventional motorcycle. It uses Kawasaki's Uni-Trak system worked with an extruded aluminum swingarm to control the rear wheel's movement. A leading-axle fork suspends the front wheel and disc brake. Though the disc is conventional fare on a dirt bike these days, the KX is the only mini that features one.

Kawasaki uses basically the same frame this year used on the two previous model years, but now silver paint protects it from rust rather than the black of past models. A green plastic-shrouded radiator occupies only one side of the machine. A nice touch featured on the KX is a grab strap across the rear fender to help load the bike.

Yamaha has built a conventional minicycle as well. The engine uses a boost bottle mounted below the fuel tank—the only mini to do so. As on all these contenders, the Yamaha has a single-sided radiator and a CD ignition.

Yamaha is another manufacturer to use the semi-double cradle frame, but the YZ80 uses a steel swingarm to operate this latest version of the Monocross suspension system. The shock offers rebound damping adjustments.

Z-spoke hubs are at the front and rear of the YZ80, but one side of the front wheel uses straight-pull spokes. Single-leading shoe drum brakes are featured front and rear.

Honda's CR80 is a less conventional machine since it features the ATAC system as an integral part of the exhaust header—just like the bigger Hon-

da motocrossers—but the rest of the specs are almost identical to the engines of the other two minis. A square tube swingarm, much like the one on the KX, is used, but this one works the Pro-Link linkage and is steel rather than aluminum.

Honda has taken special pains with the controls on the CR80. Its levers, grips and bar felt perfect for many riders. By comparison, only riders with small hands liked the Yamaha controls, and the levers on the KX were plain ol' aluminum. Riders of other bikes went so far as to say the Honda could be faster in drag races than the other bikes even if the horsepower was identical because the CR80 shifts so well. The front and rear drum brakes were also excellent.

The Honda looks less like a scaled-down motorcycle than the other two because the seat is overly large compared to the scale of the bike. Its seat and an overall "bigness" about the bike made the Honda comfortable for adults as well as smaller riders, though riders five-feet-one or smaller might find it difficult to ride.

ON THE GAS

Anyone who has ridden a contemporary mini—or has been passed by one—knows that seeing a mini on the gas is seeing it at its best. Usually, when a

PHOTOS: CHRIS BOICE

magazine gets ready to test minis, finding the right crop of test riders is a prime consideration. Mini riders with any reputation are either brand-loyal or are harboring a grudge against past sponsors. We rounded up a top intermediate rider who was totally unsponsored, but kept in mind that he had over a year of experience on Kawasakis. For our impartial rider, we imported a 23-year-old 125cc intermediate rider, Pete Sullivan, who has ridden for us in the past. Sullivan has no ties to any of the companies, but his 135-pound, five-foot, three-inch frame made him ideal for our purposes. During lap-time testing, he turned in lap times that would have put him in the top 15 in the Golden State Series Mini

HONDA

Make/model.....Honda CR80R
Serial number.....Frame: JH2HE0407FK200022
Engine: HE04E5200028
Price.....$998
Number of dealers (U.S.).....1700+
Warranty.....None
Customer service..American Honda Motor Co.
100 W. Alondra Blvd.
Gardena, CA 90247
213/327-8280

ENGINE
Type.....Liquid-cooled two-stroke single with ATAC
Displacement.....82.9cc
Bore x stroke.....47.0 x 47.8mm
Compression ratio.....8.2:1
Horsepower/rpm (measured).....14.3 @ 12,500 rpm
Torque/rpm (measured).....7.1 @ 10,5000 rpm
Carburetion.....28mm Keihin
Exhaust.....Single steel expansion chamber into steel silencer
Ignition.....CDI
Lubrication.....Pre mix (20:1 Hondaline recommended)
Air filtration.....Oiled polyurethane foam

DRIVE TRAIN
Transmission.....Six-speed
Primary drive.....4.117:1 (gear)
Final drive.....3.266:1 (15/49)
Gear ratios (internal).....1st 2.333:1
2nd 1.722:1
3rd 1.400:1
4th 1.173:1
5th 1.000:1
6th 0.884:1

