CYCLE ROAD TEST

HONDA CR-125M MOTOCROSS

There was an easy way for Honda to create a 125 motocrosser. They did it the hard way—and got a better bike.

• When Honda designed their 125 motocrosser, they could simply have slipped a smaller cylinder on the 250 Elsinore. A lot of other manufacturers have done just that sort of thing. The result would have been an overweight and clumsy 125 with too many compromises in the power characteristics and gearbox.

Not long ago the status activity in amateur dirt racing was scrambles: the bigger the engine class, the greater the status. It cost manufacturers just as much to build a first-rate 125cc scrambler as it did to put together a 360, but the customers wouldn't pay as much. So the 125 class was made up of competitors who either bought and extensively modified the lightweight super-cheapies or shelled out for the ready-to-race models which were often the above-mentioned 250s with little cylinders. It all worked very well, though, for all competitors were in different but equally leaky boats. The homemade racers blew up a lot and on rough tracks the heavy ones beat their riders senseless. The advantage shifted drastically from track to track.

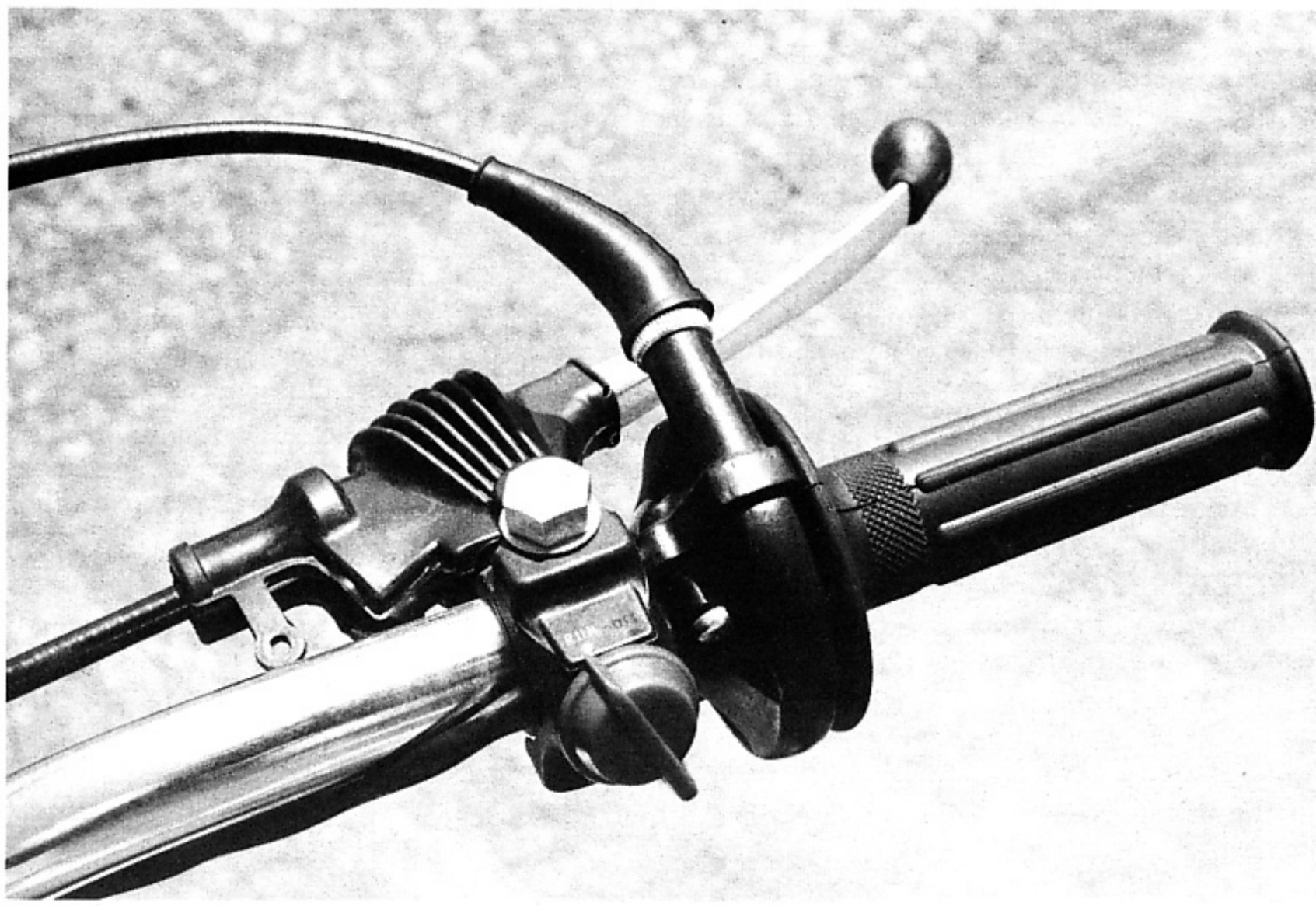
But now the big thing is motocross. Professionalism, with its money, has grafted greed to glamour and a motocross winner can live well on the fruit of this kind of labor. There is going to be a 125 class in the Motocross World Championships and motocross wins sell dirt bikes of all kinds. With such incentives, the 125cc motocrossers are going to become more highly specialized pieces of equipment. And the good ones are going to cost a lot of money.

