

Can you frighten yourself silly on a four-cylinder Superbike? Does its cornering gyrations make you speak to the sky before bedtime? Climb aboard the Le Mans CX100: it's simple, clever and competent.

•When **CYCLE'S STAFF MEMBERS** gathered around the Moto Guzzi Le Mans after its delivery for road testing, there was (for once) not much talking. We stood in awe - not of potential eleven-second quarter-miles or of multi-valve combustion chambers and roller-bearing crankshafts; we were entranced by the Italian V-twin's incredibly deft and well-integrated styling. What the Le Mans does to most other European marques in terms of looks is embarrassing, and what it does to bikes from the Orient is positively humiliating. If you read this as a *Cycle* endorsement of the Moto Guzzi's appearance, you aren't deceived - it is one.

Nineteen seventy-two saw the introduction of Guzzi's 750 Sport, which in 1977 was replaced by an 850 model dubbed Le Mans. The original 850 Le Mans was a pumper-carbureted, triple-disc, red and black crowd-drawer that won victories in local and AMA road racing - and in the hearts of many street riders. Two years later the 850 was replaced in this country by a one-liter version, called the Le Mans CX 100.

A couple of factors prompted the displacement increase, and we're not sure which was the more important. For starters, the EPA was writing ever-tighter rules for motorcycle exhaust emissions. Passing them with the 850 would make the bike too slow, Guzzi's engineers figured, so they increased the bore size five millimeters in an effort to offset de-smogging measures and revitalize

the Vee. Second, Berliner Motor Corporation, Moto Guzzi's US importer, found themselves faced with ushering not two but three engine types through the rigors of annual Protection Agency tests. The V-50 was one "family"; the 850s and 1000s were the other two. Sure would simplify procedures, thought they, if there were only two engine types.

Dropping the well-established one-liter models would have been folly, of course, and the V-50 was too new to leave on the chill of the back burner. The obvious bikes to get the axe were the 850s: the low-priced 850-T3 passed on, and the Le Mans was booted upstairs to enjoy life with new 475cc cylinders.

This year's Le Mans shares with the 1979 edition all but its 80 mph speedometer, and it has much in common with its stable-mate, the 1000SP. The 1000 Le Mans has different pistons, carburetors, fork, shocks, instruments and cosmetics than its 850 predecessor.

Nineteen-eighty's Le Mans shares the same powerplant with the 1000SP: both engines have 948.8cc, achieved by pumping pistons 78mm in 88mm bores. Unlike some Guzzis of the past, the Le Mans does not have chromed aluminum cylinder bores; it has cast-iron liners sunk in finned aluminum shells. The Le Mans' compression ratio is 9.2:1, significantly lower than the 10.2:1 ratio used in the 850 Le Mans.

Two valves, operated through conventional tappets, pushrods and screw-adjusted arms, fill and empty each combustion chamber. No

chains drive the Guzzi's engine internals: instead, the camshaft is turned by gears with a two-to-one reduction ratio, driven directly from the crankshaft's nose. Both the camshaft and the crankshaft run in plain bearings, and these are lubricated by a gear-type oil pump. A dual-point contact breaker-type distributor triggers twin dual ignition coils. There is less spark advance than in the past. At idle the spark hits at two degrees BTDC; this is increased by a "centrifugal" advancer to a maximum of 33 degrees.

While the 850 Le Mans had no air cleaners (instead, coarse-mesh-screen rock guards covered the carburetor mouths), the 1000-series Le Mans model has a real airbox and a real air filter. The filter is paper, a throw-away-type, and it rests inside the steel chamber beneath the top frame tubes. The airbox also includes a crankcase breather to keep the EPA happy. Even if Guzzi had wanted to supply an engine with rock-guard air cleaners, the intake noise probably would have been prohibitive.

Thirty millimeter Dell'Orto square-slide carburetors are fitted on the V-twin, and they have non-traditional, for Dell'Orto, accelerator pumps built into their needle jet assemblies. When the carburetor needles drop to their closed position they push small pistons down and flood the space above them with gasoline. Next time the slides are opened, the spring-loaded pistons squirt gas through the carburetors' main spray nozzles into the venturis.

