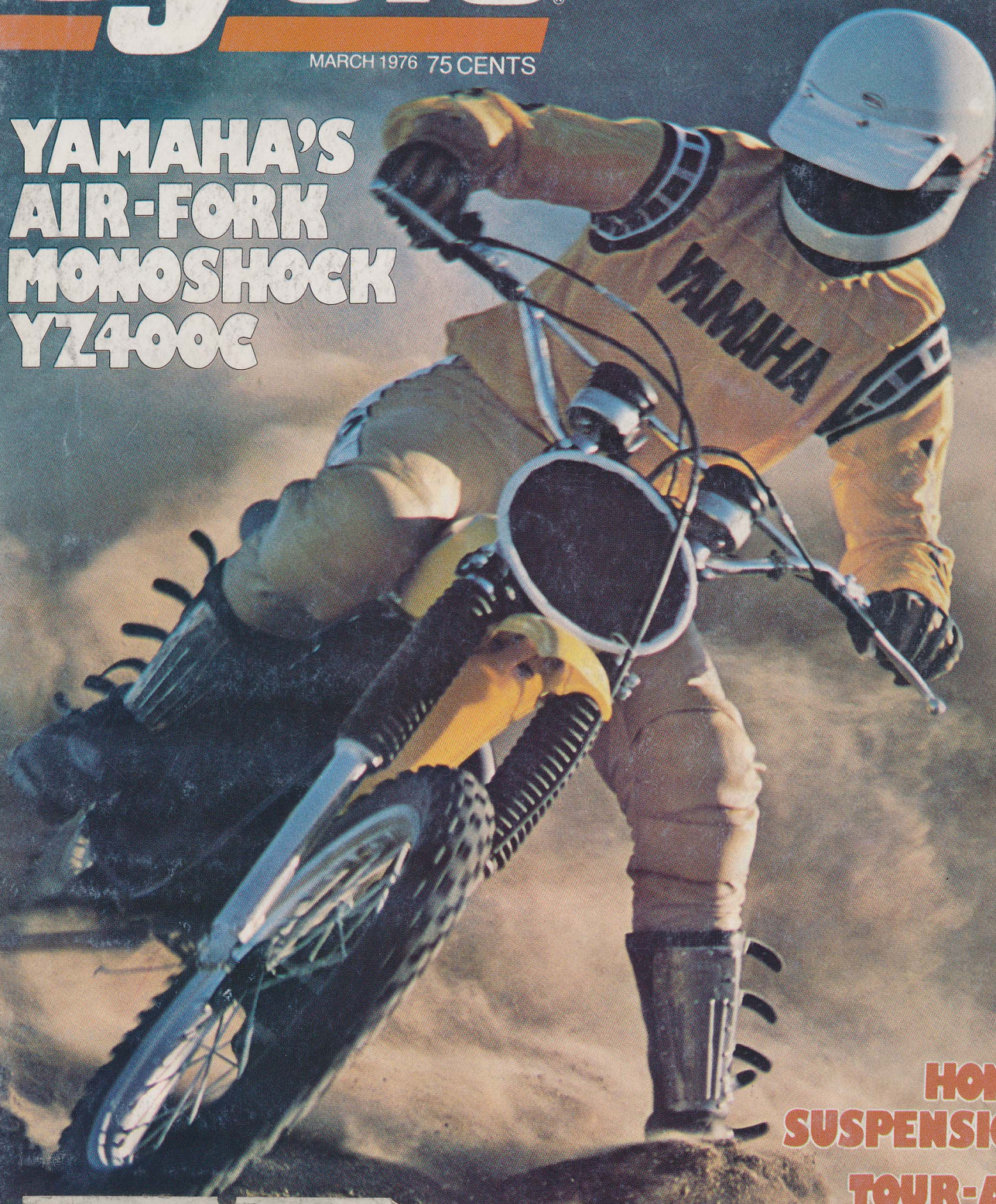


# Cycle

MARCH 1976 75 CENTS

**YAMAHA'S  
AIR-FORK  
MONOSHOCK  
YZ400C**



**HONDA 550  
SUSPENSION TUNE**

**TOUR-A-MATIC  
MOTO GUZZI TWIN**

**HATE AND LOVE:  
LAVERDA 1000cc TRIPLE**

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2706 ENGLEWOOD  
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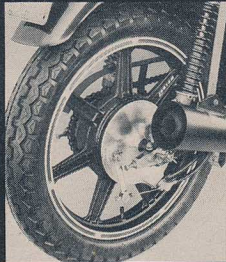


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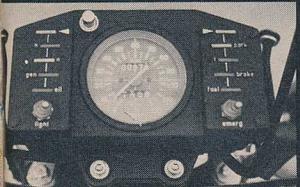
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This Month's Cover: Those lumps on top of the fork legs don't look like much, but they represent technology that may revolutionize motorcycle front suspension. Variable spring rates out of an air hose, after all, can't be all bad. Photography by Dale ("the Poor Man's Steichen") Boller.

