

Honda CR250R

Keeping the same target as last year's CR250 Red Rocket, Honda fires a new salvo: Meet the Retrorocket.

BY DAVID DEWHURST

Sometimes, improvements can spoil a really good motorcycle. Like Honda's new and improved CR250R, for instance. It's a textbook example of how a frontrunner instantly can become a backmarker with a few well-intentioned but misdirected model-year refinements. Granted, this newest 250 Elsinore looks the part of the modern-day motocross racer right down to an FIM-number-plated T. But in certain all-important performance aspects, it's not as good as last year's CR250—or, for that matter, as good as what people were riding four or five years ago, back when engines were hot and suspensions were not.

Not coincidentally, the king villain here is the suspension, and for various reasons, depending on which part of which suspension you're talking about. Too-stiff spring rates do the dastardly deed in one area, while insufficient damping and excessive preload are the culprits in others. Whatever the causes, though, the result is individual wheel rates that are grossly mismatched, not just to one another, but to the demands of contemporary motocross.

Compounding the suspension's inadequacies is the steering geometry, another supposed improvement for 1980. The CR got a double-downtube frame (as opposed to single downtubes on all CR250s since the first one in 1973) that promises greater rigidity and, through slightly different geometry, quicker steering. But while the frame undoubtedly is more rigid, the quickened steering seems to cause as many problems on this bike as it cures. Moreover, despite the presence of an impressively wide and unusually torquey powerband on the new motor, its effectiveness is undercut somewhat by a set of gear ratios left over from last year's higher-revving CR250 powerplant.

Neither the gear-ratio mismatch nor the steering geometry would, however, be sufficient to render the CR250R ineffective on its own. A rider could adapt to the steering quirks, and a change in final gearing would improve the engine-to-gearbox relationship. But what could *not* be adjusted to, no matter what the riding style, is the suspension. Because no matter how you look at it, the suspension simply doesn't work. The fork has too much spring preload and too little damping, so it behaves not unlike a double-barrelled pogo stick. And the shocks, which also have insufficient damping, are further penalized by excessively stiff main springs that cause the rear end sometimes to kick up wildly and always to be skittery.

What's most unusual about all of this is that half of the suspension—the fork—essentially is last year's fork with a few unrevolutionary changes. Although the travel was kept the same at 11.6 inches, the slider legs and stanchion tubes both were increased in length to provide 30mm more overlap at full extension. No problem here, for all that does is reduce binding as the fork compresses during the first few inches of travel. There also are air caps on the fork this year, and the lesser of the fork's dual spring rates is slightly softer but preloaded a bit more. Finally, the rebound damping is seven-percent lighter.

At the rear, the changes were much more extensive. The chromoly steel swingarm was lengthened 15mm, the bottom shock mount moved 2.5mm closer to the arm's pivot, and last year's unreservoired gas-emulsion Showa shocks gave way to a pair of attached-reservoir units from the same company. The new shocks have two-way-adjustable rebound damping and a gas-charging system in which a thick neoprene diaphragm separates the

high-pressure nitrogen from the damping fluid. And supporting the whole business are two individual single-rate springs on each shock; a short and lightly preloaded one controls initial wheel movement, and a larger main spring cushions the remainder with the aid of a large urethane bump-stop designed to prevent severe bottoming at the end of the 11.7 inches of travel.

Despite what this revised suspension may promise, however, it makes Honda's red rocket ride and handle like a runaway red beach ball. The CR skitters and bounds and bounces around the track in an unpredictable fashion, hampering fast lap times and speeding up rider fatigue. Every one of our testers returned from his first ride on the CR shaking his head, unable to believe that he had just ridden a 12-inch-travel motocrosser of the Eighties and not a short-travel refugee from the mid-Seventies.

Most of the problems stem from the rear suspension's main shock springs, which seem to have come from a Peterbilt warehouse. Regardless of their origins, though, they certainly are strong enough to support something a lot heavier than the CR250R. The lightest of each shock's two springs works nicely on smaller bumps, giving a soft initial travel. But the rear end seems almost to go solid as the light spring becomes coil-bound and the main spring comes into play. So when the CR hits a hole or sharp bump, the back end either kicks up and down or hops side to side or does both, depending upon its attitude at the time of impact. On one occasion, in fact, the kick caused by hitting a sharp step on the track surface sent the CR into a terrifying top-gear endo that luckily didn't hurt the rider. That same obstacle could be hit without incident by a Suzuki RM250T and a Husky 390 we had along during the test. Moreover, the Honda's rear-end handling problems were aggravated by the light rebound damping, for once that heavy spring did get compressed, the shock would rebound quickly enough to vault the rear end skyward.

