



CYCLE DIRT TEST

HUSQVARNA 250 CR

A new engine and a six-speed transmission in a good-handling chassis will keep Husqvarna alive in 250 motocross.



HUSQVARNA 250CR

● HAVE YOU EVER MET A MOTOCROSSER who buys strictly by the numbers? He's the guy who adds peak torque, maximum horsepower, redline revs, front suspension travel, rear suspension travel, the capacity of the remote oil reservoirs, the number of spokes in the wheels and the knobs on the tires—and then divides this sum by his lucky number which is his total weight plus his new riding number minus his last finishing position. He believes that the machine's superior technology will deliver him from the wilderness of the middle of the pack and deposit him securely in the winner's circle.

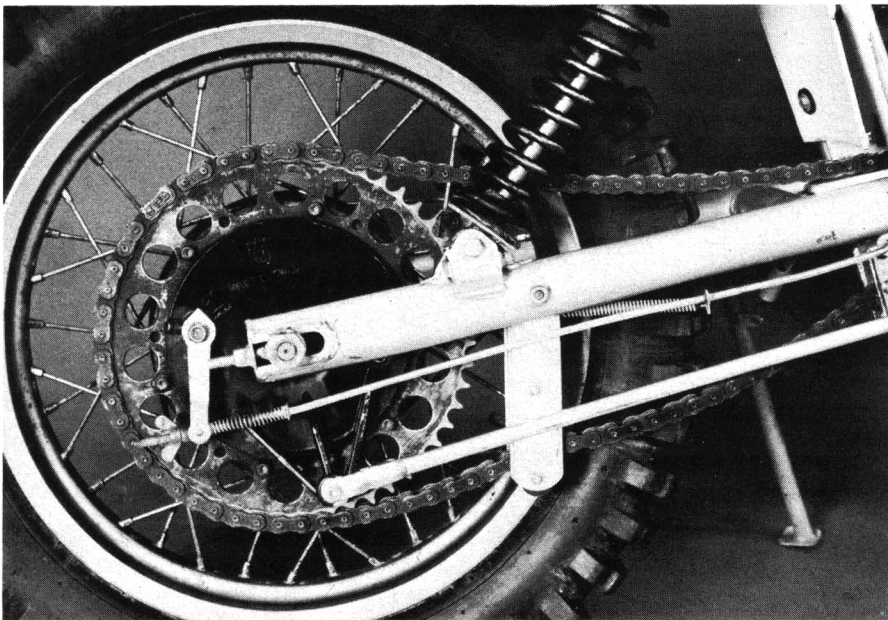
Experienced motocrossers know better. And so does Husqvarna, the Swedish company that has sold a long string of motocrossers to Americans. The European view is pretty straightforward: your motorcycle's specification chart won't make you a winner. Equipment may establish edges, but riders create victories.

Consequently, the owner's manual for the Husqvarna 250CR doesn't stress fancy speed tuning or give you a list of the latest go-fast accessory pieces. Rather, the last ten pages of the manual are devoted exclusively to developing a personal training program. While motorcycles are becoming more sophisticated, Husky realizes that *people* must ride the motocross machines. In a sport that is so physically demanding, Husqvarna has found that a tuned-up rider makes fuller use of any Husky's capabilities.

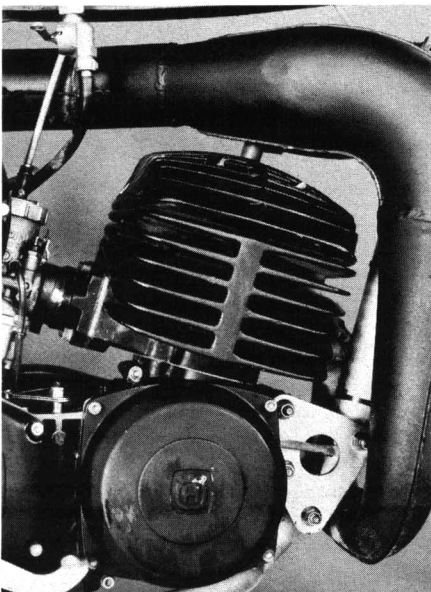
"Your aim during this training must be to get smoother riding technique. With smoothness, you don't need to work so hard—you can do the work with less energy loss."