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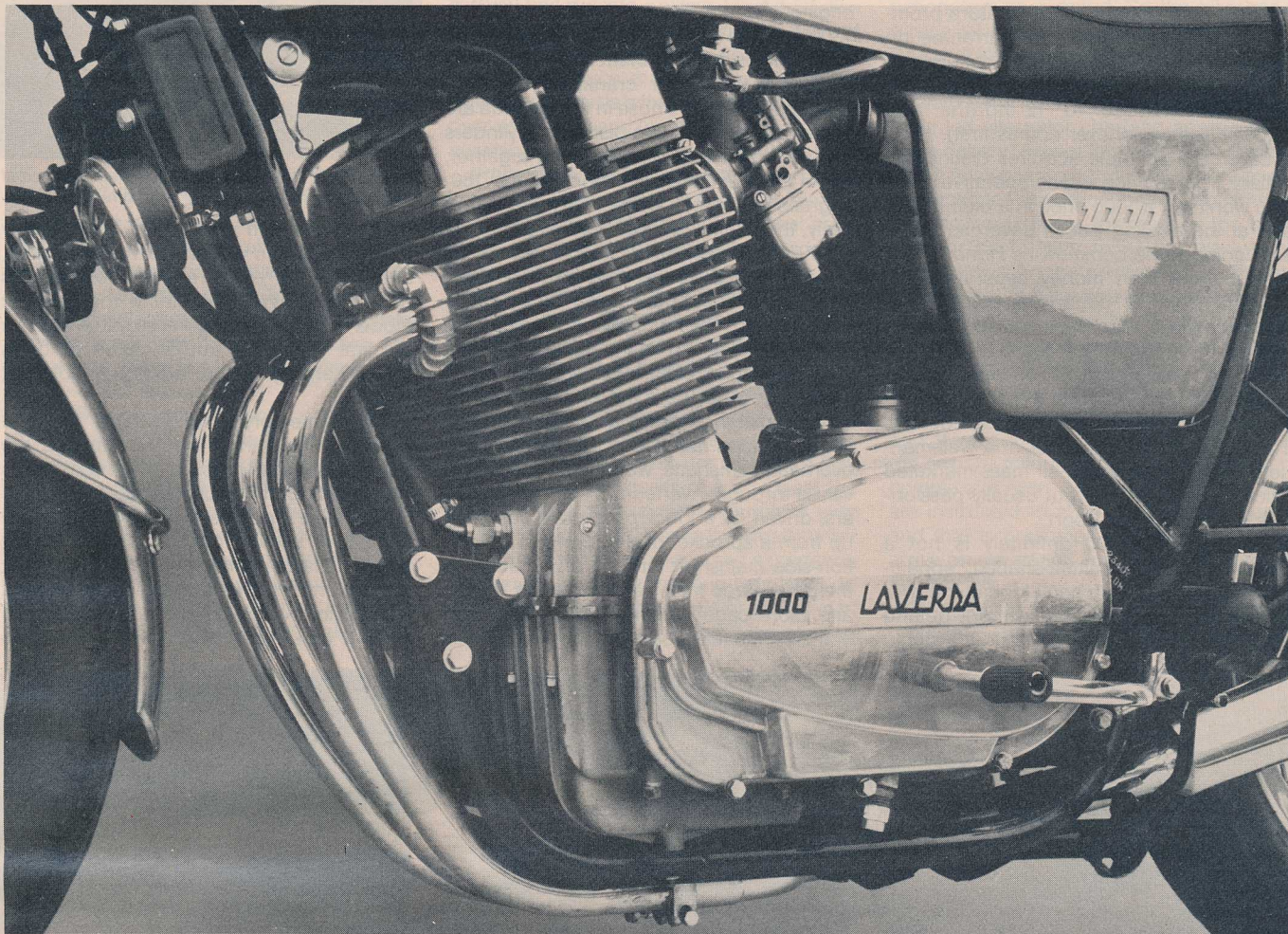
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# LAVERDA



# 1000

● You think you're a motorcycle enthusiast? Before you start writing yourself a Certificate of Merit give some thought to the people who created Moto Laverda, which almost certainly is just an expensive hobby masquerading as a business; an enthusiasts' indulgence. Sure, Laverda motorcycles are made for sale, and priced so the ledgers should show a profit, but that doesn't mean the operation really makes business sense. The Laverda family's major activity, its solid economic base, is the manufacturing of agricultural equipment; motorcycles probably represent a diversion of resources that would yield a better financial return if applied

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to the production of tractors. And if there has been a saturation of the market for tractors, then Laverda might reasonably have chosen to pump out a great swarm of mass-transport mopeds. Instead, the family plunged into motorcycling at its most difficult and—let's face it—most entertaining level: first with a 750 twin clearly inspired by the old Honda CB77 Super Hawk; more recently with a highly original 1000cc triple.

We tried Laverda's hyperthyroid Super Hawk-lookalike in 1969 (when it was sold as an American Eagle) and were favorably impressed. But in 1973 we were loaned one of the then-new Laverda 1000s, and it

proved to be absolutely marvelous. That machine's drag-strip performance placed it squarely among the quickest Superbikes, its lavishly ventilated drum brakes were a match for the others' new-fangled discs, and the big Laverda's handling was wonderfully precise and steady. The only flaw in this otherwise lovely picture involved availability: you couldn't get a Laverda except on an import-it-yourself basis. (Tom Lester, of the Lester Tire and Wheel Company, supplied our test bike; he decided a Laverda 1000 would be terrific even as a near-orphan.)

Now everything has changed. Massimo Laverda has his factory cranking out more



motorcycles, and there are Laverda distributorships scattered throughout much of the habitable earth and Canada. In America it's currently Continental Motorcycles, who have provided us with the latest version of the Laverda 1000; they presumably would be more than willing to do the same for you, if you've got the \$3900.00 presently being penciled on the price tag. Presumably, too, there will be parts and a service network of sorts—and Continental's literature promises a six-month, 6000-mile warranty on everything but the bike's tires, battery and lights, with coverage for the engine and gearbox extended to 12-months and 12,000-miles (whichever comes first).