CHASSIS
Frame.....Single downtube into full cradle
Rake/trail.....26.8°/2.87 in.
Front suspension.....Showa leading axle air/spring fork, 10.2 in. travel (claimed)
Rear Suspension.....Pro-Link with gas/oil Showa shock, infinitely variable preload 8.5 in. travel (measured)
Brakes.....Front—Single-leading shoe drum
Rear—Single-leading shoe drum
Wheels.....Front—1.40-17 D.I.D
Rear—1.60-14 D.I.D
Tires.....Front—80/80-17 IRC Supercross M3E
Rear—110/80-14 IRC Supercross M3E

PARTS/COST
Maintenance manual.....$2.49
Carburetor jets.....Main—$3.68, Pilot jet—$3.82, Needle jet—$7.04, Jet needle—NA
Sprockets.....Front—$5.96
Rear—$31.98
Handlebar levers.....$5.25 ea.
Shift lever.....$15.07
Piston kit (complete).....$32.49
Rings only.....$12.78
Cylinder.....$147.94
Head.....$38.31
Clutch parts.....Friction (5)—$4.15
Steel (5)—$2.18
Air filter.....$21.77
Brake shoes.....Front—$4.52 ea.
Rear—$3.55 ea.
Chain.....$16.13
Seat.....$42.51
Fenders.....Front—$23.41
Rear—$11.88
Fuel tank.....$82.40
Cables.....Clutch—$4.86
Throttle—$5.69
Front brake—$5.47

OPTIONS
Shock spring (softer or stiffer).....$38.08
Fork springs (softer or stiffer).....$14.12 ea.

KAWASAKI

Make/model.....Kawasaki KX80E3
Serial number.....Frame: JKAKXWE11FA016391
Engine: KX080ee016416
Price.....$1079
Number of dealers (U.S.).....1400 (approx.)
Warranty.....None
Customer service.....Kawasaki Motor Corp.
P.O. Box 11447
Santa Ana, CA 92711
714/540-1600

ENGINE
Type.....Liquid-cooled two-stroke single
Displacement.....82.0cc
Bore x stroke.....48 x 45.8mm
Compression ratio.....8.4:1
Horsepower/rpm (measured).....15.1 @ 11,500 rpm
Torque/rpm (measured).....7.1 @ 9000 rpm
Carburetion.....Mikini VM29SS
Exhaust.....Steel expansion chamber into steel silencer
Ignition.....CDI
Lubrication.....Premix (32:1 recommended)
Air filtration.....Oiled polyurethane foam

DRIVE TRAIN
Transmission.....Six-speed
Primary drive.....3.083:1 (gear)
Final drive.....3.571:1 (14/50)
Gear ratios (internal).....1st 2.846:1
2nd 2.125:1
3rd 1.722:1
4th 1.428:1
5th 1.217:1
6th 1.083:1

CHASSIS
Frame.....Single downtube
Rake/trail.....28°/3.5 in.
Front suspension.....KYB telescopic air/spring fork, 10.0 in. travel (claimed)
Rear Suspension.....Uni-Trak with KYB shock, 9.0 in. travel (measured)
Brakes.....Front—Single-piston caliper disc
Rear—Single-leading shoe drum
Wheels.....Front—1.40-17 Takasago
Rear—1.60-14 Takasago
Tires.....Front—80/90-17 Dunlop Sports K790
Rear—110/90-14 Dunlop Sports K790

PARTS/COST
Maintenance manual.....Comes with bike
Carburetor jets.....Main—$3.62, Pilot jet—$3.62, Needle jet—$4.62, Jet needle—$9.86
Sprockets.....Front—$8.54
Rear—$19.36
Handlebar levers.....$6.84 ea.
Shift lever.....$14.72
Piston kit (complete).....$16.29
Rings only.....$3.39
Cylinder.....$112.75
Head.....$38.00
Clutch plates.....Friction (6)—$5.20 ea.
Steel (5)—$2.55 ea.
Air filter.....$14.32
Brake shoes.....Front (pads, 2 required)—$15.60 ea.
Rear—$4.07
Chain.....$20.58
Seat.....$62.00
Fenders.....Front—$16.46
Rear—$13.90
Fuel tank.....$97.00
Cables.....Clutch—$6.89
Throttle—$7.06
Front brake (hose)—$52.00