To a lesser extent, the front end suffered similar problems. With a lot of preload and not a lot of damping, the fork would extend too quickly and therefore tend to set up a pogo frequency of its own. On one set of whoop-dee-does in particular, the bike would sproing off of the first one, crash down in the trough between the two and then uncoil over the second almost without making any wheel contact with the ascending face of whoop No. 2.

This same leaping-about also made it difficult to point the bike accurately into a corner, especially one with a narrow berm,

where extreme accuracy was called for. The whole cornering business would then become like a motorized game of Russian roulette: As we would dive into some corners, things sometimes would click, and on others everything would explode in our faces. Unfortunately, it seemed we had as many explosions as clicks, for the bike hopped and bobbed wide of turns as often as it didn't. On the joyous occasions when the CR *did* hit a berm squarely, it often bounced back on its underdamped suspension after making initial contact, then tried to climb up and over the outer berm wall, often successfully.

The only way we managed to inhibit the fork's return speed was to let out all the air, which lessened the preload. But then the fork bottomed much too often to be really

effective. We did, however, manage to effect a small improvement in the CR's suspension with a bit of fine-tuning and the aid of some borrowed parts. Our first move was to drain the 290cc of stock 5-weight oil and replace it with 310cc of Bel-Ray 10-weight. That stiffened the compression damping more than we wanted, but it also firmed up the rebound damping enough to slow down the pogo effect of the fork. And with eight psi of air working in concert with the higher oil level, bottoming was held to a reasonable minimum. Still, the fork left a lot to be desired, thanks to its excess of spring preload and high ratio of compression-to-rebound damping.

With the fork working better, we turned to the rear end and threw away the stock 136-pound-rated main springs in favor of

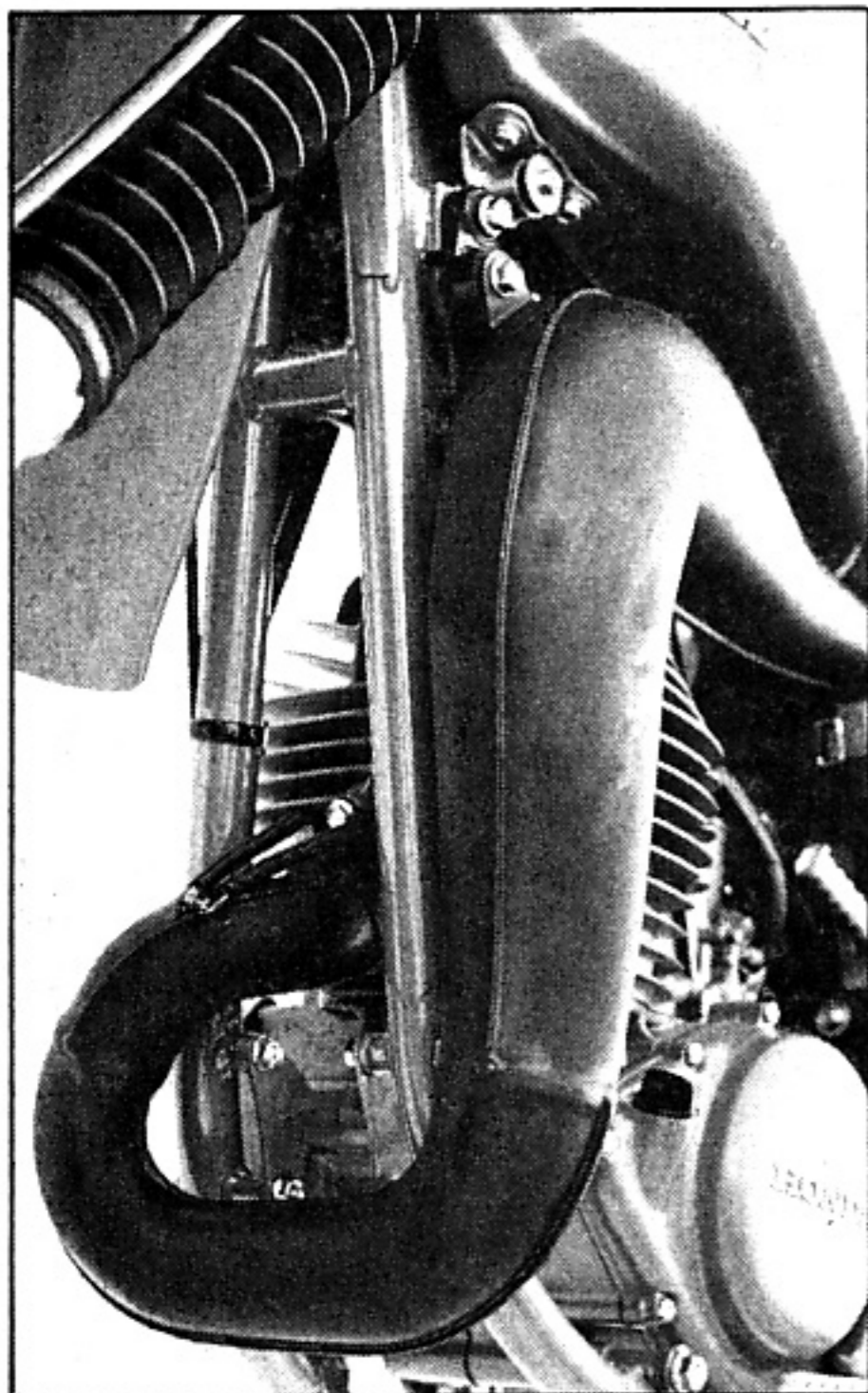
124-pounders from a 1980 CR125R. With the rebound damping set in the hardest of its two positions there was a noticeable difference—*too* much of one, as it turned out, because the 125's springs were a bit too light for the 250. But at least they allowed the full travel to be readily used for the first time, and so the rear wheel stopped kicking up so strongly. Unfortunately, the Showa shocks still were underdamped, even with the soft springs fitted. After-market shocks seem the only answer to this problem, as do a set of alternative springs and damper rods for the fork.