Laverda's big triple acquires distinction, initially, from its price and comparative rarity. You won't see a 1000 once in a blue moon, and at the existing prices Laverdas aren't ever going to be common as Hondas. But there's more than money separating the Laverda from its Japanese equivalents. Hondas always reach finished form as an aggregate of committee decisions, and reflect the parcelling-out of engineering chores, which gives them a high degree of refinement but a somewhat blurred identity. They have all the character of a well-mannered crowd; they and their mass-marketed fellows are the faithful but usually passionless servants of the Sport.

The Laverda 1000 definitely is not a Honda, not a committee-shaped, appeal-to-all motorcycle. You can't look at the bike closely, or ride it very far, without getting the feeling its design is the work of a single

engineer, and its seating position and handling characteristics reflections of the preferences of a single test rider. The basic layout is one that no group of engineers would be able to agree upon; the bike's feel and steering say, loudly, that they were defined by a rider who strained—unsuccessfully—to remember he was making decisions for people other than himself.

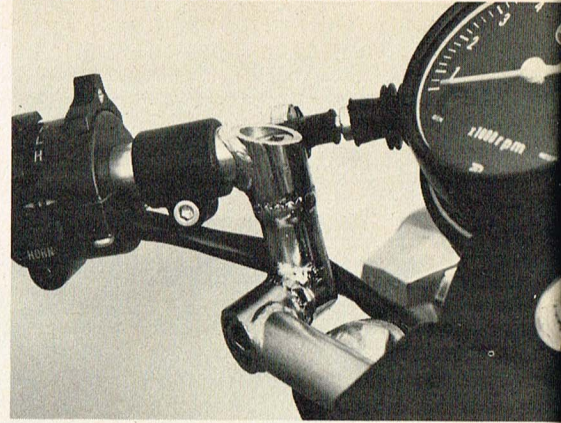
Only a lone and singularly courageous engineer would have chosen the Laverda 1000's engine layout. There have been other in-line triples, most of them two-strokes, but they've all had their crankpins disposed 120-degrees apart. Those in the Laverda are in a single plane, so the pistons in cylinders one and three whiz up and down together, while the number-two piston moves 180-degrees out of step with its partners. Effectively, the engine is a 660 vertical twin, with a 330 single separating its cylinders. This arrangement gives the engine rather weird firing intervals but quite good dynamic balance, without the longitudinal rocking couple that makes so many triples feel like Brodingtonian electric shavers.

Once you get past the engine's literally off-beat piston phasing it is fairly conventional, though ambitious. There are two overhead camshafts, working narrow-angle valves through inverted-bucket cam followers, driven by a long roller chain reaching up from a sprocket on the crank. The ignition-side mainshaft turns in a ball bearing; the other three mains are carried in rollers, and more caged roller bearings are used at the connecting rod big-ends. And all this

rotation, along with that in the five-speed transmission, is captured between the halves of a huge, thick-walled engine/gearbox casing, which is a sand casting (none of your namby-pamby eggshell die-castings for Laverda). It's all very substantial, and promises to survive enthusiastic use.

British motorcycle engineers favored triple-row chain drives linking cranks and clutches, and they showed wisdom in that even if their clutches seldom worked particularly well. The Laverda has a triplex-chain primary drive, and a clutch that's just about bullet-proof. It's a 13-plate monster, running at slightly less than half engine speed (the primary ratio is 2.04:1) and you can drop it into engagement with the engine redlined without provoking slippage, or feather the lever to get moving on a steep hill without

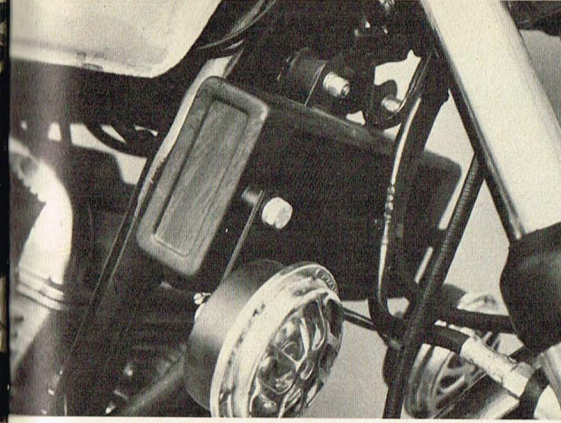
PHOTOGRAPHY: PAUL R. HALESWORTH, DALE BOLLER



A five-piece, three-way-adjustable handlebar that can't be adjusted into any comfortable position.

producing a sign of distress. There's only a single problem with the Laverda's clutch, and that's the effort required to move its plates apart. We don't think this present model is quite the grip-improver we had in the first Thousand, but its clutch action is still stiff enough to put a bulge in your left forearm.

Unless memory plays us false, the new Laverda 1000's throttle return springs are much softer than those in the first example we tested. Both machines have a trio of 32mm Dellorto pumper-type carburetors, but the earlier version had its slides lifted by an all-cable connection with the twist-grip; the new model uses a single cable, without the previous three-branch junction box, to work a cross-shaft that, in turn, operates



The Laverda has an oil cooler, hanging on rubber mounts and placed in the over-fender airstream.

a system of levers and links ending at the slides. This sounds complicated, but isn't, and it does soften the throttle action enough to let you pull the brake lever with your fingers while rolling the grip with the palm of your hand, which means you can blip the engine for downshifts just like all the big-time road racers.