OPTIONS
Shock spring.....$40.00

YAMAHA

Make/model.....Yamaha YZ80N
Serial number.....Frame: JYA58T001FA000149
Engine: 58T 000149
Price.....$1049
Number of dealers (U.S.).....1700+
Warranty.....30-day
Customer service.....Yamaha Motor Corp.
6555 Katella Ave.
Cypress, CA 90630
714/761-7439

ENGINE
Type.....Liquid-cooled two-stroke single
Displacement.....82.5cc
Bore x stroke.....48 x 45.6mm
Compression ratio.....9.9:1
Horsepower/rpm (measured).....16.0 @ 11,500 rpm
Torque/rpm (measured).....7.4 @ 10,5000 rpm
Carburetion.....Mikini VM26SS
Exhaust.....Steel expansion chamber into steel silencer
Ignition.....CDI
Lubrication.....Premix (24:1 Yamalube R recommended)
Air filtration.....Oiled polyurethane foam

DRIVE TRAIN
Transmission.....Six-speed
Primary drive.....3.579:1 (gear)
Final drive.....3.067:1 (15/46)
Gear ratios (internal).....1st 2.769:1
2nd 2.062:1
3rd 1.631:1
4th 1.375:1
5th 1.227:1
6th 1.130:1

CHASSIS
Frame.....Semi-double cradle
Rake/trail.....26.0°/3.2 in.
Front suspension.....KYB telescopic air/spring fork, 33mm stanchion tubes, 10.0 in. travel (claimed)
Rear Suspension.....Monocross with DeCarbon shock, 9.0 in. travel (measured)
Brakes.....Front—Single-leading shoe drum
Rear—Single-leading shoe drum
Wheels.....Front—1.40-17 D.I.D
Rear—1.60-14 D.I.D
Tires.....Front—2.75-17 Dunlop Sports K490
Rear—4.10-14 Dunlop Sports K490

PARTS/COST
Maintenance manual.....$18.95
Carburetor jets.....Main—$2.00, Pilot jet—$2.40, Needle jet—$6.00, Jet needle—$4.60
Sprockets.....Front—$9.40
Rear—$36.85
Handlebar levers.....Left—$9.60
Right—$9.60 (assembly)
Shift lever.....$13.80
Piston kit (complete).....$29.95
Rings only.....$5.50
Cylinder.....$173.10
Head.....$40.10
Clutch plates.....Friction (5)—$4.60 ea.
Steel (4)—$3.80 ea.
Air filter.....$16.65
Brake shoes.....$5.00 ea.
Chain.....$23.65
Seat.....$67.75
Fenders.....Front—$17.80
Rear—$17.80
Fuel tank.....$67.75
Cables.....Clutch—$9.00
Throttle—$8.40
Front brake—$6.20

OPTIONS
Shock spring (softer or stiffer).....$24.50 ea.
Fork springs.....Softer—$11.20
Stiffer—$9.10

MINI MX MISSILES

CR80

KX80

YZ80

HONDA CR80

Weight (wet, no fuel)	139 lbs.
Weight (wet, tank full)	147 lbs.
Weight distribution (47/53%)(Fr/rr, wet no fuel)	65/74 lbs.
Weight distribution (48/52%)(Fr/rr, wet, tank full)	71/76 lbs.
Wheelbase	49.3 in.
Fuel capacity	1.3 gal.
Reserve capacity	No reserve
Sound test	NA
Ground clearance	11.0 in.
Seat height	31.0 in.
Swingarm length	18.3 in.
Swingarm pivot to center of countershaft	2.4 in.

KAWASAKI KX80

Weight (wet, no fuel)	132 lbs.
Weight (wet, tank full)	139.5 lbs.
Weight distribution (47/53%)(Fr/rr, wet no fuel)	63/69 lbs.
Weight distribution (49/51%)(Fr/rr, wet, tank full)	68.5/71 lbs.
Wheelbase	49.4 in.
Fuel capacity	1.2 gal.
Reserve capacity	No reserve
Sound test	NA
Ground clearance	12.1 in.
Seat height	31.5 in.
Swingarm length	19.9 in.
Swingarm pivot to center of countershaft	2.1 in.

