

HANG TEN GP: PLAY IT AGAIN, GERRIT

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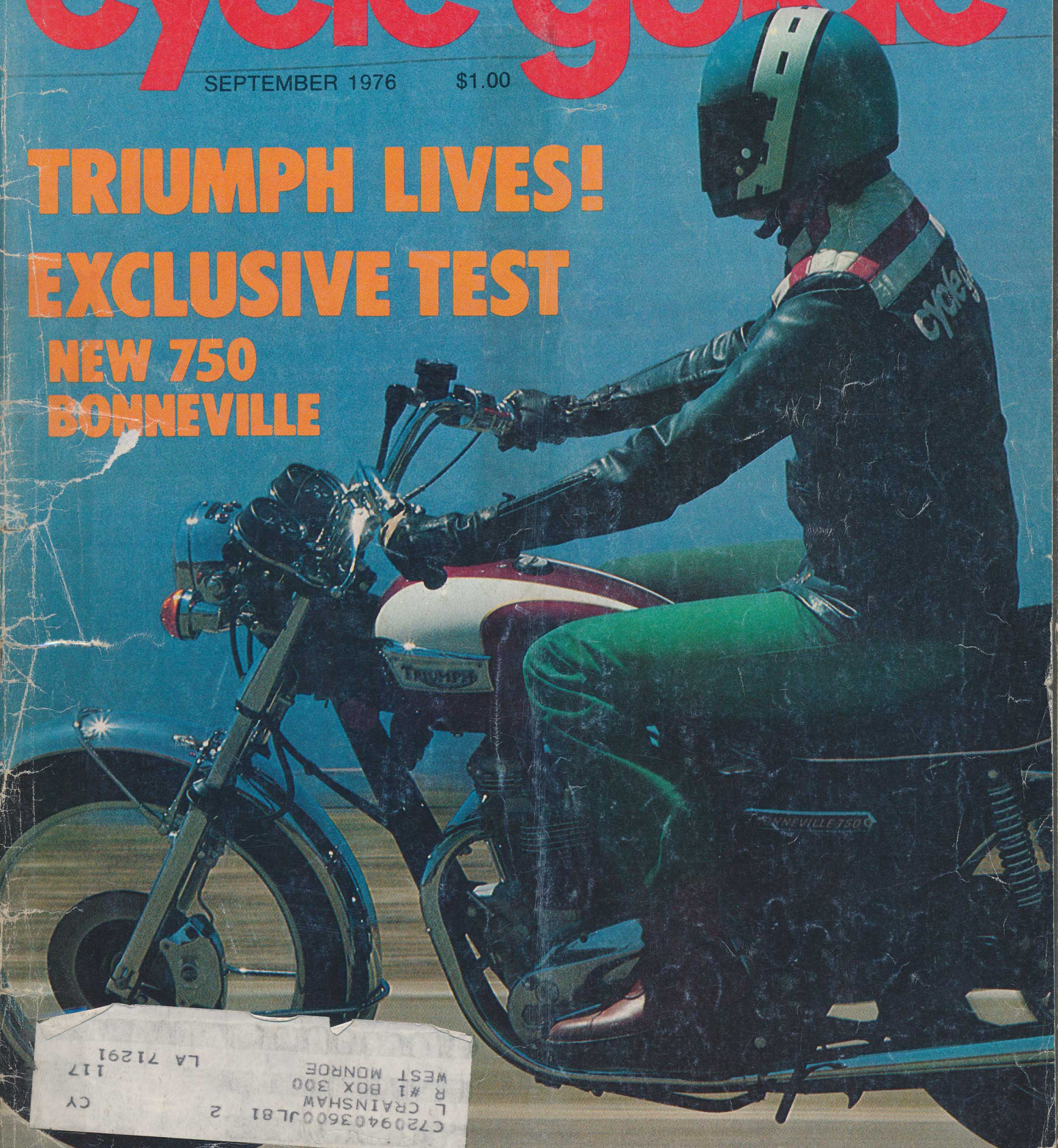
cycle guide

SEPTEMBER 1976 \$1.00

TRIUMPH LIVES!