Our first one-liter Laverda had 230mm drum brakes at both wheels, and stopped as well as the Superbikes blessed with a disc brake up front. That probably said less about the relative merits of disc and drum brakes than it did about the forcefulness of Laverda's anonymous test rider. Whoever he is, the man rides hard enough to discover any brake system's shortcomings. He wasn't happy until the first bike's drum brakes were

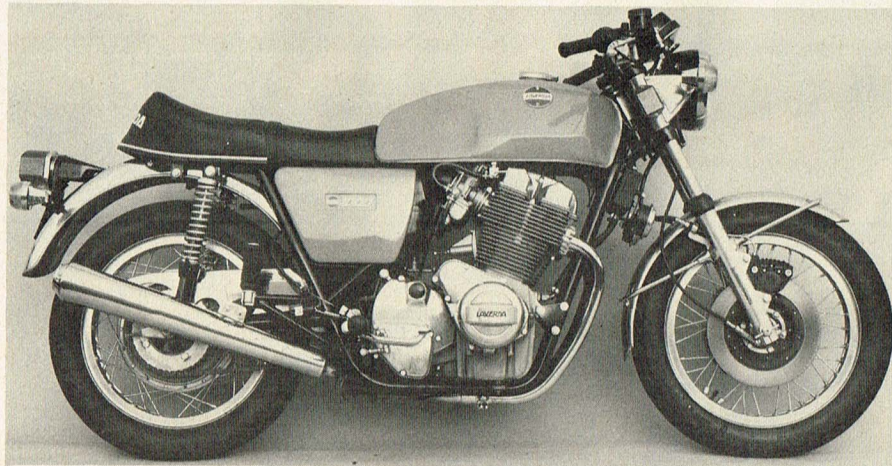
working like discs; the new Laverda 1000 has a disc brake for its front wheel, and it has also been arranged for a hard-charger. There's not just one disc, but two, and dual twin-piston calipers. The rear brake is the same twin-shoe, alloy drum affair as before, and it will work harder than is necessary without fading. Give the front brake lever a healthy squeeze and the Laverda's 700-odd-pound mass (with fuel and rider) stops like you had run into a pillow. Most dual-disc brakes introduce enough in the way of pad/disc clearance, caliper flex and hose-bulge to produce a spongy action at the lever. The Laverda's front brake is proof that over-sensitivity and/or vague feel are not inevitably a price of very powerful braking.

Pretty generally Italian-made motorcycles are Italian from axle to axle, and while this may be a natural offshoot of national pride it has led to some unfortunate choices of components. There was, for example, a long period in which the only thing to be said for Pirelli motorcycle tires was that they were made in Italy, and some of the Dellortos we've seen seem to have been invented just to keep the Amal Concentric from being the world's most exasperating carburetor. The new Pirellis have, of course, proven to be excellent, and the latest generation of Dellorto pumper-type gasifiers are at least the equal of any motorcycle carburetors ever devised. But that still leaves the small matter of electrical equipment, and sad experience has taught us that a made-in-Italy label on a generator or ignition coil promises dim lighting in the dark of night, hard starting