YAMAHA YZ80

Weight (wet, no fuel)	135 lbs.
Weight (wet, tank full)	143.5 lbs.
Weight distribution (48/52%)(Fr/rr, wet no fuel)	65/70 lbs.
Weight distribution (48/52%)(Fr/rr, wet, tank full)	69/74.5 lbs.
Wheelbase	48.6 in.
Fuel capacity	1.3 gal.
Reserve capacity	No reserve
Sound test	NA
Ground clearance	12.0 in.
Seat height	31.5 in.
Swingarm length	18.0 in.
Swingarm pivot to center of countershaft	2.4 in.

Expert class. We also used a beginner rider.

We ran a series of drag races with the expert riders we used for the color photos—Scott Brown, Shane Trittler and Sean Blanchard. We had each rider try all the bikes on a flat, hard area as well as a grassy uphill that was fairly rough for a start area.

After the drag races, it was apparent all three companies had done their homework. The bikes were too close to pick a winner, but if we had to pick one that was ahead more consistently, it would be the Honda. We conferred with the riders and they felt that peak power was about the same on all three machines, but the Honda had less of a tendency to wheelie, thus winning more starts.

When it came to actual track testing, each bike demonstrated its individual strengths. Though its peak power output is now roughly the same as the other two, the Kawasaki still has the superior powerband of the three. The KX is as different from the other two as a 250 is from a 125. When the KX has the traction, it gets a torquey jump of a few feet out of corners over its competition—a deficit that's difficult for the other two to overcome before the next turn.

As good as the KX engine is, however, it's hampered by a gearbox that shifts a little stickier than either the YZ or the CR. Also, the seating position on the KX is cramped, although the bike is physically quite large. Suspension on the KX was rated highly by all three of our riders, and the bike has the best brakes of the bunch.

In sum, we would like to see a better seating position on the KX—with the seat a little farther from the handlebar—better shifting and more controlled suspension travel. The travel figures are there, but the bike almost wallows on the soft, progressive-feeling suspension. And the KX comes with the worst tires of the three. They didn't seem well-suited for any track we tried.

Yamaha earned the handling award of the three minis. Our testers said the Yamaha was easier to get around the track, and it never needed to be forced to go somewhere, just pointed in the right direction. All YZ80Ns we received were delivered with the timing mark on the ignition stamped wrong. After we reset the timing (see sidebar),

PHOTOS: RICH COX

the bike had a better powerband. Yamaha has also seen fit to mount the best suspension on the little YZ; it's also the easiest to adjust.

Braking on the Yamaha was good and the controls were fine for smaller riders. While the Yamaha is the smallest of the minis, riders five-foot-three and taller complained about the small hand levers and an overall small seating position.

The Yamaha has a gap between second and third gear where the engine bogs for the tiniest moment. That gap becomes very obvious on starts. The YZ loses five to 10 feet during that shift, but will make it up if the start is long enough. In the razor-edged world of mini racing, however, that's too much of a lead to give up on the start.

On the other hand, the Yamaha turned in the fastest lap times on a hard, dry, powdery track with all three riders on it. But while the Yamaha makes time going into the corners, the KX makes it coming out. If there are Kawasakis ahead of your YZ, you have to work hard to get around. The Yamaha was about even with the Kawasaki on rough straights.