EXCLUSIVE TEST

NEW 750 BONNEVILLE



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ASTONISHING MONTESA 250 VA MX

cycle guide

VOL. 10 NO. 9 SEPTEMBER 1976

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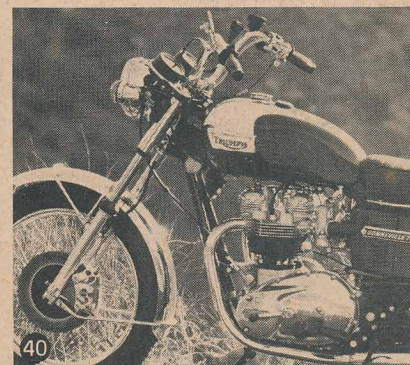
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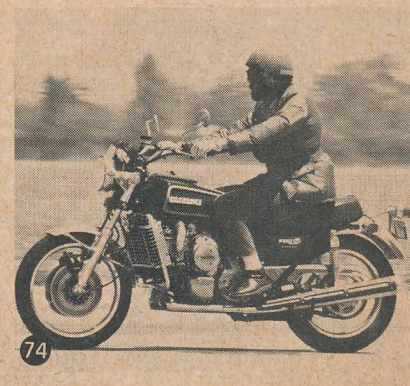
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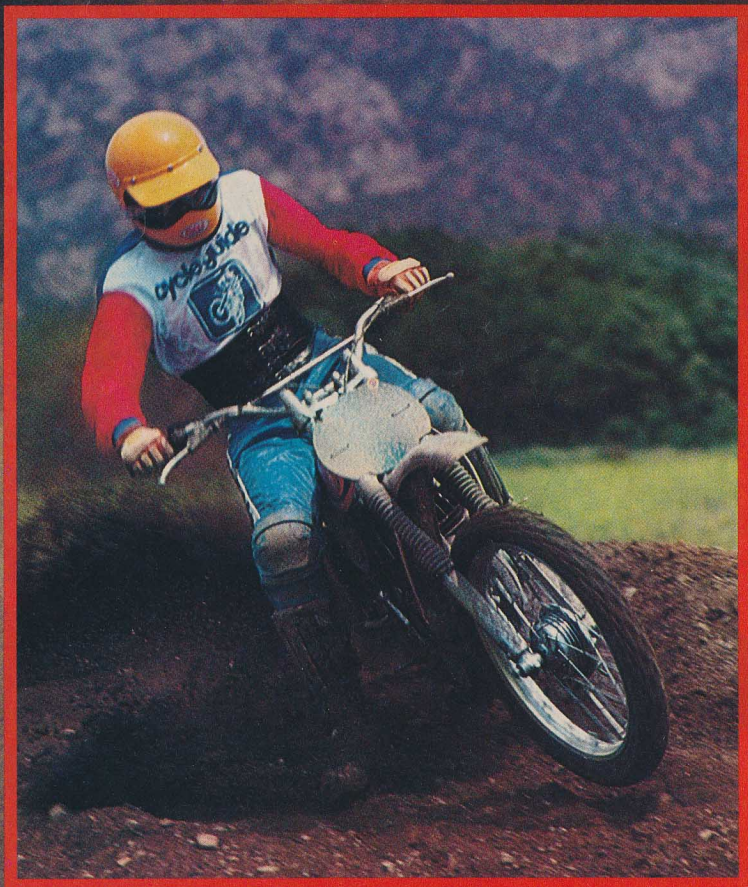


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MONTESA CAPPRA



250 VA



Whatever else they may be guilty of, the Spanish do not build bland motorcycles

The first time one of our testers grabbed a double handful of the VA's super-quick Amal throttle, he got quite a surprise. The bike cut loose with such a resounding burst of power that the rider almost thought he had been rear-ended by a speeding Trailways bus. The new Montesa is precisely that capable of knocking your socks off when you dial it wide open. It makes good horsepower down low, up high, and everywhere in between.

We weren't ready for it. With the all-out technological motocross war being waged right now, you just don't expect a years-old piston-port engine built by a small Spanish company to perform better than most of the tricked-out engines belonging to the big-buck boys. Nowadays, bikes that make impressive horsepower numbers while maintaining ultra-wide powerbands usually do so because of fluttering reeds or spinning discs the designers stuffed between the carburetor and the piston. The Montesa 250 Cappa VA, though, does it without gadgetry. It's the same basic engine the company has been building for a number of years.