But while the suspension did behave better in its tuned mode, the CR still had a steering quirk, an ever-present tendency to sit upright when leaned over in a corner. Blame part of that on the '80 CR's quicker

Continued



PHOTOGRAPH BY DAVID DEWHURST



Twin tubes for greater rigidity

Swinging along in a double cradle.

steering geometry (half a degree steeper head angle and 4mm less trail) and blame the rest on a higher center of gravity imposed by locating the engine a bit higher in the new frame for more ground clearance. This inclination not to be inclined was felt most often on slow, tight turns or when rim-riding a corner out on the berm. In either case, the CR constantly felt as though someone were on the outside of every corner tugging away at the bike with a bungee cord. The quick steering tells the motorcycle to go around sharp corners quickly, but the relatively high center of gravity makes it want to sit up in the process. And once you do get the CR to turn sharply, it wants to continue doing so as you exit the corner, necessitating a firm tug on the handlebar to straighten it out.

What's more, the combination of quick steering, relatively short wheelbase and oversprung suspension made for some interesting, if not entertaining, trips down fast, bumpy straights. The Elsie showed a twitchy dislike for the fast-and-rough, wagging its handlebar in protest just about every time it encountered those kinds of track conditions. A rider can counteract the CR's twitchiness and learn to deal with its highside tendencies, but that takes extra effort and concentration, two things not always available at the end of a moto.

We managed to inject our CR with a little bit of steering precision by swapping the standard Bridgestone tires for a set of SoCal-proven Metzeler. The CR then would track better, and it even became en-