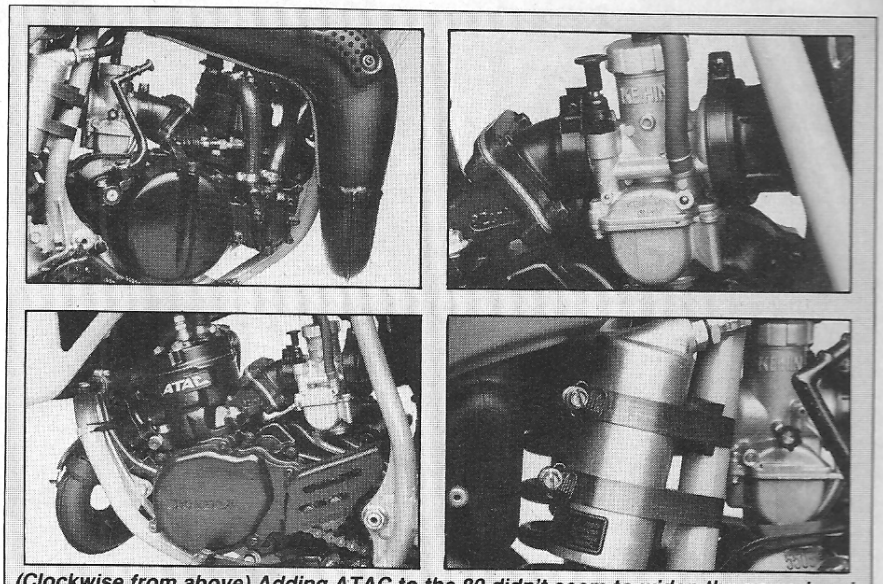
Honda has built the biggest of the 80s with their CR80R. Riders up to five-foot-eight could turn fast lap times on it; even riders over six feet tall enjoyed it! But for a mainstream mini, the suspension was too stiff. The CR's fork received good marks from our riders (100 to 135 pounds), and the rear suspension was good on huge bumps, but the choppier sort of bumps bounce the little Honda around going into a turn.

The Honda steers a little slower than the other two, but the CR is by far the most stable at speed and loves the outside line on sweepers. Power delivery on the Honda is more abrupt than either the KX or YZ, and while the excellent clutch makes that jolt manageable for more aggressive riders, the Honda makes life a little difficult for the middle-of-the-roaders.

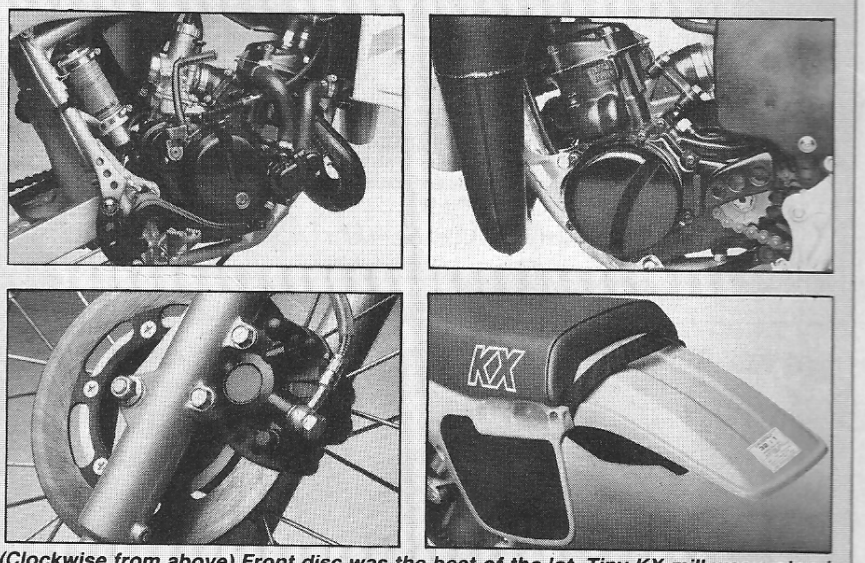
One final warning: When the track was loamy with rolling bumps, the Honda was a rocket.

In a shootout, the winner should be the best for the widest range of riders of varying skills and sizes. Even with its faults, the KX80 fits that bill for the third year in a row, but Kawasaki had better look over their shoulder—Honda and Yamaha aren't far behind.