Perhaps our mistake was in assessing Montesa as a "small" company. In this country it *is* rather small—its unit sales trail those of the leading Spanish brand, Bultaco, by a wide margin and are only more-or-less equal to those of OSSA, the third Spanish motorcycle maker. But Montesa—or Permanyer, S.A., as the factory is called—is actually a bigger company than the other two on a world-wide basis. The difference is that Montesa only diverts about ten percent of its total unit production to the U.S. marketplace, whereas the other two firms send much higher percentages of their total production over here—sometimes in excess of 50 percent.

Knowing these facts and recognizing Montesa's conservative-but-steady participation in world championship motocross, it soon becomes easy to understand how and why the VA's engine goes like hell.

THE BIKE: The Montesa Cappa 250 VA has been essentially the same motorcycle for the past four seasons. It was introduced in 1973 as the Vehkonen Replica (VR), renamed the V-75 in 1975 after Vehkonen stopped riding for Montesa, and is now called the VA. Improvements, mainly in terms of suspension travel, steering geometry and engine power, were

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made in the bike along the way to keep pace with new developments in the motocross field.

The VA has its same 70mm by 64mm bore and stroke, but some slightly re-vamped porting provides the wide power-band and impressive top-end power. A 34mm Bing carb is rubber-mounted on the VA's single piston-port intake, and three transfer ports (one on each side and a large scavenge port at the rear of the cylinder) shuttle the mixture from the crankcase to the top end. A large unbridged exhaust port dumps the post-combustion gases into a smoothly-stamped expansion chamber that sweeps under the engine and along the left side of the bike.

The two-ring piston now has a higher silicon content for better wear, greater strength and a lower coefficient of expansion. The combustion chamber was given a new squish band shape to remedy some overheating problems caused by the increasingly poor quality of the gasoline being sold these days.

Both the head and cylinder retain Montesa's unique stepped finning which exposes more fin surface area to the cooling airstream. The fins are, however, free-standing, with no metal or rubber sound deadeners between them.

The VA's built-up, full-circle crank runs in three main ball bearings—one on the left and two on the right—for greater crankshaft rigidity. The right end of the crank turns the Motoplat CDI's external flywheel, and the left end powers a big multi-plate clutch through a set of straight-cut gears.

A ratchet-pawl selector mechanism works the VA's drum-shifted, five-speed gearbox at the request of the left-foot shift lever. Unlike most contemporary transmissions, the Montesa's crunch-box does not utilize sliding gears with mating engaging dogs, but instead has stationary gears that are engaged by sliding dog wheels. This design requires a few extra parts, but the sliding dog wheels are lighter than sliding gears would be and therefore theoretically require the rider to move less mass every time he shifts gears.

The VA's chromoly single-downtube frame and chassis are about the same as on the '75 model, but with more suspension travel and quicker steering. Previous V-series motocrossers drew complaints from some riders because of their tendency to plow the front wheel on smooth, slow corners. The factory shortened the front wheel trail for '76, hopefully eliminating the skating problem.

The Montesa-built, rubber-gaitered front fork now offers 8.7 inches of travel, and features super-long fork tubes and squarish slider legs. The sliders look round to the eye, but if you grab them with your hand you can feel four rounded corners and slightly curved sides. The sliders were given their new shape for more strength, and the fork tubes were made extra long to allow adjustment of the front wheel trail



by moving them up or down in the triple clamps. The long tubes also permit the use of very long fork springs.

Betor gas shocks at the rear assume a laid-down mounting position to provide 6.7 inches of rear wheel travel. The bike is normally delivered with 160-pound springs on the Betors, but since there are no National Football League linemen on our testing staff, the set-up people at Montesa replaced them with more reasonable coils—94/138-pound, two-rate springs—before we picked up the bike.

Pirelli knobbies and Akront rims lace to beautifully-polished alloy hubs at both ends. The front wheel still uses Montesa's unusual spoking arrangement, wherein the right-hand spokes hook directly into the right side of the full-width hub instead of spoke flanges. The rear hub is a wide, healthy-looking conical unit that carries the brake drum and $\frac{3}{8}$ -inch-pitch rear sprocket on the same side.