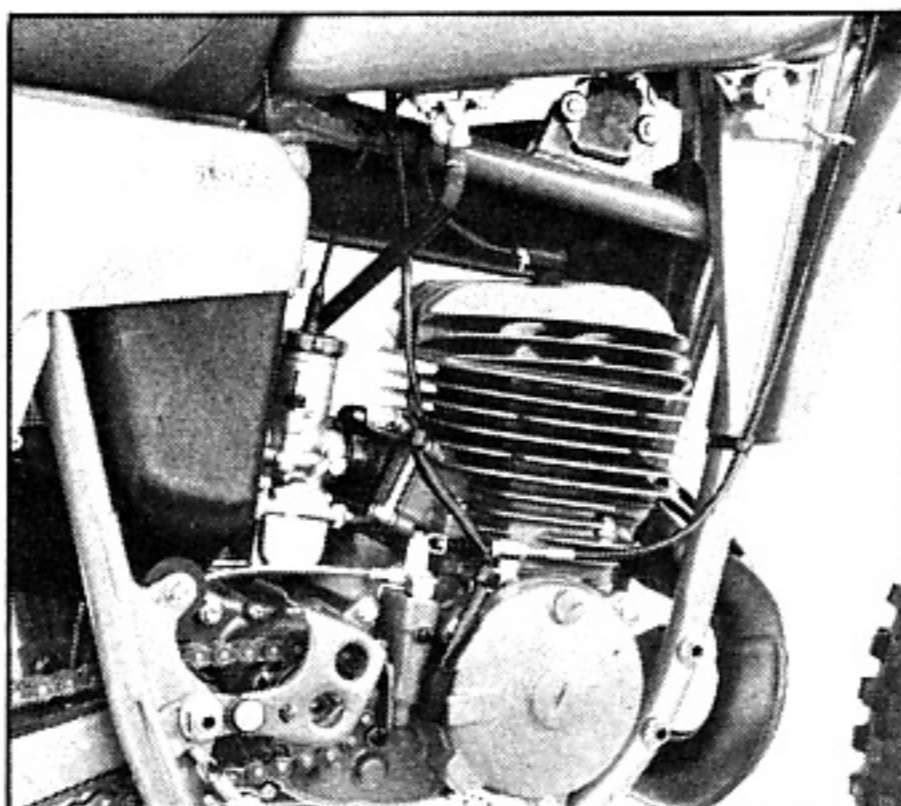
joyable to ride on smoother sections of the track and through some fast, sweeping turns. The Honda still is the same first-rate powerslider that its predecessors were, provided that it's not asked to get all crossed-up on a bumpy turn.

Those Metzeler also helped the CR put more of its power on the ground. That was an important move because if the bike does nothing else well, it does churn out an impressive lot of highly usable, exceptionally tractable power. Surprisingly, though, not much has changed within the CR's reed-valve two-stroke, just a few subtle refinements that have produced much stronger midrange performance.

The most obvious change is to the barrel, which now has a central exhaust port that routes the exhaust header pipe through the new double-downtube frame. Apart from that, things are pretty much as before. Oh, the exhaust window is 0.75mm narrower than that on last year's engine, and the vertical bridge that bisected the inlet port is gone, but that's about the extent of the internal changes. And so the

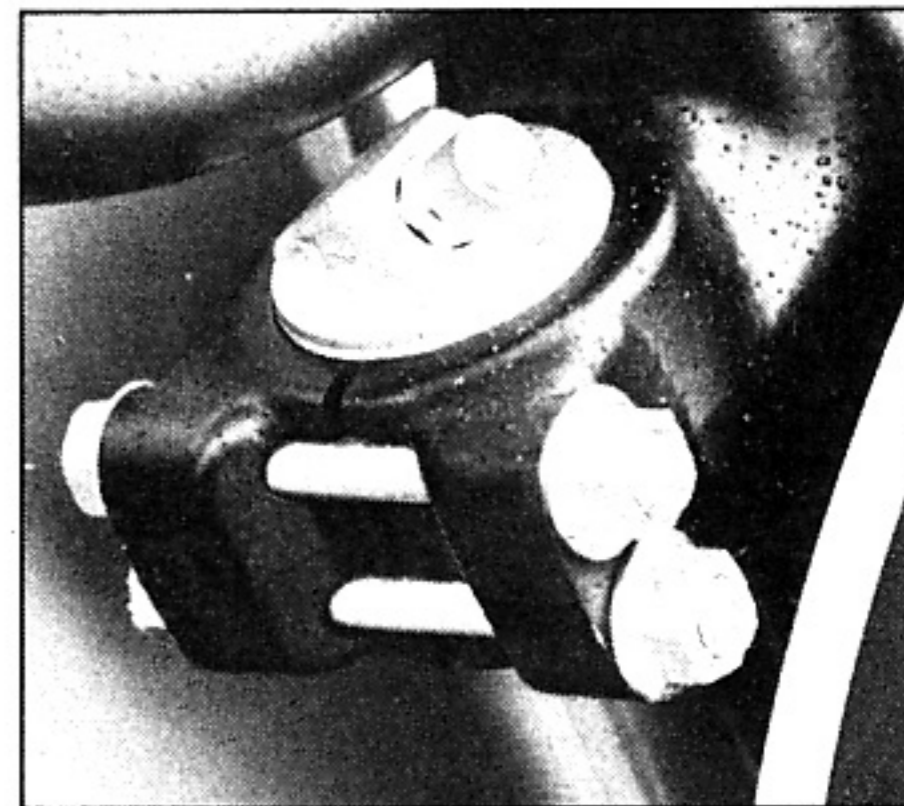
broader power curve has been achieved simply and inexpensively by altering the ignition's advance curve and rethinking the dimensions of the exhaust system. By carefully altering these two components, Honda's engineers have dropped the peak power rpm by 500 revs and given the engine stronger midrange without losing any maximum horsepower at all. That such radical changes in performance can be achieved so subtly shows just how important the ignition and exhaust system are on a modern two-stroke.