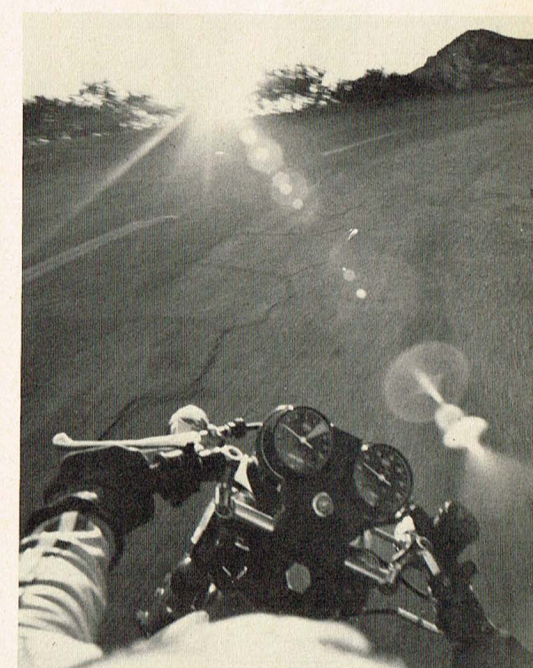
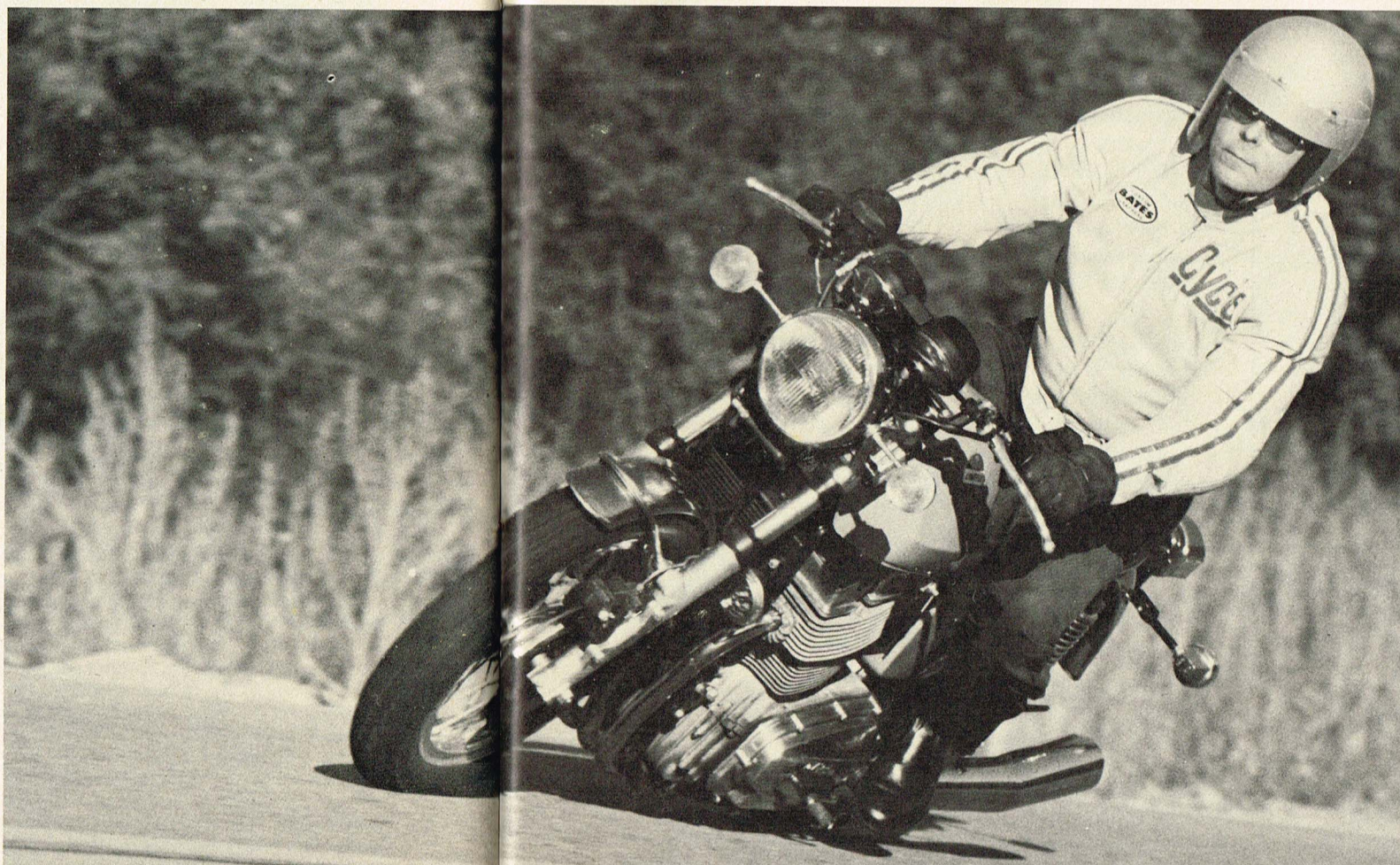
in the cool of morning, and entertaining searches for the causes of smoldering insulation and blown fuses.

Maybe it's because Breganze, where Laverdas are made, is located far in the north of Italy and thus exposed to foreign influence (if you're Italian, substitute "treasonous impulses"), but for whatever reason the Thousand's components clearly have been bought on the basis of what works and nationalism-be-damned. So the bike has a basically-Bosch electrical system, with only little stuff like turn-indicator lights from other sources. The electricals are fairly straightforward (with rectified output from a crank-mounted alternator charging an absolutely huge battery) except for the ignition system, which is all-electronic. We don't care much for capacitor-discharge ignition systems on four-stroke engines—for reasons too complex for exploration here—but we'll admit that the one on the Laverda does the job, and the fact that the sparks are magnetically-triggered eliminates the service problems inherent in the use of mechanical breaker points. Oddly, though the triggering is magnetic, the spark advancer is mechanical. How much advance this mechanism's spring and flyweight provide is left a mystery in the owner's manual, which is otherwise very complete (it even includes a parts list). You are instructed to align some timing marks, and that is presumed to make the sparks arrive on schedule . . . whenever that might actually be.

Some of the Laverda's components were "sourced"—to use the Purchasing Agent's



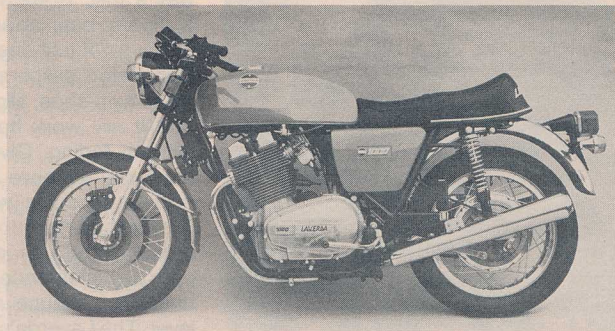
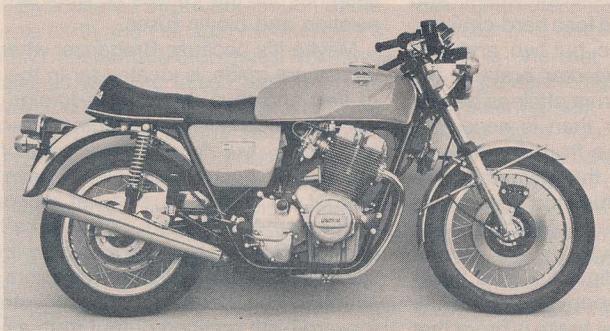
**Revised steering geometry makes the new Laverda's handling lighter at the expense of stability**



Very agile in the tight and twisty, but a rough rider unless the road is billiard-table smooth.