The VA has the same attractive, weiner-shaped 1.7-gallon red fiberglass gas tank Montesas have sported since '74. A quick-and-easy push-in plastic gas cap is different and dual rubber petcocks are even more novel. Each petcock contains an internal steel ball valve that you shuttle back and forth by squeezing the outer rubber casing with your fingers. White

flexible nylon fenders handle the mudguard chores, and a plastic airbox lurks beneath the seat.

The 250 has gained a few pounds since '74, scaling in at 222. It's about two inches longer, too, with an average wheelbase of 57.5 inches. And in keeping with the times, the VA now goes for about \$1640.



ENGINE AND GEARBOX: The 250 VA's long, spirited powerband was the first thing to impress us, and the one thing that stuck in our minds the longest. The motorcycle unquestionably ranks among the two or three fastest 250 berm-killers we've ever tested.

The VA's sheer peak horsepower alone hustles the bike down a straightaway at a competitive clip, but the extreme width of the usable power range and the very tractable manner with which the rear tire hooks up to the ground make the bike extremely fast everywhere—like coming out of a turn or up steep hills.

The really fat part of the powerband is nearly 3500 rpm wide—from just above 5500 to just below 9000. And better yet, the engine pulls *almost* as strongly when it's below the powerband. As a result, there's a gradual transition into the powerband that never catches you by surprise.

As an example of the wide power range, we found that on most courses our testers needed to practice for quite some time before they could be sure which of two gears was best for some corners. The carburetion was so clean and the response so crisp that the bike accelerated through and out of many turns with near-equal enthusiasm in either of two gears.

For use on most local motocross tracks—which tend to be small—the VA is geared on the tall side. First gear gets you off and away quickly if you're careful, and you'll have to be motoring near 50 mph before you'll get any benefit out of using fifth. A lot of pro tracks and expert riders may need the standard setup, but most average rider/track conditions will justify lower overall gearing.

Even with the tall ratios, the VA has plenty of powerband overlap as you shift up through the gears. The ratios are matched excellently to the engine, and a slight reduction in final gearing wouldn't be detrimental to that engine/gearbox matchup. In fact, on some extremely tight circuits—especially ones that feature sharp uphill turns—lower gearing would be an asset, for a rider would stand a better chance of finding a "perfect" gear for each of those turns.

With one frequent exception, the VA shifted easily, positively and consistently, with or without the clutch. The problem we encountered was always with the second-to-third or third-to-fourth upshift. When we shifted with enthusiasm—and it's hard to be *unenthusiastic* when riding a fast motocross bike—the shift drum overran the desired gear and ended up in a false neutral between gears. This was more than just an annoyance, because it sometimes happened just before a lipped jump or while in a fast sweeping turn. Suddenly losing all means of propulsion in those situations caused the sort of adrenaline rushes we can do without.

The clutch on our test bike functioned nicely, although we seldom used it for anything other than starting from a dead

stop. It never acted quick or grabby, and required only a pleasant light pull at the lever.

HANDLING: The 250 VA has a lot of handling pluses: Good steering geometry; excellent front suspension; mediocre-but-acceptable rear suspension; a rigid frame; and a wheelbase that's neither too long nor too short.

There is, however, one noteworthy flaw in the chassis, and that is its center of gravity. If you look at the VA from the side and compare it to most other full-sized motocrossers, you'll immediately notice how high the engine is carried in the frame and how radically the swingarm angles downward.

We could be wrong, but it *looks* like the factory retained the original 1973 VR short-travel frame configuration and merely gave it more and more travel as the bike evolved into the '76 version. Even with the low pipe, the Montesa has considerably more ground clearance than suspension travel, which means it has a little more clearance than it needs. As further proof of our conviction, the crankshaft height of the VA's engine measures two to four inches more than normal for a 250 or open-class MX bike.

The resultant high center of gravity can be sensed in several ways, the most dramatic of which is felt when you try to use one of those long, sweeping berms on the outside of a corner. The VA is only marginally reluctant to tilt into the turn as you approach; but as soon as you hit the actual berm you feel like a huge magnet on the outside of the corner is trying to high-side you. It requires a constant effort to keep

the bike laid over at the desired angle as you scoot around the berm.

You can also detect the high center of gravity working against you when you momentarily punch a berm to change direction or when you try to slide gracefully. Anytime the wheels have an opportunity to bite into something when you're turning hard, the motorcycle will let you know that it wants to sit up straight.