The Husqvarna manual covers areas of training such as warm-up exercises and heartbeat-per-minute maximum frequency. The personal approach used in the owner's manual, taken together with the quality of the motorcycle, helps to assure the loyalty of Husky's riders. The reader begins to understand that Husqvarna wants to see the owner win—and not become another wheezing trackside mechanic shuffling through the shrapnel that once was a tuned-to-the-max missile. The owner gets tips on conditioning, rather than mass-produced, lightning-quick, flashy alternatives. The manual is chock-full of valuable information which, if taken and practiced seriously, will help anyone improve his riding.

Husky isn't in the head-to-head horsepower war in 250 motocross. According to Husqvarna, their intention in redesigning the 250CR's engine was to produce a wide and usable powerband. And their approach has been partially successful. The CR doesn't have a wide powerband in the sense of having steamroller torque at 4500 rpm. The CR's engine revs more slowly than many Japanese 250s but has an extended top-end (8000-9000 rpm).



Frame and swing arm are pure-grade chrome moly. Backing plate has lining wear indicator but brake is marginal.



Major revisions in the 1978 Husqvarna engine have brought the CR's maximum horsepower to 28.80



A standard oil/spring fork handles the front suspension. Accessory air-caps improve fork adjustability.

In this current age of hyperactive, explosive power available from 250s, the Husqvarna is definitely the easiest bike to ride in its class. Although excessive wheelspin usually accompanies the power-burst of most rival 250s, the Husqvarna 250CR, thanks to the tuning of its engine, its rigid frame and excellent suspension, transmits every bit of power its engine produces directly to the ground.

In terms of sheer output, the Husqvarna makes 1.3 horsepower less than the Honda CR250R and 1.6 horsepower less than the Yamaha YZ250E at 7500 rpm. However, both Japanese bikes sign off abruptly at 8500 rpm, but at that point the Husky reaches its peak horsepower output of 28.80, which translates into 5.3 horsepower more than the Honda and nearly six horsepower more than the Yamaha at 8500. The Husqvarna pays for this topside power elsewhere. Both the Honda and Yamaha motocrossers pull more strongly by far in the mid-range.

Once you've made an adjustment in your riding style, running the Husky high in the rpm range, the 250CR can become competitive. These numbers clearly indicate that the Japanese 250s will have an advantage exiting corners; but should time or terrain keep riders from shifting, the Husqvarna will punish your delay far less than the Honda or Yamaha.

When you first sit on the Husqvarna you immediately feel comfortable. The bars have a nice bend to them; the footpegs are mud-proof and in the right place. Magura contoured levers and quick-throttle add to rider comfort. The seat-tank junction is nice and narrow. Everywhere you look the CR is ready for racing.

The white plastic fenders are wide, and during our extended mud riding were often caked with thick moist clay. The fender mounting system was excellent, for even after hours of mud riding the fenders showed no signs of weight fatigue. The tank is typically—and ele-

gantly—Husqvarna. The stylish brushed-aluminum bare spots in the red paint have a strong visual appeal that's a Husqvarna tradition.

Husqvarna has used reed valves since 1974; the new CR is no different. After passing through the reed cage into the crankcase, the charge goes up into the cylinder via six transfer ports, and, after ignition, the waste gases exit via a bridged exhaust port.

There's a real surprise hanging on the inlet side of the reed cage. The formerly stock 36mm Bing carburetor has been replaced with a huge 38mm Mikuni, the addition of which has made starting the CR easy. The bike came alive with three or four kicks every time, causing us to wonder if we were indeed on a Husky.

The kick starter, with more bends than a pretzel, tucks in nicely. However, the 10mm nut that tightens the kick lever requires constant attention, for if it is too loose the kick lever will flop out and at the



HUSQVARNA 250CR

very least distract the rider; and if too tight, the lever will refuse to swing out.

The engine's cylinder and head are cooled by massive radial fins. The cylinder has a pressed-in-place liner that will tolerate third-over pistons before needing replacement. With pressed-in liners it is usually impossible to form a uniform seal between the liner and the cylinder itself, resulting in hot spots that score the piston skirt. Nonetheless, our test engine appeared to have a well-sealed fit, and only slight markings were noted on the piston after we had completed our testing. The piston is a single-ring model and uses a hard-chromed ring for long life.

Pressed liners have another common problem: the liner windows and the cylinder tunnels are often misaligned. Husqvarna has dealt with this problem by hand-

retouching cylinders with porting tools before an engine is assembled.