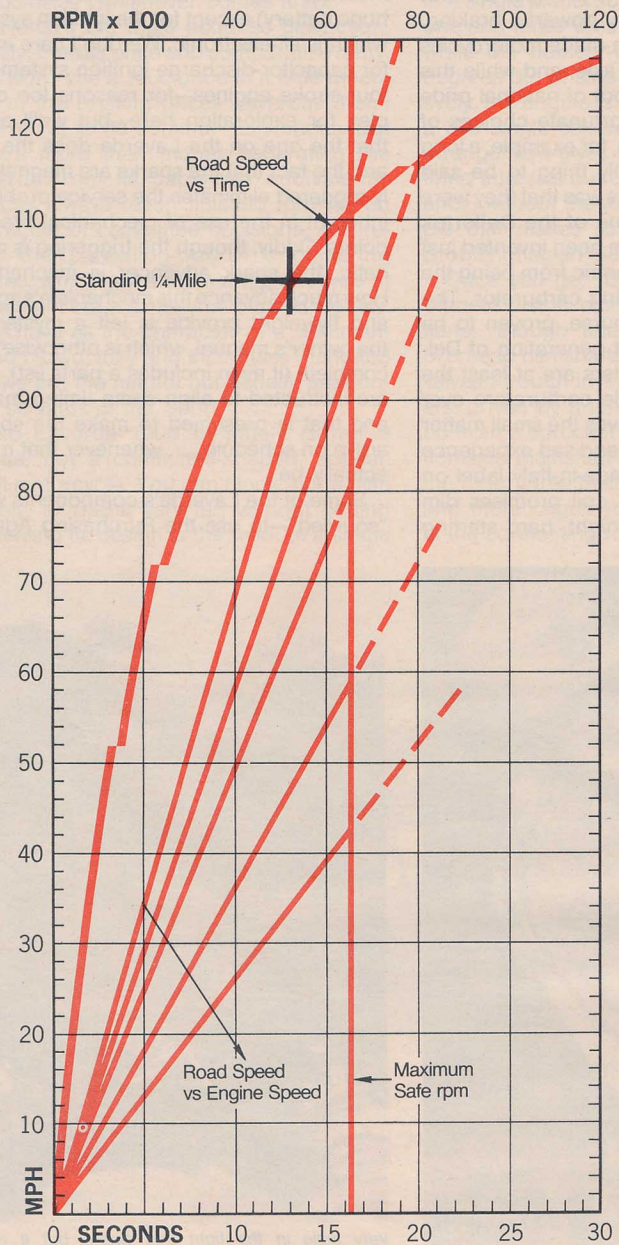
**LAVERDA 1000**





### LAVERDA 1000

Price, suggested retail .....	\$3900
Tire, front .....	4.10H x 18 Dunlop TT100
rear .....	4.25/85H x 18 Dunlop TT100
Brake, front.....	1.50 x 10.83 in. x 4
	(38 x 275mm x 4)
rear .....	1.18 x 9.06 in.
	(30 x 230mm)
Brake swept area .....	209.83 sq. in. (1353.4 sq. cm)
Specific brake loading .....	3.42 lbs./sq. in. at test weight
Engine type .....	In-line, four-stroke, DOHC triple
Bore and stroke .....	2.96 x 2.92 in. (75 x 74 mm)
Piston displacement .....	59.8 cu. in. (980.8cc)
Compression ratio .....	9.0:1
Carburetion .....	(3) 32mm; PHF Dellorto
Air filtration .....	Dry polyurethane foam
Ignition .....	Magnetically triggered CDI
Bhp @ rpm.....	NA
Torque @ rpm .....	NA
Rake/Trail .....	26° /3.4 in. (86mm)
Mph/1000 rpm, top gear .....	16.9
Fuel capacity .....	4.1 gal. (15.5 liters)
Oil capacity.....	6.3 pts. (3.0 liters)
Electrical power .....	123 watt alternator
Battery .....	12V, 27AH
Primary transmission.....	Triplex chain
Secondary transmission .....	5/8 x 3/8 roller chain
Gear ratios, overall .....	(1) 11.2 (2) 8.08
	(3) 5.89 (4) 5.03 (5) 4.29
Wheelbase .....	58.5 in. (148.6 cm)
Seat height.....	32.0 in. (81.3 cm)
Ground clearance.....	4.3 in. (10.9 cm)
Curb weight .....	552 lbs. (251.0 kg)
Test weight.....	717 lbs. (326.0 kg)
Instruments.....	Tachometer, speedometer, trip-meter
Standing start 1/4-mile .....	12.93 sec.; 103.09 mph
Average fuel consumption .....	38 mpg
Speedometer error .....	30 mph, actual 28.39
	60 mph, actual 58.10





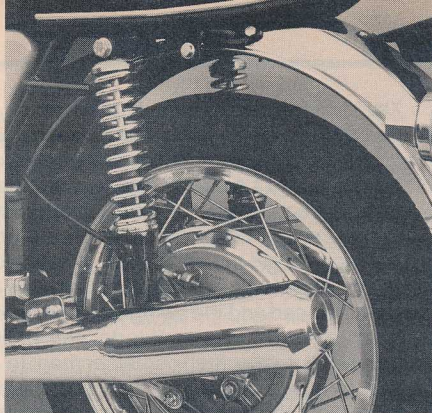
term—in Italy, which does produce some very good motorcycle hardware. You can't quarrel with Laverda's use of Ceriani forks, for instance, and the particular variety of Brembo disc brake found on the 1000 is excellent. Neither is there anything wrong with the Borrani aluminum-rim wheels. But Laverda buys speedometers and tachometers from Japan, and the Dunlop K81 TT100 tires are English. So the motorcycle is international, in terms of individual components, even though the net result is unmistakably 200-proof Italian.

It's not as easy to start this new Laverda 1000 as the old one, and that's a very good thing. You didn't even need a key for the 1973 version: its sparks were controlled only by a kill-button. The "key" served only to energize the electrical system, which meant that although the bike couldn't be push-button-started by a person or persons unknown, the old racer's run-and-bump would have it running and disappearing in the distance before you could yell for the police. The new bike's ignition system is wired through a proper ignition lock, and to that extent it's harder to start. In all other respects it's easier. You pull the choke lever back a tad, after you've fumbled around under the forward end of the fuel tank and found it, and hit the starter button. Do that, and it's running. The choke isn't necessary when the engine is slightly warm, as after making a stop for lunch, but you might have to tweak the throttle a couple of times to squirt some fuel down the carburetor throats. One last thing: if you leave the lights on and drain the battery you'll have to do some pushing—there's no kick starter.

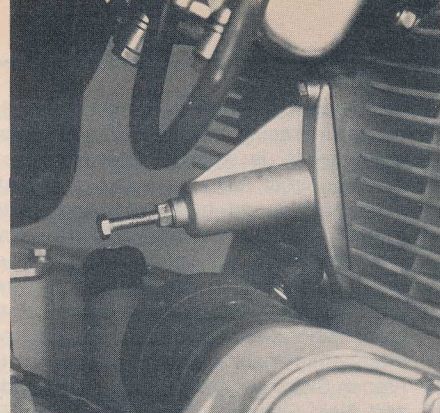
Another complaint we made about the earlier Laverda was that you couldn't pull it up on its center stand without rupturing everything but your ears. The stand was too tall, and it made you lift the bike's weight about a foot in the air before the over-center point was reached. This problem, like that involving the key, has been corrected—and the correction is a trifle past the mark. The new bike comes up on its shorter center stand like a champ, but the stand is now so short it lets the rear tire touch the ground and you can't spin the wheel while oiling the chain. As a result, there is a tendency to ignore the chain-lubricating chore, and that's one sin this heavy, powerful machine won't forgive.

No side stand is fitted on the Laverda, and that sometimes is a bother. But all side stands we've seen make an encroachment on cornering clearance, and that probably is why none has been provided on this motorcycle. The people at Laverda have been painstaking in tucking things like mufflers in close, and high, and it wouldn't make sense to do all that and then have a side stand dragging the pavement in left turns. If the stand was there, it would drag, because the name of the Laverda's game is cornering. The bike has a no-flex frame, a suspension that is aggressively taut and tires that grip the road like they were putting down roots. Given those things, and its seating position, and all the intangibles that add up to character, the Laverda begs to be ridden around corners in a highly imprudent manner; it will take stronger men than we to resist its begging.

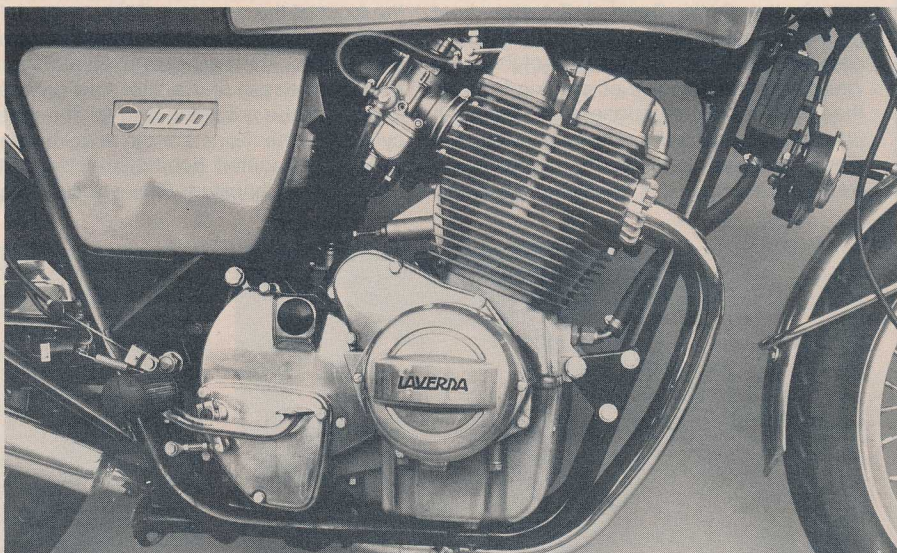
MARCH 1976



These are the longest spring/damper suspension units we've seen, and the stiffest we've felt.



A Honda-style cam chain tensioner, and a trio of 32mm Dellorto accelerator-pump carburetors.

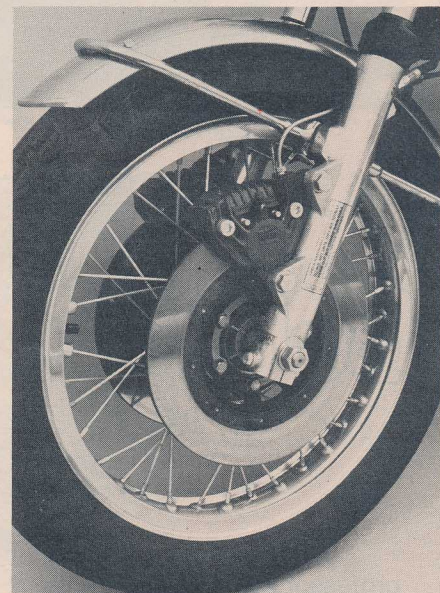


The 1000 triple's crankcase is unusually deep, a bit rough, and looks unbreakably strong.