Utilizing the impressive new powerband to the fullest requires that you keep the motor pulling in the midrange, almost like on an Open-classer. Revving past maximum horsepower rpm only results in a sharp drop-off of power that will allow your competition to outrun you. But when ridden in the middle of its rpm range, the CR will hook up and move out at least as well as any 250 on the track and better than the vast majority of them. There's a minimum of wheelspin, despite the rear suspension's problems, and crisp, in-



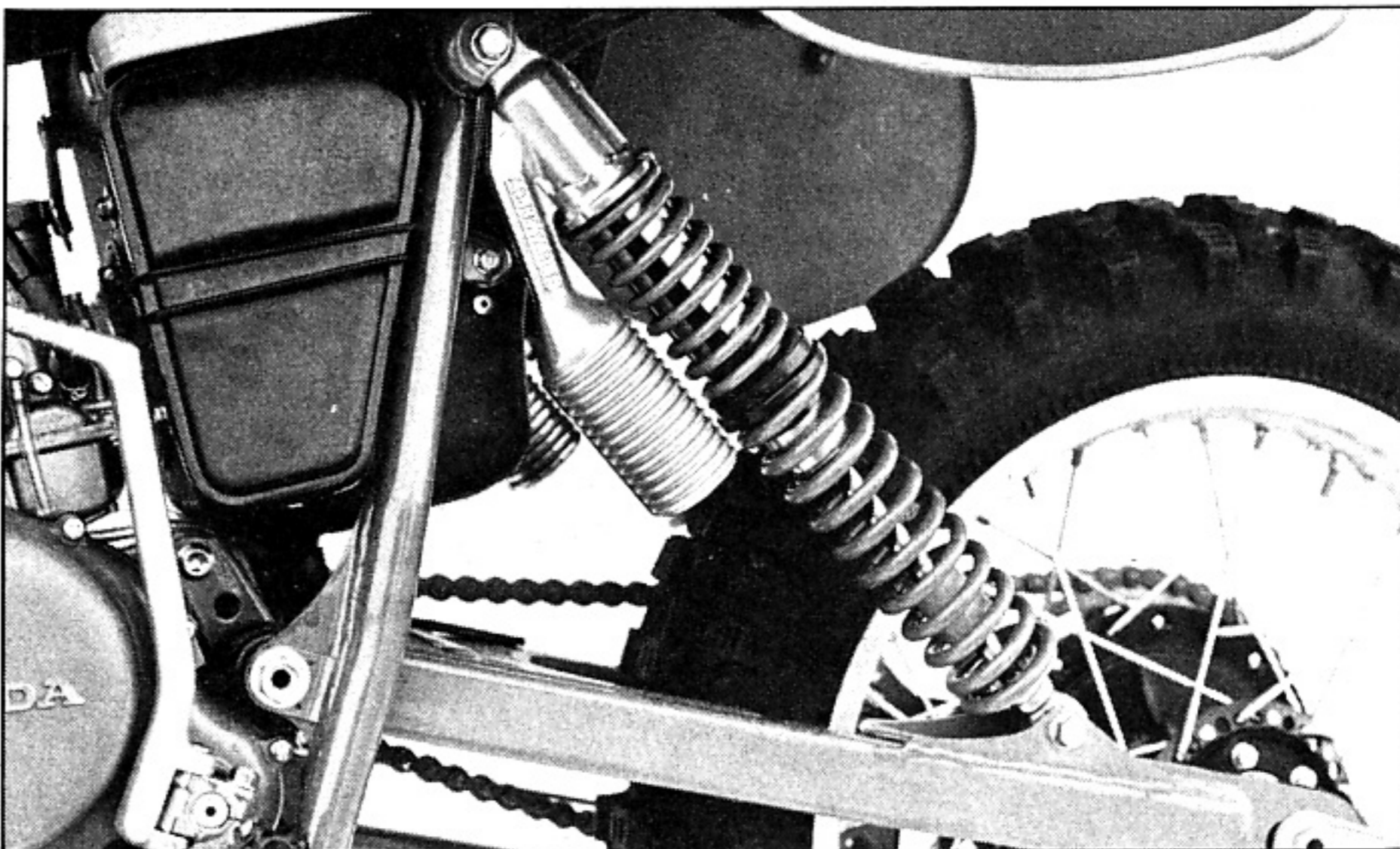
Red Rocket propulsion pack

Open-class-style quarter-liter eater.



Aircap adjustability

Working under pressure.



Adjustable Showa shocks with gas in reserve

A potentially good move overridden by a bad choice of springs.



stantaneous throttle response is on tap anytime the twistgrip is snapped open.

If there's anything to fault about this admirable engine, it's that the gearing is so low that as delivered, the ratio spread doesn't best utilize the torquey powerband. By comparison, an RM250T Suzuki, also one of the lower-revving 250-class racers, can go as fast in fourth gear as the Honda can in fifth. Swapping the stock 14-tooth countershaft sprocket for a 15 would help broaden the ratio spread, but first gear then would be a bit tall for consistent holeshots on the start. Ideally, the 1980 CR should have gear ratios mated to the new powerband, not those left over from last year's higher-revving engine.

Despite its ratios, though, the CR's engine is very easy to live with, as are the remaining areas of the machine that have no direct connection with its handling. The brakes are powerful and yet not prone to inadvertent locking, and both the seated and stand-up riding positions are spot-on for most riders. The handlebar is wide, the seat soft and their relative positions just about right for the average American rider.

Speaking of America, it's interesting to note that the CR250R is assembled in Honda's Columbus, Ohio factory, and that many of its chassis parts are made in this country. Included in that list is the 2.3-gallon gas tank, which not only is the CR's inaugural plastic tank, but the first one to have a reasonably sized filler opening, as well.

Actually, therein lies the essence of the CR's problems. If the bike had proper suspension, the gas tank wouldn't have had to survive all of those crashes, for most of them wouldn't have occurred. But occur they did. And because of the frequency of those get-offs, not one of our testers ever felt comfortable riding the CR, and one of them openly *avoided* riding it.