Aside from this high-engine syndrome, the VA handles quite respectably—in fact, better than it *should*, considering how the chassis layout violates a few of the so-called "rules." The steering is much more precise than on previous models, although we could still provoke some front-wheel skating on slick surfaces. We suspect that the Pirelli front tire is the culprit more than the geometry, however. Otherwise, the Montesa obeys the commands of the front wheel predictably and consistently.

The front suspension makes a valuable contribution to the VA's handling. The front fork is cushy during the first few inches of its 8.7-inch stroke, and allows the front wheel to follow the contour of a track with little resistance. Bigger bumps are no problem either, as the entire amount of travel is very usable during normal motocross riding.

The rear suspension isn't as efficient as the front, in either its springing or damping. When our larger (160 to 180 pounds) testers set the 94/138-pound springs on their softest preload, the rear wheel behaved reasonably well over the choppy little bumps but bottomed too easily. Jacking the adjusters up helped the bottoming situation somewhat, but the rear wheel





then lost much of its ability to respond properly on the small abrupt bumps. Lighter riders found the soft preload setting was usually enough to prevent bottoming, but that the rear end skittered around a bit on the choppy stuff.

The problem here may be one of a poor springing/damping balance. Since the shocks were originally equipped with 160-pound springs, the damping rates are undoubtedly calibrated to work best with those springs. With the 94/138-pound coils—which are much closer to being ideal than are the 160-pounders—the damping feels too stiff. A well-chosen set of springs and shocks are needed to get the rear of the VA working up to current standards.

Whatever its handling shortcomings, the Montesa is stable on rough ground. It bounces off whoop-dee-doo in fine fashion as long as you keep the power on, and doesn't try to swap ends when you're really cooking on a cobby straightaway. Even crossed-up jump landings won't confuse the VA's chassis, provided you keep the power flowing as you hit the ground.

COMFORT AND RIDE: The VA's seat is fairly low, considering the length of the suspension travel, but the lowness is at the expense of some comfort. There is almost no padding at all toward the rear, where the entire underside of the seat has been excavated for the fender. The padding in the rest of the saddle is relatively thin and quite firm. Thankfully, the suspension systems do a respectable job of isolating the rider from jolts on rough terrain. If they didn't, the seat would bash the rider's rear severely. As it is, the seat makes your butt tired and sore.

The Montesa's footpeg/seat relationship is a tad short for tall riders. The vertical distance from the seat to the handlebars is also greater than normal. How-

ever, the footpeg/handlebar relationship is right in the ball park, indicating that either the seat needs to be higher (which would not be the best solution) or the pegs and bars need to be a little lower (which would). If you're short, you may like the VA the way it is, or with a change to lower handlebars.

The Montesa doesn't come off as a particularly unpleasant bike to ride, even though the seat is quite literally a pain in the ass. The steering geometry provides enough trail so you don't have to grip the bars tenaciously, and the bike seldom—if ever—attempts to throw you off. The vibration factor is about average for a bike of this type, and the exhaust note, at 103 decibels, won't scramble your brain. In fact, the usual Montesa engine noises are probably more disconcerting than the exhaust roar.

Several long-legged testers complained about the location of the kickstarter during their first ride on the VA. When they'd slide forward during hard cornering, their right leg—just below the knee—would bang against the kick lever. We cured the problem by repositioning the lever one spline clockwise.

BRAKING: The VA's front brake is powerful and able to lock the front wheel any time, but progressive and predictable enough to keep you from skidding the wheel at an inopportune moment. Lap after lap, the front brake consistently delivered only as much stopping power as we wanted.

Not the rear brake, though. When the bike is new, it has a hair trigger ready to lock the 4.50 x 18 Pirelli at the slightest provocation. If you survive the Montesa's rear-wheel lockups long enough, the brakes wear and become somewhat less feisty. But even then, they're too powerful

for the job at hand.

Since the VA's rear brake is operated by a pedal pulling on an unsheathed wire cable, we couldn't do the standard cure for this condition, which is to put a bend in the rear brake rod. So we beveled the leading edges of the rear brake shoes, which calmed the brakes down a bit.

Several riders complained about the lack of a height adjuster on the rear brake pedal, which sits considerably higher than the right footpeg. As it is, you must lift your right foot several inches to use the brake.

RELIABILITY DURING TEST: For the first time in a long time, we tested a motocrosser for a month and didn't destroy one of the wheels. After a few routine spoke-tightening sessions during the initial two days of riding, the front spokes stayed tight and the rim stayed round. And a once-over on the rear spokes during the second day was all the maintenance the rear wheel required.

The VA was not without its troubles, though. First of all, the fiberglass gas tank sprung a leak on the first day, and our attempts to patch it turned out to be very temporary. The crack started seeping again later in the test, and was a full-fledged leak by the time we returned the bike.

Stuffing the VA into a deep, soft right-hand berm caused the rear chain guide to bend. The chain guide is long because the rear sprocket is large, so it would dig in and bend when we laid the bike way over in deep sand.

The shift lever would also jam into the ground when the bike was pitched way over into a left-hand berm. We never bent the lever or broke the gearbox because of this, but we weren't sure what gear we were in when exiting the turn. The gearbox


would upshift one gear about half the time, and end up in a false neutral the rest of the time.

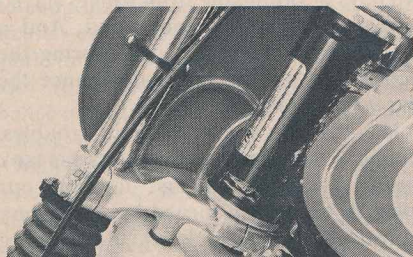
Because of the design of the left engine case, we couldn't raise the shift lever to fix this problem. There's a protrusion on the case which houses the clutch throw-out mechanism, and raising the lever would have caused it to hit this protrusion before the next gear was engaged.

The VA has no unusual maintenance problems in store for its owner. All the routine service items are conventionally laid out, and the major rebuild areas don't require any special knowledge or tools. Parts for most European bikes are more expensive than parts for Japanese bikes, but that's a fact of life it seems we have to live with.

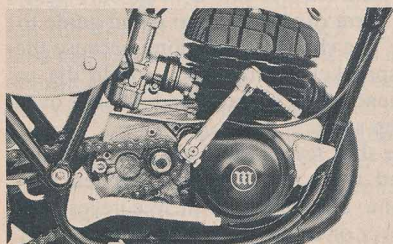
CONCLUSION: From a performance standpoint, the Montesa 250 VA is outstanding—not just because of the amount of power it generates, but because of the efficient way it delivers that power. The bike is not as impressive handling-wise, but it gets the job done nonetheless. Most of the critical areas of the machine are proficient enough to overshadow those things which are less than ideal.

The VA is expensive, but not priced out of reach. And there are several other 250s that are better all-around motocrossers. However, it has the type of power many people pay lots of money to unsuccessfully obtain from after-market accessory vendors. And that's a worthy asset. Because given the choice between a motorcycle that performs adequately and handles exceptionally, and one that performs exceptionally and handles adequately, you *know* most people would choose the latter.

The Montesa fits that last category perfectly. You can learn to live with the high center of gravity, and can justify the purchase of better shocks and tires just to know that when you want it, enough of the right kind of power is at your fingertips. 



These tricky little hoses are vent tubes which allow the rubber accordion fork gaiters to "breathe."



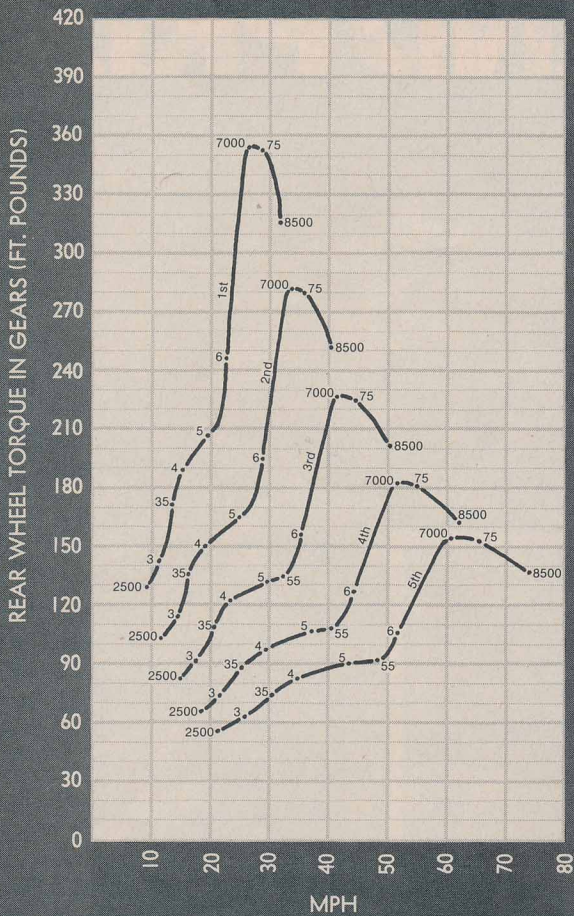
Power. The VA makes great gobs of it without sacrificing a lick of tractability.



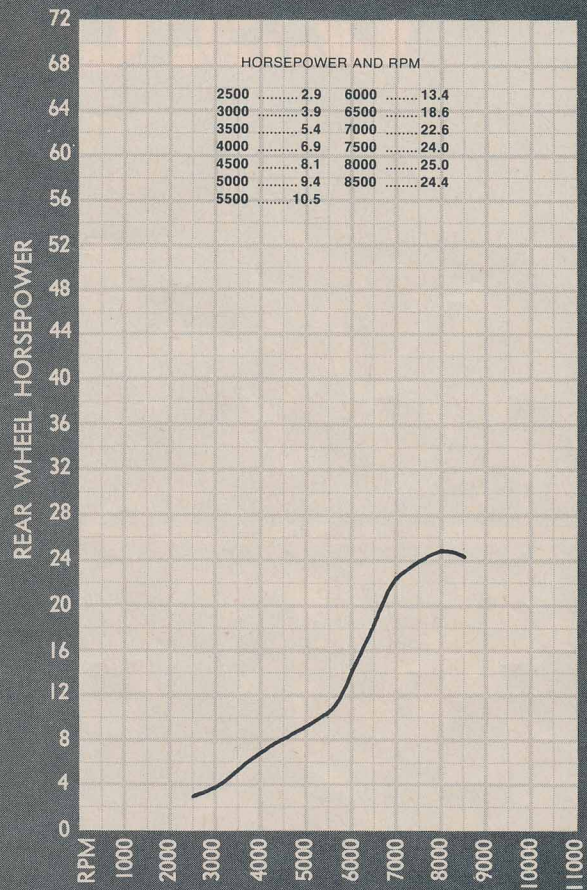
SPECIFICATIONS

Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one piston-controlled intake, three transfers, one exhaust
Bore and stroke	70mm x 64mm
Displacement	246.3cc
Compression ratio (uncorrected)	12:1
Ignition	Motoplaf flywheel magneto CDI
Charging system	none
Carburetion	one 34mm Bing slide/needle
Air filter	washable oiled foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 2.23:1 ratio
Clutch	wet, 7 drive plates, 8 driven plates
Starting system	kick, in neutral only
Transmission	5-speed, left-foot shift
Overall drive ratios	(1) 20.95; (2) 16.64; (3) 13.35; (4) 10.75; (5) 9.08
Transmission sprocket	11-tooth
Rear wheel sprocket	56-tooth
Drive chain	5/8-in. pitch, 1/4-in. width (#520)
Front fork	8.7 in. (221mm) travel
Rear shocks	Betor 5-way adjustable, 6.7 in. (170mm) rear wheel travel
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	3.00 x 21 Pirelli knobby
Rear tire	4.50 x 18 Pirelli knobby
Frame	Tubular chromoly steel, single front downtube
Steering head angle	30.5 degrees from vertical
Front wheel trail	5.28 in. (134mm)
Wheelbase	57 to 58 in. (145 to 147cm)
Length	85 in. (215cm)
Weight	220 lbs. (99.8kg)
Weight distribution	44% front, 56% rear
Ground clearance	10.7 in. (272mm), at expansion chamber
Seat height	34 in. (864mm), unladen
Handlebar width	34 in. (864mm)
Handlebar grip height	44.4 in. (113cm)
Footpeg height	13.9 in. (353mm)
Instrumentation	none
Gas tank	fiberglass, 1.7 gal. (6.4L)
Sound level per SAE XJ 331a	103 db(A)
Suggested retail price	\$1640, East and West Coasts

Montesa Cappra 250 VA



This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.



This graph shows the amount of horsepower delivered to the ground as measured by a Patraco MK111 rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.