Honda is out to win races with the new CR-125M. After years of enduring the rather flabby image projected by their truly excellent but grey-flannel-souled street bikes, Honda has really bitten the bullet in bringing out these new motocrossers.

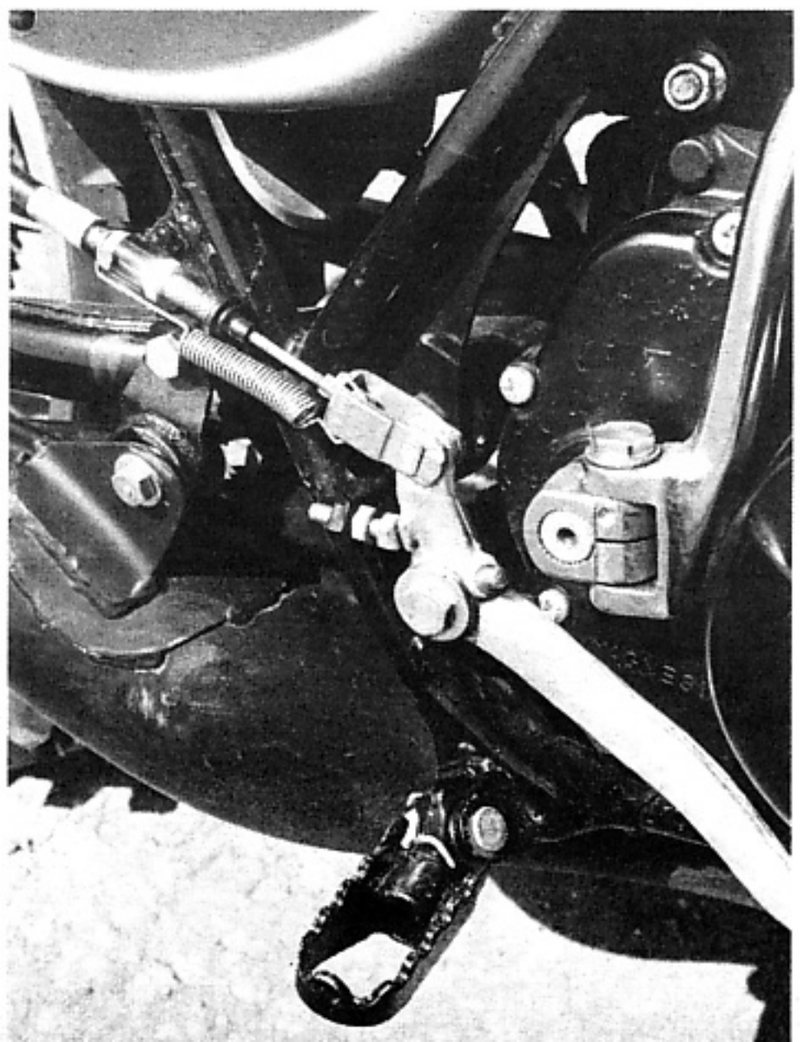
Like the 250 Elsinore, tested in the March issue, the 125 is a completely new bike. In no instance was a component used simply because it was available from some previous motorcycle.

PHOTOGRAPHY: BILL DELANEY

The plastic number plates and rear fender form sides of air cleaner box. Rubber bands hold on the plates.



The frame is a collection of chromium-molybdenum steel tubes welded together, using the Metallic-Inert Gas process. Many engineering specifications are used to describe the properties of materials. When the specs for chrome-moly and a good quality carbon steel are compared, it is demonstrated that they will both bend the same distance when subjected to the same stress, but the chrome-moly will bend a lot farther and spring back to its original position where the carbon steel will remain bent. When chrome-moly is properly heat treated, it becomes incredibly more resilient. The Honda CR frames are not heat treated, but if they were, they would be virtually unbendable



The hand levers are formed out of very malleable alloy. We elbowed the brake lever and bent it right back.

Peg carriers are welded to the chrome-moly frame. Heavy peg damage would require careful rewelding.

and unbreakable. Someone is going to make a lot of money by building a furnace jig to heat-treat these frames.

The frame backbone tube, which largely determines steering head rigidity, is 38mm in diameter and has 2mm thick walls. A 32mm diameter downtube is massively gusseted to the bottom of the steering head and backbone. Both engine and swingarm are mounted in a cradle comprised of a pair of 19mm diameter tubes. The frame is a black-enameled work of art, ironmongery-wise.

Bridgestone introduces their new Motocross-6 (3.50 x 18) knobby tire on the rear aluminum alloy D.I.D. self-cleaning rim. One-eighth-inch diameter spokes with heavier butted ends lace the rim to a light weight cushionless hub which has the same brake diameter as the Honda 90s, 100s, and 125s have had for years, but are slightly wider. A nylon-lined cable connects the hub lever to the forged aluminum alloy foot pedal.

A pair of Showa model 360 shock absorbers with 4.1 inches of travel control rear wheel movement. The shocks have cooling fins cast into their bodies, control rod diameter is 10mm, mounting eye centers are 14.25 inches apart, and two separate springs with different load rates ride on four position adjusting rings. The damping assemblies can be maintained through simple screw-type cylinder tops.

Hollow tubing is used to fashion the rear axle in the interest of lightness, and the axle head is keyed to the swingarm so that it won't turn when the nut is loosened. Threaded axle adjusters with locknuts push back against the axle to make sure the assembly is secure.

Small 1/2x5/15 chain transfers power to the sprockets. Lightweight chain seems to function perfectly on the 125. The stock rear sprocket has 49 teeth and is steel. A substitution for an aluminum sprocket will probably be the only modification the purchaser of a CR-125M will make.

Plastic fenders of one specific polymer or another have been around for a few years, but most of them are actually fairly brittle. The rear fender on the CR-125M is the first bike we've seen which has a genuine Super Fender type material as standard equipment. Preston Petty makes this type fender for replacing stock fenders on other bikes. You can bend them double and they won't break. The fender's six-inch width catches most of the mud before it gets on the rider's back.

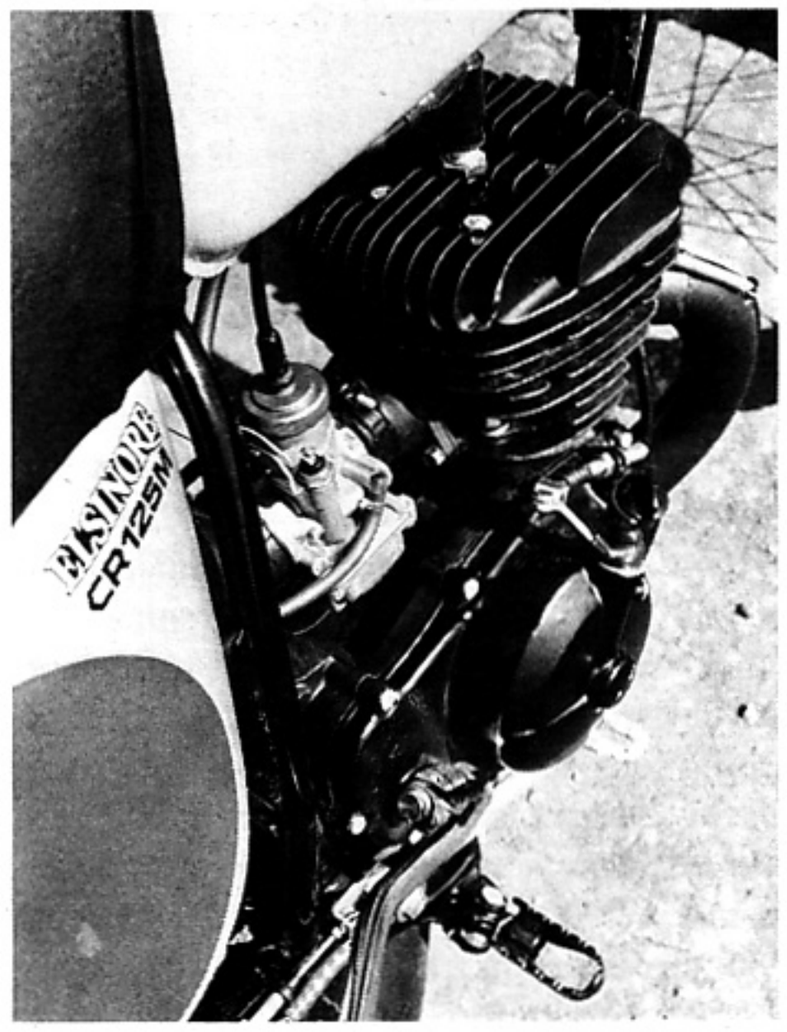
Four inches of rather stiff foam in the front of the seat tapers off to about two inches at the rear. The seat is extremely comfortable and its pebble-grain vinyl cover gives decent grip to leather pants in slicky old mud. The seat front is five inches wide so that it fits comfortably between the rider's legs and the seat/tank union is smooth.

Steel replaces the tough aluminum alloy used in the CR-250 tank, and the capacity is reduced by 0.2 gallons to 1.6 gallons. The tank is the same sleek shape, though there are no jagged edges anywhere to injure the rider on rough tracks. The filler cap is a smallish machined aluminum item which screws on well forward and offset to the right. The screw threads are quite coarse so that the cap tightens quickly and has little tendency to cross-thread. The filler hole diameter is $1^{3}/_{16}$-inch, if you remove the very sharp machining flash from the gasket surface. That means that the flexible spout on cheap gas cans has about $^{1}/_{8}$-inch clearance and the big flex spouts on the GI-type flat-sided cans will not fit. That's all just as well, though, for anyone would be out of his mind to fill the tank on a racing bike without using a wide-mouthed funnel with a fine screen for a filter. And the small cap prevents a lot of knee banging. The fuel valve is a very simple two-position device which is either all on or all off—none of that silly business of lining up the dots or figuring what *Zu* or *C* or *S* means in English when the race is about to start. Down is on and sideways is off. Removing three bolts with a 10mm wrench allows the tank to be removed in order to rinse it out or service the ignition components under the frame tube. Naturally, the tank is mounted in rubber shock absorbers to prevent vibration-induced leaks.

Completely new forks provide the front wheel with 7.1 inches of beautifully controlled travel. Stanchion-tube diameter is 4mm smaller than the 35mm O.D. ones used on the CR-250. And the hydraulic damping units are similar, but smaller Ceriani-types which use 160cc of Type A automatic transmission fluid in each leg. Top and bottom triple clamps are forged aluminum alloy, and the bottom one has double the clamping area of the top with two 8mm bolts at each side. The fork legs have relatively very little offset in front of the steering head: the necessary trail reduction being made by placing the wheel axle forward of the slider tube. This practice allows extra suspension travel without making the steering head too high. The fork rake is 30.5 degrees and the axle trail is set at 5.5 inches.

A Bridgestone Motocross-7 (2.75 x 21) knobby is mounted on a D.I.D. rim which has the same characteristics as the one on the rear. A single rim lock is used. The tiny hub and 12mm diameter axle complete the ultra light front end.

Chrome-moly is also used to form the handlebars. Serrations in the bars keep them



The CR-125M will dance over rough stuff; to really fly, you must use fully the six-speed gearbox because the 125 is only powerful within a narrow band.

from slipping in their mounts. The mounts are cast directly as one with the top triple clamp and this unfortunately places the bars directly over the tops of the fork tubes. Thus, the tubes cannot be raised in the triple clamp to change the steering geometry for fast courses with tight and flat turns. Forged very malleable aluminum alloy is used in the clutch and front brake controls. In a crash, we bent the brake lever down into a 90-degree kink and straightened it back with a box-end wrench. The bars never budged. An on/off safety switch is placed within easy reach of the throttle grip. The throttle grip itself is a special cast aluminum one which opens the slide completely in less than a quarter of a turn. The rider can completely control the throttle range within a normal amount of wrist movement.

The front fender is fashioned of the same super flexible plastic as the rear and has a wide rubber mud flap screwed to the front edge. A mud shield is available which fastens to the frame downtube to protect the cylinder fins on muddy courses.

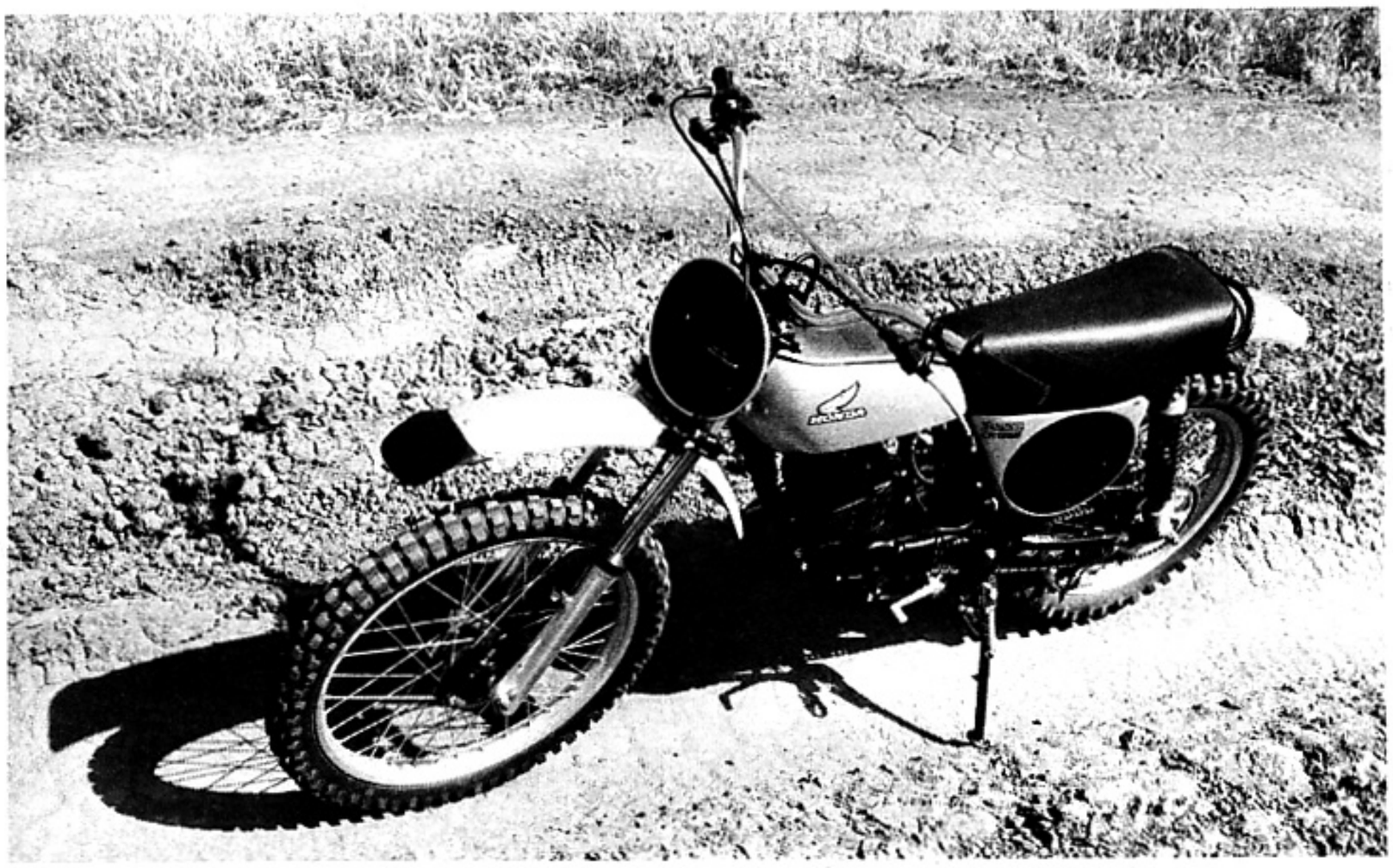
Full-folding spring-loaded footrests pivot back at the prescribed AMA angle and are of the open-bottomed variety so that they won't fill with mud. Unlike the pegs on the 250 Elsinore, the brackets on the 125 are welded directly to the frame. If a peg ever gets badly mangled, some welding and mending is going to be in order. Anyone having a chrome-moly frame welded should be sure that the welder knows that it's chrome-moly so he may select the correct type welding rod and then carefully stress-relieve the weld after it is finished. The pegs are placed relatively rearward so that it is very natural feeling to stand while crossing extremely rough sections.

For our first test session, we took the CR-125M to Muntz Motorcycle Park's motocross course. We try to take all our test bikes to a standard course, or stretch of road as the case may be, so that our perspective is as accurate as possible. Muntz's course had been changed this time, however. The long downhill plunge had been cut in half because too many novices were not successfully making the turn at the bottom. Despite the course alteration, we did get a good feel for the racer's nature and potential.

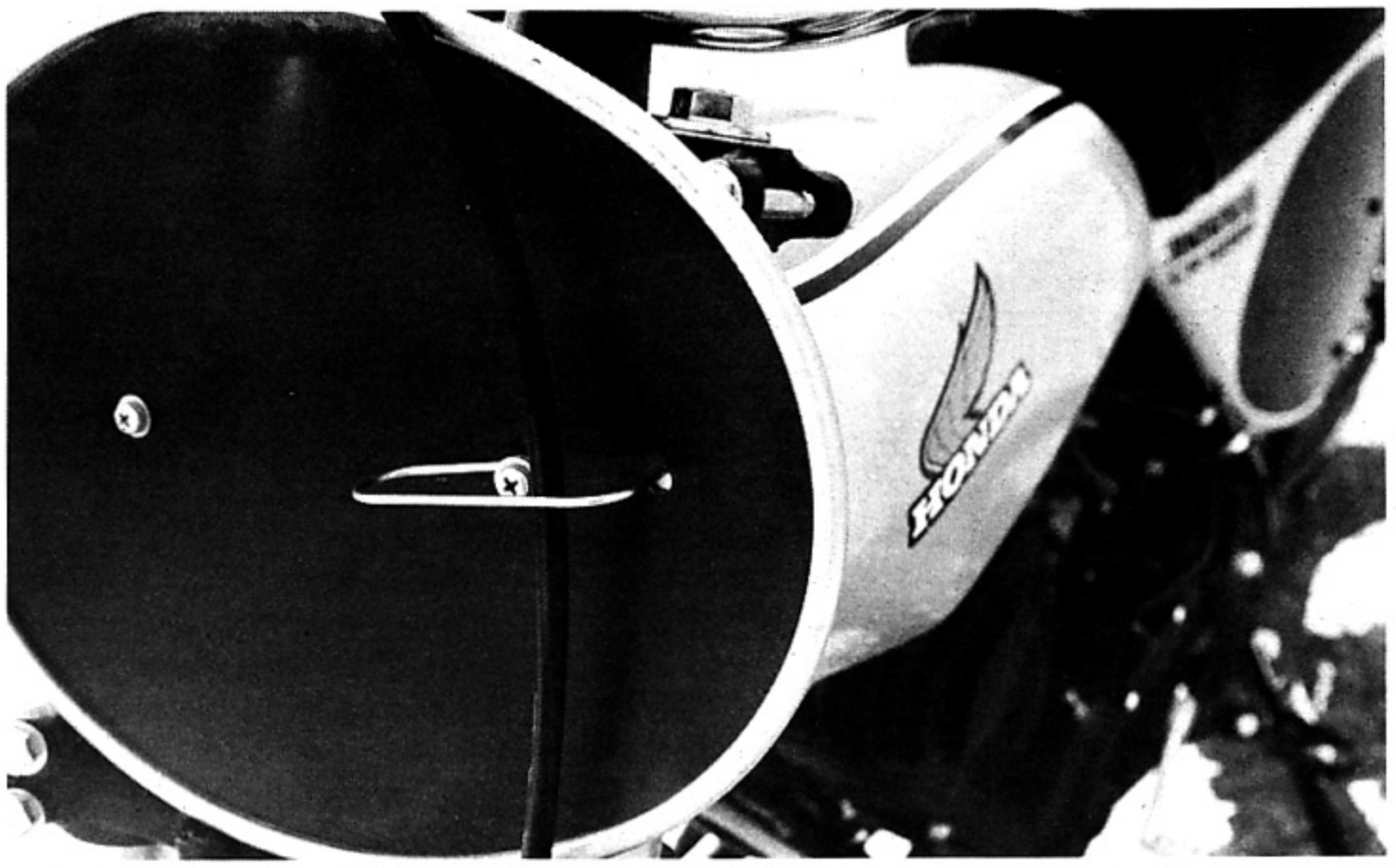
As with the 250 Elsinore, the 125 is easy to start. With the enriching device on the side of the carb pulled up, the second kick is all that's needed.

Clutch pull is extremely light and first gear is selected by pushing down on the left foot pedal. Clicking the throttle fully open and dumping the clutch produces a shower of clods out behind and you're under way in a great hurry. On level ground you must shift almost as fast as you can to keep the

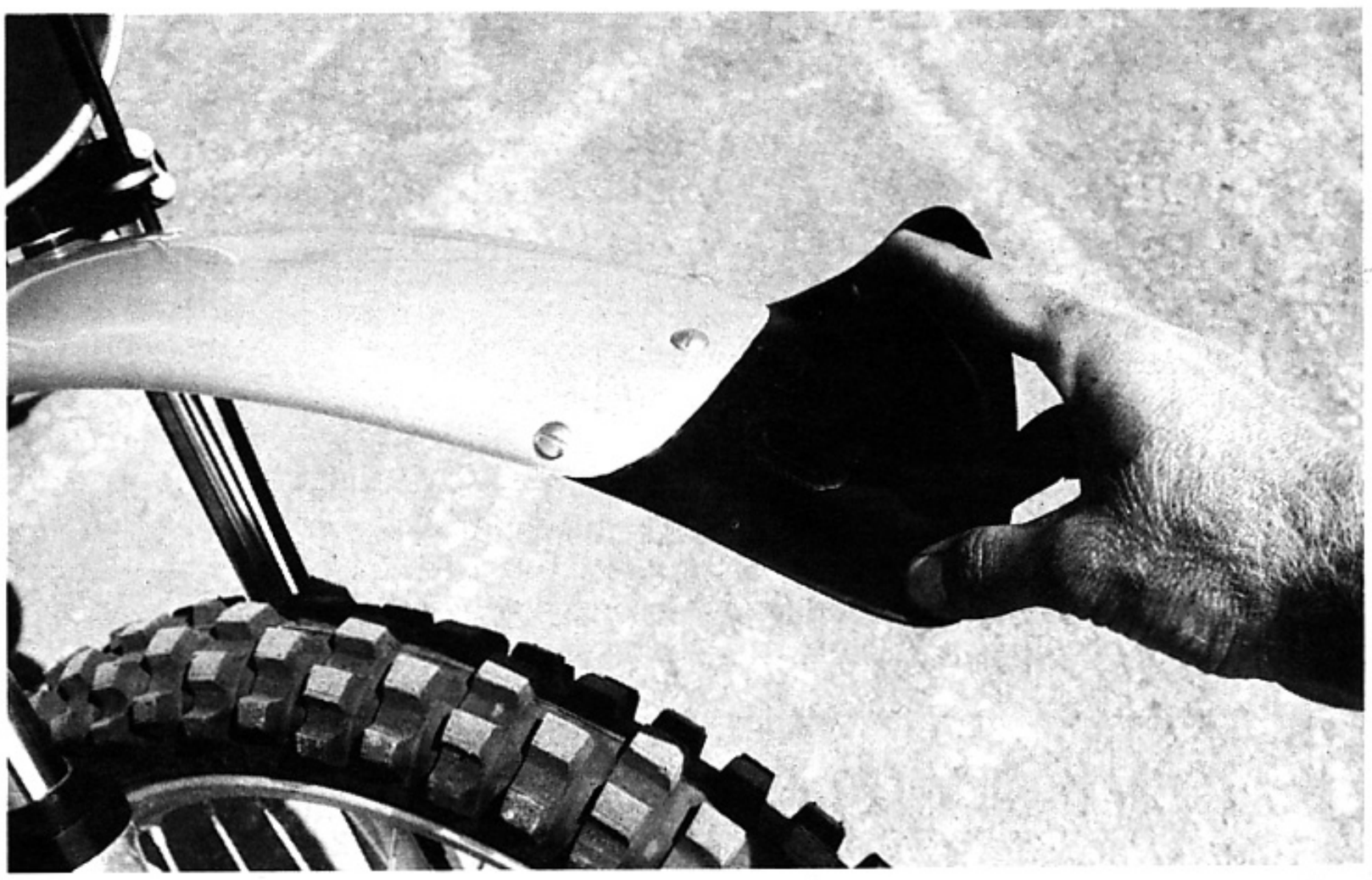
(Text cont'd. on p. 94; charts overleaf)



Honda has built a purposeful little racer which weighs 190 pounds and produces almost 17 hp.



The CR-125M is a complete racer, from number plates to cable stays to chrome-moly frame.



The CR-125 has Preston Petty type "Super Fenders" on the front and back; front carries wide rubber flap.

HONDA CR-125M MOTOCROSS

Price, suggested retail	West Coast, POE $740 (approx.)
Tire, front	2.75 in. x 21 in. Bridgestone
rear	3.50 in. x 18 in. Motocross Knobby
Brake, front	4.3125 in. x 1 in.
rear	4.3125 in. x 1 in.
Brake swept area	27.1 sq. in.
Specific brake loading	12.92 lb/sq. in., at test weight
Engine type	Piston port two-stroke single
Bore and stroke	2.204 in. x 1.968 in., 56mm x 50mm
Piston displacement	7.5 cu. in., 123cc
Compression ratio	7.6:1 Nominal
Carburetion	1; 28mm; Keihin
Air filtration	Dual-density oiled polyurethane foam
Ignition	Magnetically triggered CDI
Bhp @ rpm (actual)	16.93 @ 8,500 rpm
Mph/1000 rpm, top gear	6.58
Fuel capacity	1.6 gal.
Oil capacity	None
Lighting	None
Battery	None
Gear ratios, overall	(1) 27.87 (2) 21.05 (3) 16.99 (4) 14.24 (5) 12.52 (6) 11.50
Rake/Trail	30.5°/5.5 in.
Wheelbase	54 in.
Seat height	31 in., with rider, suspension set soft
Ground clearance	6.5 in., with rider, suspension set soft
Curb weight	190 lbs., with full tank of gas
Test weight	350 lbs., with rider
Instruments	None
Top speed	60 mph