Husqvarna has redesigned the CR's expansion chamber. As has been usual with Husqvarna, the silencer is located in the rear portion of the belly of the pipe. Following the silencer, the pipe is tapered into a long stinger. By removing three screws and nuts, the rear section of the pipe can be removed for direct access to the internal silencer. The exhaust pipe exits the exhaust port on the left side of the main frame downtube and wraps around the frame and up along the right side of the CR. The exit from the cylinder, smooth to ensure non-turbulent flow of spent gases, steadily increases in diameter up to the silencer area of the belly.

To best utilize the Husky's high-rpm power characteristics, the CR has a new six-speed transmission with straight-cut, constant-mesh gears. Throughout our testing the Husqvarna shifted flawlessly.

Once we had adjusted the longer-than-usual gearshift throw, the CR shifted quickly and positively under full power. Downshifts went through just as easily.

The Husqvarna frame, used in the 250CR and in nearly identical form in all Husky off-road bikes, is one of the oldest and most race-proven designs. The CR's frame has a massive steering-head stem and a huge main-backbone frame tube. Although these parts seem larger than necessary, with the use of Husqvarna's pure-grade chrome-moly the CR weighs only five pounds more than the Honda CR250R. Perhaps the Husky chassis could be lighter, but a weight-saving program might well compromise the durability of the frame. And that's a Husky concern. Since older Husqvarna units frequently developed cracks near their welds, the manufacturer now heat-treats the entire frame after the welding has been completed, a process which has,

Make and model	Husqvarna 250 CR	Curb weight, full tank	105.2 kg (232 pounds)
Price, suggested retail	\$1815	Suspension, front	Telescopic, forward-axle fork
		rear	Girling shocks

ENGINE

Type	Two-stroke, air-cooled single cylinder
Bore and stroke	69.5 x 64.5mm (2.74 x 2.54 in.)
Piston displacement	245cc (14.95 cu. in.)
Compression ratio	12.3:1 (full stroke)
Carburetion	1; 38mm Mikuni
Exhaust system	Expansion chamber with silencer
Ignition	Magnetically triggered, magneto-energized electronic CDI
Air filtration	Oiled foam
Oil filtration	None required
Bhp @ rpm	28.80 @ 8500
Torque @ rpm	19.99 @ 7500

TRANSMISSION

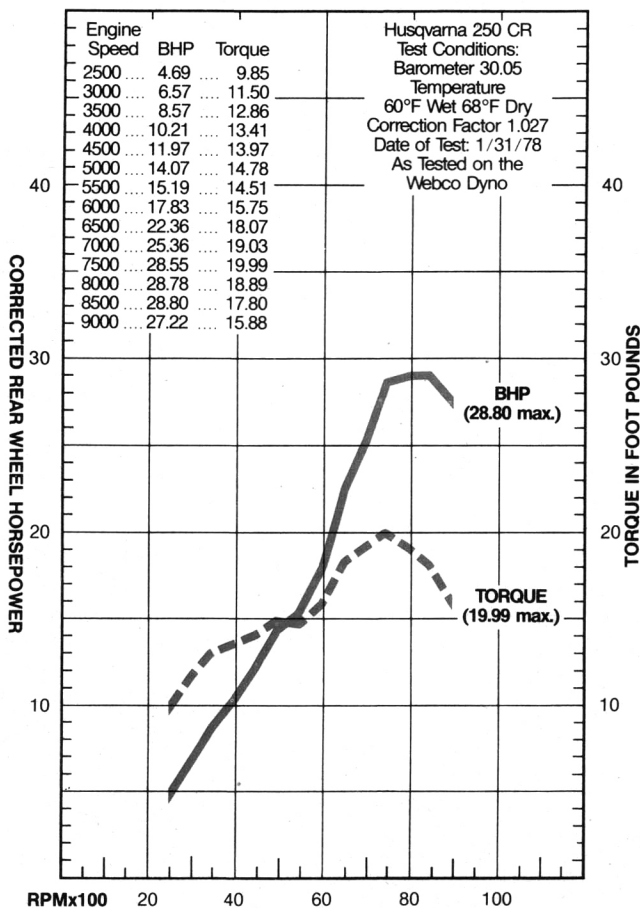
Type	Constant-mesh, six-speed
Primary drive	Straight-cut gears; 2.41 (29/70)
Final drive	5/8 x 1/4 in. chain
Gear ratios, overall	(1) 2.07 (2) 1.56 (3) 1.24
	(4) 1.04 (5) 0.88 (6) 0.78
Oil capacity	1.6 lit (1.69 qt.)