Unfortunately, only the very brave (or foolish) will yield to the temptation to ride the new Laverda *really* hard, because the steering gets very twitchy at times and a thoughtful man will be moved to wonder if maybe the bike isn't going to twitch him right into a tree. The earlier Laverda had quite heavy steering and would give your shoulders and arms a genuine workout, but it was extremely stable. You worked to get it aimed; once aimed it carried through very precisely. The new version has lighter steering, which is much nicer when you're tootling around town, but the front wheel develops notions of its own in a fast, bumpy corner. The bike never did anything bad to any of us, despite some fairly vigorous riding; it did signal us, by means of front-wheel semaphore, that a danger threshold had been reached.

So where was Laverda's demon test rider when this handling twitch developed? Sulking, probably, but resigned to something everyone was sure the customers would like: lighter handling paid for in high-speed twitchery. Our records indicate that the earlier Laverda had a 29-degree steering axis inclination; this new version has its fork steepened to 26 degrees, and this seems to have made the handling difference. The old bike was reluctant but very steady; the new one falls into turns without much urging from its rider (a little too eagerly at low speeds) and it doesn't want to settle down unless you adopt a Kenny Roberts hang-off-the-in-

(Continued on page 109)



A dual-disc front brake, with two-piston Brembo calipers: powerful, and with a nice feel.

**LAVERDA 1000**



side riding style. We get the feeling that the Laverda would respond best for a rider who's style involves squatting on the inside footpeg with just the calf of one leg hooked over the seat.

In fact, the Laverda's seat isn't much good as anything but a rest for one leg. It is hard, narrow, high-crowned and—after an hour or so of touring-type riding—excruciatingly uncomfortable. People being ridden out of town on a rail have a less painful perch than that provided by the Laverda 1000. And while the solo situation is bad enough, riding two-up is even worse. Your passenger won't be happy, because the seat is wrong all the way from front to back; you'll be in an unbearable position, shoved forward over the hardest, narrowest and most sharply crowned seat section. Then, just to complete your discomfort, you'll find that the Laverda's five-piece adjustable handlebars can only be adjusted for different varieties of wrist-cramp and sore palms. The basic idea of adjustability is great, but the brake master cylinder fouls against the instrument housing when you try to move the grips into any comfortable position. Laverda should have stayed with the nice BMW-style handlebar they used back in 1973.

These seriously compromised comfort factors combine with the Laverda's stiff-legged ride to make it a lot less pleasant on a Sunday morning ride than it could be, but it's still an entertaining road rusher. The engine gathers up some very impressive muscle at the tach needle edges around toward the 6500-rpm redline (which we violated on many occasions without scattering any parts), and the close-ratio transmission makes maximum use of the available power. The Thousand isn't the quickest quarter-miler among the Superbikes, and you shouldn't expect it to be with the kind of gearing it pulls. But it does very well against even the strongest of its competition out on the road, and it's a better 90-mph cruiser than anything this side of a Honda GL1000 or a BMW R90S. How much that's worth, in a country with flashing red lights and traffic courts for those caught riding much faster than 55 mph, we're not sure.

When you get right down to it, we're not sure what the Laverda 1000 is worth, period. It's not quite as fast as a Kawasaki Z-1, but handles better, quirks and all. It's not as well-finished as a BMW, but it's not bad and there's nothing on it that isn't satisfactory. What it does have is a strong, sharply-defined character, and that's something you can't get many places these days. If you want a faithful servant, get yourself a Honda. But if what you want in a motorcycle is the mechanical equivalent of a good drinking buddy, one who'll lead you straight into temptation and punch you in the eye for letting life go to your head, a buddy who'll mess with your women, probably plunder your wallet, and make your days glow with raffish excitement, then the Laverda is a pretty good bet. Those who don't hate it are sure to fall in love with the thing. When you find that much character, in a man or a motorcycle, there's no middle ground. ●

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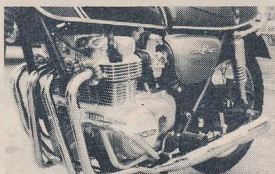
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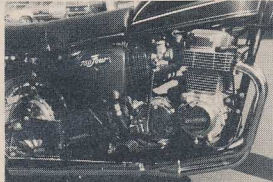
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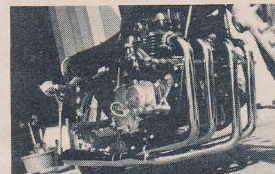


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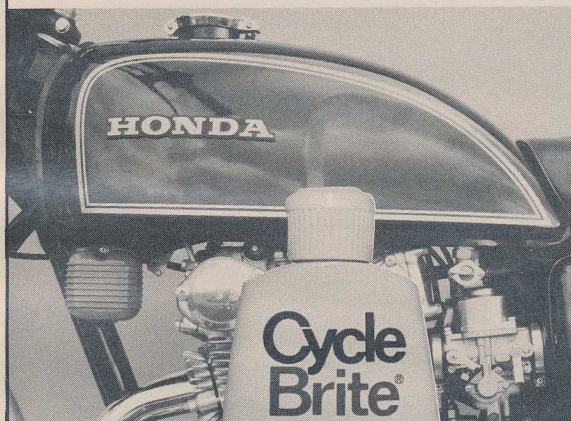
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