None of this, of course, is to say that the Honda isn't rideable, only that it is extremely difficult to ride at competitive speeds for the duration of a long moto. Nor is the message here that the CR is unfixable, for a knowledgeable tuner with a generous parts budget could turn the powerful CR into a fiercely competitive racer in no time flat. But why would anyone bother? There are showrooms from coast to coast brimming with much better 250cc motocrossers, bikes that are ready to roll out the door and into victory circle with little more attention than attaching the numbers and filling the gas tank.

Considering that state of affairs, it's unlikely that the new CR250R will enjoy much success this year, either on the track or in the showroom. What went wrong between the designer's drawing board and the finished product is uncertain, for Honda surely didn't *try* to build an incompetent motocross machine. What is certain, though, is that with the CR250R, Honda has proven beyond a shadow of a doubt that an improved motorcycle is not necessarily a better one. ●

Ride Review

- As a former Honda CR250R owner, I expected the gates of heaven to open before me as I mounted the brand new version. With its new engine, featuring a center exhaust port, and a new double downtube frame, I thought this had to be the race bike of my dreams. It was. Too bad the dream turned out to be a nightmare.

I had been aboard the Honda for only four minutes or so before it introduced me to Mother Earth. And before our evaluation was complete, old Mom Earth and I became very well acquainted.

My first problem with the new CR came when I found I couldn't control the front end. It bounced around and went anywhere it wanted to. And that didn't mean the rear end of the bike would follow, either. It seemed as if the back end with those twin pogo-stick shocks spent more time passing directly overhead than it did on the ground. And along the way, the bike and I invariably parted company.

This is one motocross test that I'm glad to see the end of. I spent so much time on the ground recently, that my sore muscles feel as if I'd aged 30 years in just three days. I've learned a lot in that time, enough to make me wonder if Honda's forgotten what it learned in the past 30 years.