CHASSIS

Type	Tubular steel, single downtube, semi-cradle
Wheelbase	1455mm (57.28 in.)
Rake/Trail	29°/152mm (5.98 in.)
Brake and hub, front	drum, conical, double shoe
rear	drum, conical, double shoe
Wheel, front	Shoulderless alloy
rear	Shoulderless alloy
Tire, front	3.00 x 21 Trelleborg 2 pr
rear	5.00 x 17 Trelleborg 4 pr
Seat height	927mm (36.5 in.)
Ground clearance	325mm (12.8 in.)
Fuel capacity	7.8 lit (2.06 gal.)

CUSTOMER SERVICE CONTACT

Husqvarna Motorcycle Co. Inc.,
4925 Mercury St.
San Diego, CA 92111
Attn: Customer Service



they report, cured the old problem. We examined our test bike closely and found no such stress cracks on the frame.

The chassis is a single-downtube design that splits into a semi-cradle to support the engine. The steering-stem load is supported by tapered Timken bearings. The silver frame is clean in design; but small tabs are added for the pipe, air box and number plates.

Although aluminum swing arms are the current rage in motocross, Husqvarna uses chrome-moly for the CR unit. An aluminum swing arm is comparable in strength to a chrome-moly swing arm only when both are equal in weight, and since aluminum is a less dense metal than chrome-moly alloy, the aluminum arm would therefore have to be larger to be as strong. On the CR, Husqvarna opted for chrome-moly and a compact, rigid arm.

The swing arm rotates on four needle bearings. Our testing included both muddy and hard-packed terrain, and a close inspection at the end of the test period indicated the needle bearings, sensitive to a dirty environment, had been effectively sealed off from the elements and survived nicely.

The gas-charged emulsion shocks, which attach to the swing arm in a forward-mounted and slightly laid-down position, are made exclusively for Husqvarna by Girling. The shocks use 36mm bodies instead of the standard 32mm bodies. The greater oil area allows the shocks to contain more oil, resulting in greater resistance to fade from overheated oil.

The shocks offer 10.5 inches of rear-wheel travel. The travel is consistent with good progressive spring action. Each Girling employs two separate springs, one long and one short. Both sections of wire have the same pound-inch rate, but because they differ in length, the two springs yield a dual rate equivalent to an 80/140 pound-inch combination. The CR's rear suspension was as good as any conventional dual-shock system we have tested.

Husqvarna manufactures the front fork, a standard spring-oil model with nine inches of travel. It performed remarkably well so long as the fork legs were full of oil. During the first moto in which we raced the CR, the left fork seal failed and caused a severe fork-oil leak. Between motos we replaced the lost oil; again the fork functioned nicely until the oil streamed past the faulty seal; at that point the front suspension became too soft and the damping action was all but lost. We replaced the seal with another stock Husqvarna seal and had no further fork problems for the remainder of the test.

Many riders replace the Husky's fork caps with air adjustable caps to give the Husqvarna the broad-range adjustability which an air fork offers. We had a chance to ride a local pro's bike and compare the air-fork modification to stock-fork performance; all *Cycle* test riders preferred the



air accessory model. A local Husqvarna shop offers the air caps for only \$11.95—an item we think is well worth the price.

Each fork leg attaches to the triple clamps with only one bolt in the top yoke and the normal two bolts in the lower mount. Given this mounting system, we anticipated a fork wobble; that never happened, so credit must go to Husky's design and materials. The handlebar attaches to the triple clamps with angled clamps that assist the CR's quick steering. Rubber-mounted, the handlebar contributes its share to the Husky's amazing lack of vibration.

The 250CR has a rake of 29 degrees and that, coupled with the Trelleborg 3.00 x 21-inch front tire, enables the Husqvarna to corner like a cue ball. Most riders can just slide forward on the tank and pick any line. Mid-turn corrections are also easy, thanks to the quick-response handling of the CR, and that's always welcome news for beginners who often discover their hot line through a corner tends to exit straight through the center of the berm in bulldozer fashion. Maneuverability counts too for experienced riders who may be trying to pass and dodge slow-moving traffic in corners. In

muddy conditions the Trelleborg front tire performed excellently, but on hard-packed adobe it pushed outward in most high speed turns. If you plan to race in predominantly arid conditions, plan also to change the front tire.