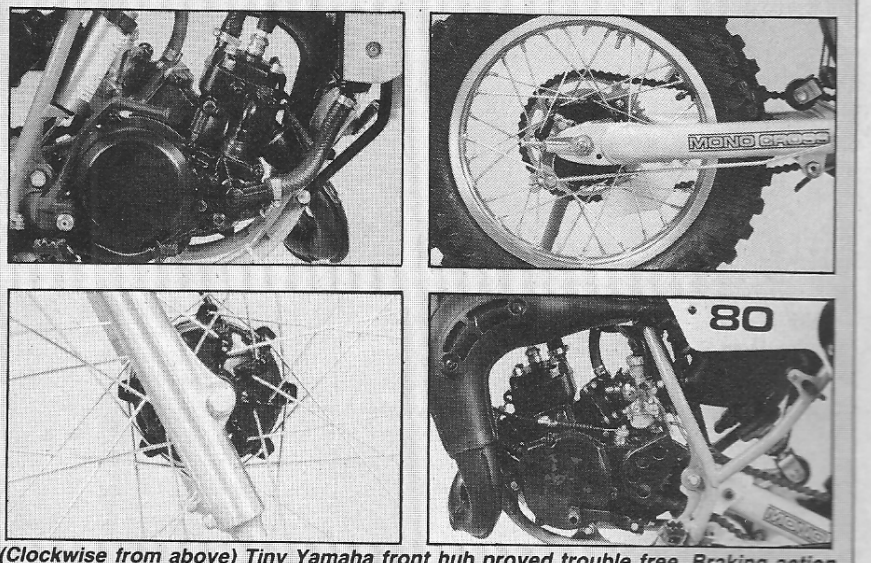
In fact, for a taller rider, the Honda is a better machine. Everything about the Honda seems geared for the expert rider. If we were expert riders, we would buy the Honda, dial in the suspension and go win races. When everything else is equal, the Honda gives the rider a little more confidence when the speeds get real high. That same trait has made the Yamaha YZ250 the privateer's choice in motocross.



(Clockwise from above) Adding ATAC to the 80 didn't seem to widen the powerband much. Shifting is excellent. Kickstart lever is a little awkward. Keihin carburetor was fine, but Showa shock wasn't a favorite among our test riders.



(Clockwise from above) Front disc was the best of the lot. Tiny KX mill was a standout performer as well, though it didn't have the most horsepower. Shifting was a little notchy, but pipe was tucked in. Grab strap above fender was helpful.



(Clockwise from above) Tiny Yamaha front hub proved trouble free. Braking action was good. The engine was an able performer that liked rpm. Monocross got good reviews for its performance and ease of adjustability. Pipe tucked in well also.

PHOTOS: RICH COX

MINI MX MISSILES

At the other end of the spectrum, the Yamaha is the winner for any rider in the suspension sweepstakes, but its engine is harder to handle than the KX. The Yamaha makes a lot of speed because of the overall unity between its outstanding handling and good engine. Riders who are light and/or small should ride the Yamaha.

The mini starting line is definitely more colorful this year, and, judging from these three bikes, the racing should be just as interesting. **DR**

WHAT WENT WRONG?

We had a variety of problems with the minis during their stay at the *Dirt Rider* space station. During the photo session, the Yamaha digested a little water through its air cleaner; that caused it to foul a plug and lose some compression. After a new piston and ring at the track the next morning, the bike was up to snuff. Then after getting hot, it again refused to run properly. Water in the ignition cover had turned to steam and the ignition refused to work properly. After a fair bit of drying time, the engine started and ran until the dyno test. There the Yamaha ran but wouldn't pull over 9000 rpm. We replaced the ignition and had no more trouble. Final word: Take care to dry your Yamaha ignition after any exposure to moisture!

During the ignition check, Yamaha mentioned that they have found the ignition timing marks on *all* YZ80Ns are stamped wrong at the factory. There is one on the ignition backing plate and another on the case that should normally line up as illustrated in last month's "Service Dept." Farther down the backing plate are three marks that indicate correct, full recommended advance and full recommended retard for the timing. Line the case line up with middle mark or set the timing with a dial indicator as per Yamaha specs for a faster engine that runs cooler.

Our Honda sprang a head gasket leak that was corrected by a new gasket and "Copper Coat" gasket sealant. We also noted scuff marks on the cylinder, but the engine was running, so we buttoned it up and finished our lap time tests. After the testing, we found the piston had lost a wrist pin clip. A new cylinder was fitted before the dyno test.

—Karel Kramer