—Dean Taylor

- Suddenly it was 1975 all over again, and I was floundering hopelessly on a bone-jarring, wheel-hopping, short-travel motorcycle that was intent on going where *it* wanted, not where I pointed it. The only trouble, though, was that it was 1980, not 1975, and the motorcycle I was sparring with was a brand-new, long-travel CR250R. But if I had used just the handling of that motorcycle as a barometer of the year I was in, I never would have guessed that it was 1980.

I almost could be made to believe that in actuality, this CR is a '78 or '79 model and that the one I rode last year really is *this* year's upgraded new model. Because in most performance categories other than power output, the '79 CR is a better motocrosser than the '80 version.

Don't ask me how or why it got that way, because I don't know. Maybe Honda's Great Computer spun a main bearing, or perhaps the company's test riders do their testing on racetracks unlike any I've ever seen. All I know is that I can't ride this Honda worth a damn, yet I can step off of it and right onto something else and at least *look* like I know what I'm doing. That's why this CR250R is one test bike that I'm not going to miss one little bit. —Paul Dean

Honda CR250R



SPECIFICATIONS:

IMPORTER: American Honda Motor Co.,
100 W. Alondra Blvd.
Gardena, California 90247

CATEGORY: motocross

SUGGESTED RETAIL PRICE: \$1798

ENGINE

Type two-stroke vertical single
Port arrangement one reed-valve-controlled intake,
four transfers, one booster transfer, one exhaust
Bore and stroke 70.0mm x 64.4mm
Displacement 247.8cc
Compression ratio (corrected) 7.3:1
Carburetion one 36mm Keihin slide / needle
Air filter washable oiled foam element
Lubrication pre-mixed fuel and oil
Starting system primary kick
Ignition flywheel-magneto CDI
Charging system none

DRIVETRAIN

Primary drive straight-cut gears
Primary drive ratio 3.25:1
Clutch wet, multi-plate
Final drive type #525 chain (5/8-in. pitch, 5/16-in. width)
Final drive ratio 14/49: 3.50:1
Gear Internal Overall MPH per
gear ratio gear ratio 1000 RPM
I 1.90 21.61 3.7
II 1.59 18.09 4.4
III 1.24 14.11 5.6
IV 1.00 11.38 7.0
V .84 9.56 8.3

SUSPENSION/WHEEL TRAVEL, IN.

Front air / spring, 37mm stanchion tube
diameter / 11.6 in. (295mm)
Rear 2-way adj. rebound damping, 5-way adj. spring
preload / 11.7 in. (297mm)

BRAKES

Front drum, single-leading shoe
Rear drum, single-leading shoe, rod-operated

TIRES

Front 3.00 x 21 Bridgestone Motocross M17
Rear 5.10 x 18 Bridgestone Motocross M20

DIMENSIONS AND CAPACITIES

Weight 222 lbs. (100.6kg)
Weight distribution 47% front, 53% rear
Wheelbase 56.3 to 57.5 in. (143 to 146cm)
Seat height 36.4 in. (925mm)
Handlebar width 33.5 in. (851mm)
Footpeg height 16.5 in. (419mm)
Ground clearance 12.5 in. (316mm), at frame cradle
Steering head angle 28.25 degrees from vertical
Front wheel trail 4.5 in. (114mm)
Frame tubular chromoly, double front downtubes
Fuel tank plastic, 2.3 gal. (9l) no reserve
Instrumentation none

PERFORMANCE

Top speed (calculated) 65 mph (105 kph)

All weights and measurements are taken with machine
unladen and fuel tank empty.

COMPARATIVE TEST DATA:

Make & Model	Horsepower	Wheel Travel Front/Rear, in.	Weight (fuel tank empty), lb.	Weight bias Front/Rear percent	Transmission, number of speeds
Honda CR250R-79	27.7	11.8/11.0	220	45.9/54.1	5
Honda CR250R-80	27.5	11.6/11.7	222	47/53	5
Yamaha YZ250G	29.6	11.2/11.6	217	46.5/53.5	6
Can-Am 250 MX-5	32.1	10.8/10.0	218	45.9/54.1	5
Husqvarna 250CR	24.3	11.8/11.8	227	44.5/55.5	5
Suzuki RM250N	27.1	11.2/11.8	218	46.3/53.7	5

PERFORMANCE:

