



MONTESA COTA 348

Only for those who want the best... because, to them, price matters least.

MONTESA MAY HAVE goofed. Not in the end result of three years of continuous R&D work that yielded this magnificent new Cota 348 trialer, but in the fact that they took three years to perfect the machine to the point where they were impressed enough to put it into production. While all of this R&D was going on, Bultaco, their major competitor, had released and was selling a great number of 325 Sherpa Ts. The Bul was not perfect when it first came out, but at least it was better than any other trialer. Constant in-the-field development work kept improving each year's model. And, year by year, more and more Sherpas were sold.

Montesa had prototype 348 Cotas when one of our staffers visited the Barcelona, Spain, factory better than two years ago. At that time, the big-bore trials project had already been underway for more than a year. But they didn't want to release the machine until it was totally de-bugged. In order to produce the perfection their pride demanded, they passed up a lot of in-the-meantime sales. One thing that no one can say about the Cota 348 is that it's just a punched-out 250. The machine is all new, from the Malcolm Rathmell signature Pirelli tires to the special Akront trials bars.

The double-downtube frame is something new to Montesa too. All recent-

history machines from Permanyer S.A. have had single-downtubes. The frame envelops most of the engine and sweeps upward to meet the upper frame rails at the top shock mounts. As is common practice on off-road chassis these days, frame members should connect the swinging arm pivot area with the top backbone at a point just aft of the fuel tank. Montesa has not followed this tradition, opting instead for a pair of direct frame-to-engine steadying struts connecting the swinging arm pivot directly to the cylinder head. They claim that they can maintain sufficient trials rigidity with this setup, while at the same time alleviating more vibration than with a conventional arrangement. In addition to this, there is another steady that runs from the top of the

head up to the backbone frame member under the tank. Claims of both sturdy design and reduced vibration were borne out by our first ride.

Not only that, but the new design is worth a couple of pounds in weight saved. The box-section swinging arm looks a little spindly, but felt very rigid. Yet by the end of our test, the machine's wheels were decidedly cockeyed. Since we hadn't concerned ourselves with checking the wheel alignment at the start of our test, and we noticed no difference in handling, it must be presumed that this was a production error and not something that occurred during testing.

While the frame kept the Cota steady through the roughest sections, the suspension made the ride as smooth and>

In trials, narrowness counts for a lot. The Cota fills the bill. Flexible white plastic fenders are standard.



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pleasurable as could be expected. We found the forks to be perfectly sprung and dampened. The rear shocks had excellent damping, as well, but bottomed a little too readily—even for trials work—with a 180-lb. rider aboard. The factory confirms this problem and says it's working on developing a better spring and a shock absorber with slightly different characteristics to handle the stiffer spring.

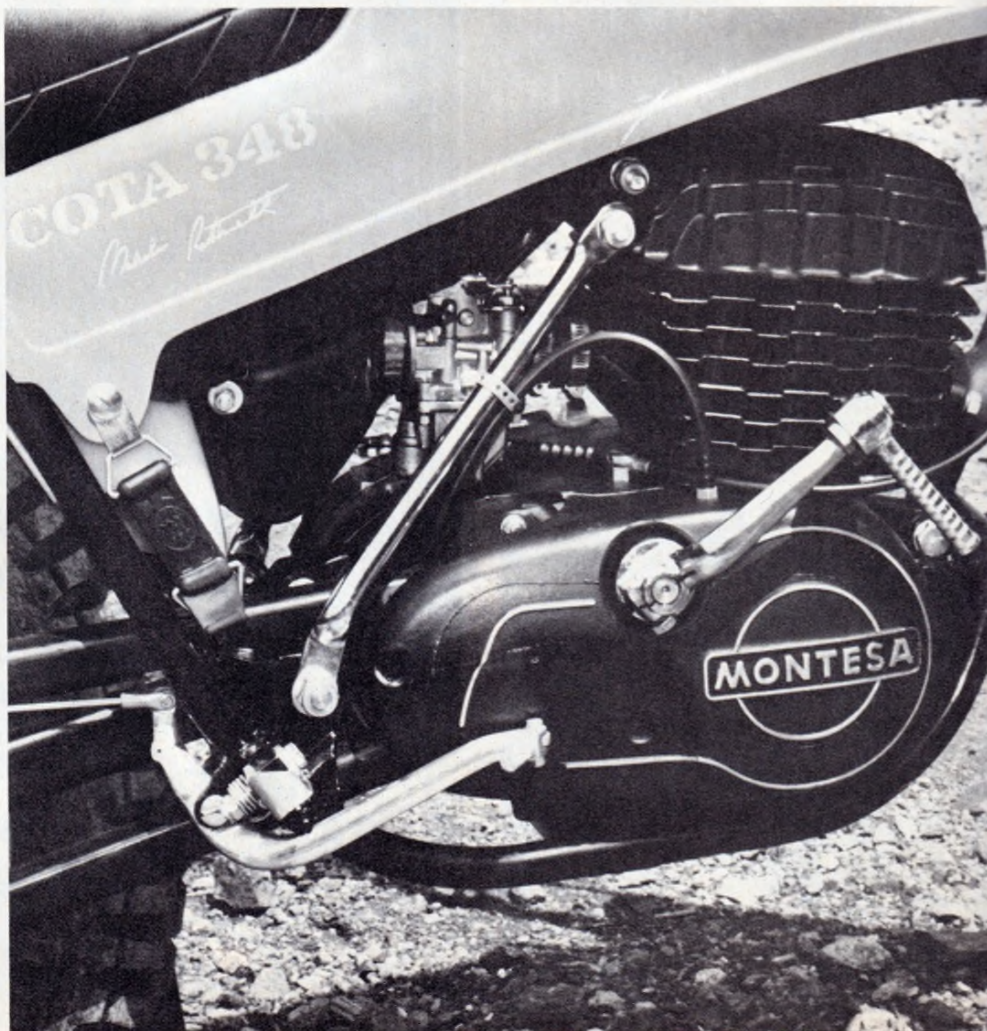
Montesa has gone to great lengths to make the Cota 348 light. And, at a weight of 197 lb. with half a tank of pre-mix, it comes in 10 lb. lighter than a Sherpa, and a full 40 lb. shy of a Honda TL250. Weight was trimmed at every possible point. The new head steadies were effected, as were the lower fork sliders. Virtually *all* sliders on *all* motorcycles are round. Montesa has trimmed the slider wall thickness down to an absolute minimum and then beefed up four areas along the length of each leg for strength. The resulting square sliders are *as* strong or stronger than before, yet have been reduced a pound. When taken alone that sounds insignificant, but when added to all of the other weight-saving features, the result is an overall weight that is deliciously low.

The engine is a performance marvel. It is more responsive, more versatile and more powerful than any other trials engine we've encountered. The only thing it doesn't lead the field in is smoothness and tractability. Bultaco's Sherpa out-smooths the Cota, while Honda's TL is the tractability champ. Response in any of the first three gears commands instant respect. A talented

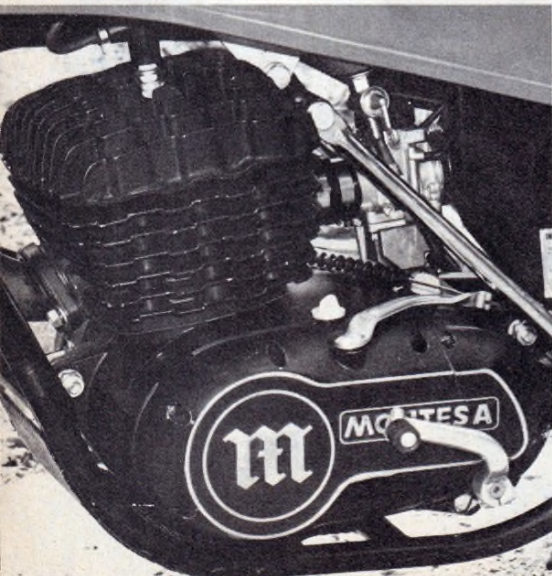
rider can make use of this performance, but a novice will find it more hindrance than help. We'd like to see slightly greater flywheel effect to slow down the response and add some more tractability for non-expert riders. Perhaps such a flywheel should be offered as a dealer-installed option.

Although this trialer is designated the Cota 348, only the very first prototypes actually displaced 348cc. That, it was found, was just too much for trials work. The engine displacement was slowly reduced until it reached 310cc. From there, the displacement decreased in very fine increments until the current 78mm bore and 64mm stroke were achieved, to yield a total displacement of 305.8cc. This, Montesa feels, should be the optimum size for a trialer, given such factors as available suspension technology, tire design and ultra-light weight. So, the displacement has

"Wrinkle Fin" cylinder is a product of Montesa's motocross development and aids cooling by creating additional turbulence. Chrome engine strut replaces traditional frame tube. Note how well the exhaust pipe is tucked in.



Amal carburetion helps the conventionally sparked engine to respond instantaneously to the rider's throttle commands. Engine detailing and styling are extraordinary.



COTA 348



Photography: Fernando Belair, Paul Webb

changed, but the name's stayed the same.

The power produced by the conventionally inducted two-stroke engine is delivered to the drive chain via a six-speed transmission. The six-speed was incorporated onto Malcolm Rathmell's works Montesa 348 for last year's Scottish Six Days Trial in order to give him greater top speed for highway running between sections. Rarely will a rider be able to get the Cota into sixth when running off-road, but if you need it, it's there. Fifth gear on the 348 is perfect for those low-rpm balance wheelies that trialers like to do when traveling from one section to another.

The Cota's drive chain is semi-enclosed. Eighty percent of it is encased in plastic tubes that run the full length of its upper and lower tracks. The plastic covers are injection-molded and internally shaped to the configuration of the chain so that it rides through on its rollers, thus reducing drag. The upper >

Disconnect the rubber straps and in a few seconds you can raise the tank/seat combination to get at the air filter.



and lower sections are interconnected by a plate that allows them to freely float with the movement of the chain. The plate itself floats on the bearing-like surface of one of the rear-wheel spacers. The purpose of the encasement is to prevent mud and sand from clogging up the chain.

Another nice feature of the new 348 is the rear sprocket size. Montesa has, through severe primary drive speed reduction, made possible the use of a diminutive 33-tooth final drive sprocket. The smaller sprocket is much less vulnerable to damage from rocks and much less likely to throw a chain. It also keeps the chain higher off the ground, making it more difficult for the elements to attack its partially exposed surface.

Aesthetically, the Cota is very pleasing. A redesigned one-piece red fiberglass tank/seat combination adorns the shiny black frame. Accents include white plastic fenders and polished aluminum. The fiberglass unit is held in place up front by a through-the-frame bolt, and in the rear by two rubber straps that snag their metal ends over frame-mounted hooks. Shut off the petcock, disconnect the rubber straps, and you can raise the entire assembly on its forward bolt for easy access to the air filter. The whole procedure takes about five seconds.

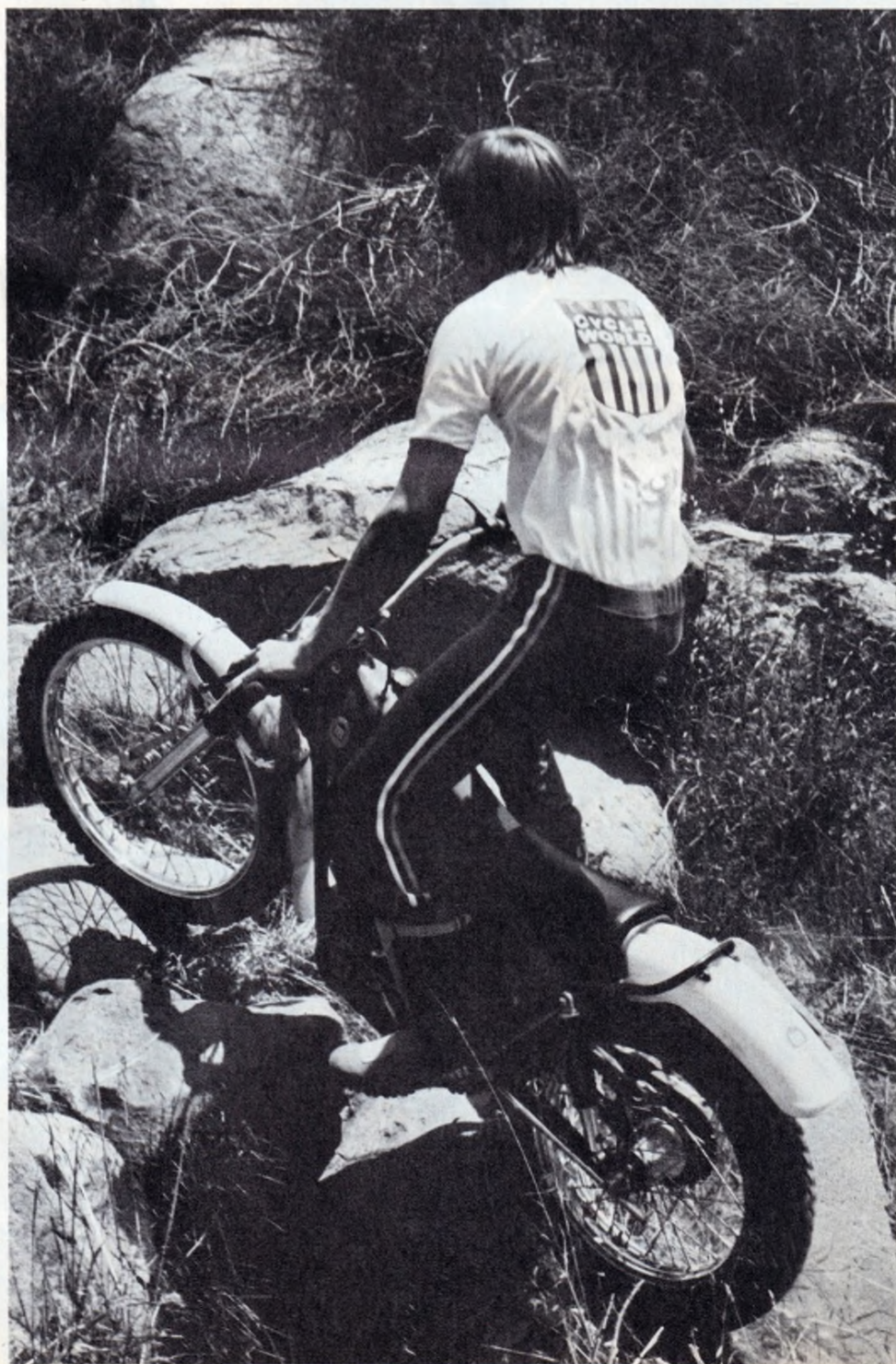
When astride the Cota it feels small, as though it were a motorcycle of only half its actual displacement. But the smallness and light weight make it respond like a bicycle, and that makes it easily the most maneuverable full-sized trialer around. The aluminum Akront handlebars feel just right. Since their 1-in. diameter steps down to the conventional 7/8-in. only just before the grips, they are very strong. The self-cleaning footpegs have serrated edges for excellent sole grip, and both shift and brake levers possess folding tips that prevent damage from rocks and roots.

Trials bike selection has always been largely a matter of preferences. All of

the Spanish machines and at least one Japanese bike can be categorized as near equals. They all have the right type of power, they are similar in weight, and they all handle well, though each machine possesses its own particular strengths and weaknesses in each category. A proper handling trials bike is therefore a matter of which characteristics you can live with, and which you can't live without.

Ossas and Yamahas turn tighter than

any other 250s because of steeper steering head angles and short (approximately 51-in.) wheelbases. Bultacos also have a steep steering head angle, but a longer wheelbase slows the handling down a bit. Still, the steep rake makes straight-line wheel deflection slightly more pronounced. Montesas have never been noted for being exceptionally good at turning tightly, but their straight-line stability is unparalleled. Not only has that latter feature



Spartan-looking seat is expected on a trials bike, but this one is well contoured and much more comfortable than most.

become even better on the new Cota, but the machine now turns with much less effort than ever before, thanks to extensive geometry testing that went on during the 348's development. The straight-line stability was aided by mildly cantilevered rear shock absorbers that yield just a little more than five inches of rear wheel travel. This is considered optimum for trials work,

Serrated folding footpegs and folding shift and brake levers are indicative of the detailing work that has gone into the new Cota.

where too much motion at the rear causes excessive rake change and inconsistent steering.

We found the Cota 348 to be an easy bike to ride when the rider is fresh, but not so easy near the end of an event when the body is tired and the mind's sharp edge of concentration has gone dull. The Montesa doesn't get tired, it runs as strong at the finish as it does at the start; you'd better be able to do the same or you'll pay the price. A Cota

MONTESA COTA 348

SPECIFICATIONS

List price	\$1598
Suspension, front	telescopic fork
Suspension, rear	swinging arm
Tire, front	3.00-21
Tire, rear	4.00-18
Engine type	piston-port, two-stroke Single
Bore x stroke, in., mm	3.071 x 2.520; 78 x 64
Piston displacement, cu. in., cc	18.51; 305.8
Compression ratio	9.0:1
Claimed bhp @ rpm	N.A.
Claimed torque @ rpm lb.-ft.	N.A.
Piston speed @ rpm ft./min.	2940 @ 7000
Carburetion	28mm Amal
Ignition	flywheel magneto
Oil system	in fuel
Oil capacity, pt.	1.0
Fuel capacity, U.S. gal.	1.3
Recommended fuel	premium
Starting system	kick, folding crank
Air filtration	oil-wetted foam

POWER TRANSMISSION


Clutch	wet, multi-plate
Primary drive	helical gear
Final drive	single-row chain
Gear ratios, overall:1	
6th	7.54
5th	11.14
4th	13.85
3rd	20.15
2nd	29.78
1st	37.02

DIMENSIONS

Wheelbase, in.	52.0
Seat height, in.	31.7
Seat width, in.	6.0
Handlebar width, in.	32.5
Footpeg height, in.	16.0
Ground clearance, in.	12.0
Front fork rake angle, degrees	N.A.
Trail, in.	N.A.
Curb weight (w/half-tank fuel), lb.	197
Weight bias, front/rear, percent	44.6/55.3

A swinging-arm chain oiler, first pioneered in trials by Montesa, is now considered unessential because of the semi-enclosed chain. Small sprocket is out of harm's way.

348 rider is going to have to be in top shape to take full advantage of what his dollars have placed between his flexing knees. Turns, ledges, rocks, mud, off-cambers; you name it, the Cota can do it all. It can glide through a section like a stroll in the park, or, if the rider isn't in shape to dominate the machine and the situation, it can fight and buck like a stubborn horse demanding its head.

Montesa may have made a mistake by working so feverishly to make the Cota 348 the fabulous machine it is without reaping a single dollar on it to aid in the effort. Now, in order to recoup its financial investment, Montesa's going to ask \$1598 for a new 348. But for the rider who knows he can handle the best, or for the rider who wants to *learn* to handle the best, this is it and the price be damned. 

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