Trelleborg makes the new oversized 5.00 x 17-inch rear tire as well. While we were not happy with the performance of the front tire in dry conditions, the rear tire proved absolutely first-rate. The Trelleborg low-profile 17-inch tire has several advantages. First, with the wider and lower tire the suspension can be reworked to increase rear-wheel travel; this can be done by using longer-travel shocks or laying down slightly longer shocks at a more acute angle. Since the tire is actually shorter than conventional 18-inch tires, the savings in height can be translated into greater suspension travel before the tire inevitably contacts the underside of the rear fender. Second, experienced professional riders have recently discovered that 17-inch tires can be run at lower pressures. The tire seems to cushion the rim and to give a softer, smoother ride, especially on long, tough downhills, precisely the type you might encounter at Carlsbad, site of the United States Grand

Prix. Finally, the rear tire's low-profile construction places more tread surface on the ground, which is why we liked this mud-tire even on hard clay. The front tire is of two-ply construction to save weight; the rear is a standard four-ply design.



The Trelleborgs are mounted to a set of new gold-anodized, Husqvarna-manufactured rims. A demonstration of Husqvarna's versatility, the rims have an unusually deep center groove, allowing much easier and faster tire changes, something of direct benefit to enduro and reliability-trials riders. The deep center makes room for the bead of one side of the tire while you're levering on the opposite over the rim's shoulder. A tire change can be made with only two tire tools, and that's terrific.

Both wheels are laced to conical hubs in new cross-three spoke patterns. The front hub appears to be the same as last year's, but the rear hub's spoke flanges are further apart. This added distance offers a steeper spoke angle from the flange to the wheel, increasing its strength. To add to the overall rigidity of the rear hub, the axle bearings have been spaced more widely than before. This change gives the bearings—and thus the wheel—a wider stand on the axle, and decreases the shock loadings on the bearings that result from side blows to the tire and wheel.

While the wheels and hubs impressed us, the CR's brakes did not. The rear brake lever is cut out of thin flat steel stock and the boot contact-patch is just a turned-up extension of the lever. The pedal offered little boot traction in the mud. When the pedal was located and pressure applied, the resulting rear braking action was not strong enough, we felt, for a race bike.

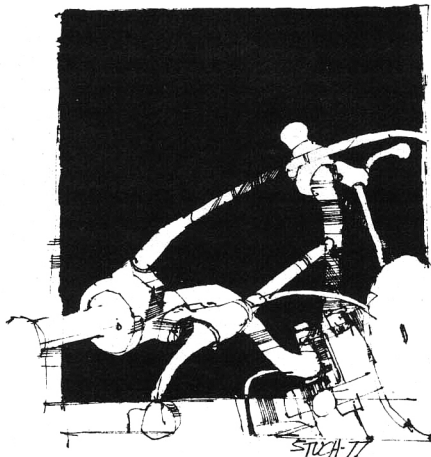
Because the 250CR is down on power in the mid-range, compared to front-rank Japanese bikes, the Husky is particularly vulnerable to being snapped up by a Honda or Yamaha on the exit of a turn. One way to compensate for this disadvantage is heavy braking *into* turns. We tried this technique, and more than once we found ourselves enmeshed in banners that mark the course. The front brake would have been adequate if matched up with a strong rear brake; it could not, however, make up for the ineffectiveness of the rear brake.

In an effort to improve the CR's rear brakes, the actuating lever has been increased five millimeters. While this extension provides greater leverage over the same component on older model CRs, the problem requires further attention still. Getting more leverage on a marginal brake just isn't the solution. Fitting a much better rear brake *is* the answer.

Husqvarnas, in general, use a race-proven design. While the 125CR may be an exception to this rule (it was burdened with propelling an oversized and overweight chassis), the 250 fits its frame nicely and has earned its spurs on tracks around the world. Heikki Mikkola won the 250 World Motocross Championship on a Husqvarna.

While more expensive and a bit heavier than leading Japanese machines, the 250CR does have an important place in the American motocross scene. Riders who don't care for the handling characteristics of a Japanese bike will appreciate the Husqvarna's qualities. It's durable and will, most assuredly, last a long time. And in the area of consumer satisfaction, Husqvarna leads again.

In 1978 Husqvarna won't be supplying its customers with high-fashion hardware having the most horsepower or the greatest suspension travel or most magnesium. What Husky does offer is an exceedingly competent motocrosser—most likely the best non-Japanese 250 available—and some genuine Swedish common sense about motocross racing. And that combination, despite its lack of glitz and glitter, may still be more than most riders use. ●



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