MOTO GUZZI LE MANS CX100

PHOTOGRAPHY: DAVE HAWKINS, ROBIN RIGGS

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MOTO GUZZI TEST

This results in instant, clean acceleration from low and high speeds, with satisfactory emission levels during normal cruising. Though the EPA requires emission limits no matter how a bike's carburetor and ignition units are adjusted (which means closely held adjustment limits), the Guzzi has no locks on its carburetor air screws. Presumably most will be cemented in place, similar to those on the Ducati Darmah.

You'll need the Le Mans' choke lever to get going in the morning; yet the engine is ready to run without it the moment it starts firing. On warm days, the choke lever will be untouched because the Moto Guzzi is easy to start and quick to warm up. There's no kickstarter and apparently none is needed; our test bike's electric starter worked flawlessly. At all engine speeds the Le Mans is quiet, especially its exhaust note. There is a moderate amount of intake roar despite the quieting air filter arrangement.

Though the Moto Guzzi offers a firm ride and no-frills seating position, its concessions to function are not complete; the Le Mans has a stylish, useful fairing and an improved fork that make casual riding acceptable.



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Those used to high-revving fours will be amazed at the Guzzi's torque spread. Practically from its lumpy idle it supplies usable torque, which doesn't appear to drop off until nearly 8000 rpm, the Le Man's redline. You can pull the engine down to 1500 rpm in top gear, and then accelerate away without so much as a hiccup. Although our 1979 1000SP test bike displayed no real signs of this, there's a point in the 1980 Le Mans' rev range where horsepower seems to take an upwards leap. At 5000 rpm things begin to happen, and though calling the V-twin peaky would be inaccurate, calling its power curve humped would be fair.

Highway speeds clearly do not

make the Guzzi powerplant work hard. At 60 miles per hour the engine is turning just 3529 rpm; considerably less than half-maximum-speed. Jumping on the throttle in the lower gears, with the engine turning above 5000 rpm, will give you a real jolt, especially if you're riding along a rough highway. The natural reaction to drive-shaft torquing is for the bike's rear end to rise, topping out the shocks. When this happens, there's little reason to expect the shocks to do much to make life comfortable, and they don't. In normal riding situations this firmness is not bothersome, but it is noticeable.

Like many automobiles and motorcycles - and people - the



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MOTO GUZZI TEST

Le Mans has gained weight with advancing years. The 850 Le Mans tipped our scales at 513 pounds, full of gas. This year's bike weighs 530 pounds wet, an increase of 17 pounds. Where did the extra baggage come from? Heavier top end and fairing components, fancier instrumentation and the air-filter paraphernalia.

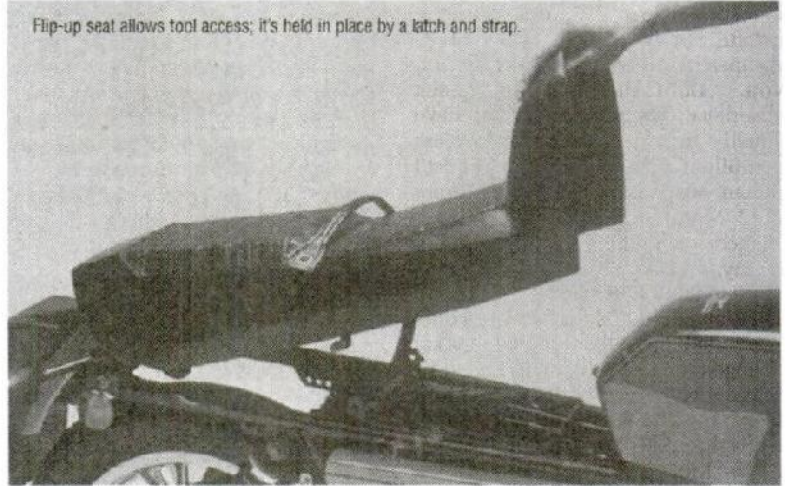
You won't surprise any Honda CBX owners on the quarter-mile with a Le Mans, but ours did make a respectable drag-strip showing: 13.50 seconds at 98.46 miles per hour. This figure is somewhat representative of the old 850 Le Mans (13.08 seconds at 103.21 mph), but it's even closer to the Ducati Darmah's 13.13-second, 101.35 mph quarter-mile showing.

Moto Guzzi specifically recommends leaded fuel for the Le Mans; we found ours ran best on premium. With regular there were hints of detonation in high-load situations. Our most economical tankful of gas yielded 51.1 miles per gallon, and the worst gave us just 35.1 mpg, obtained by running the Guzzi pretty hard along some back

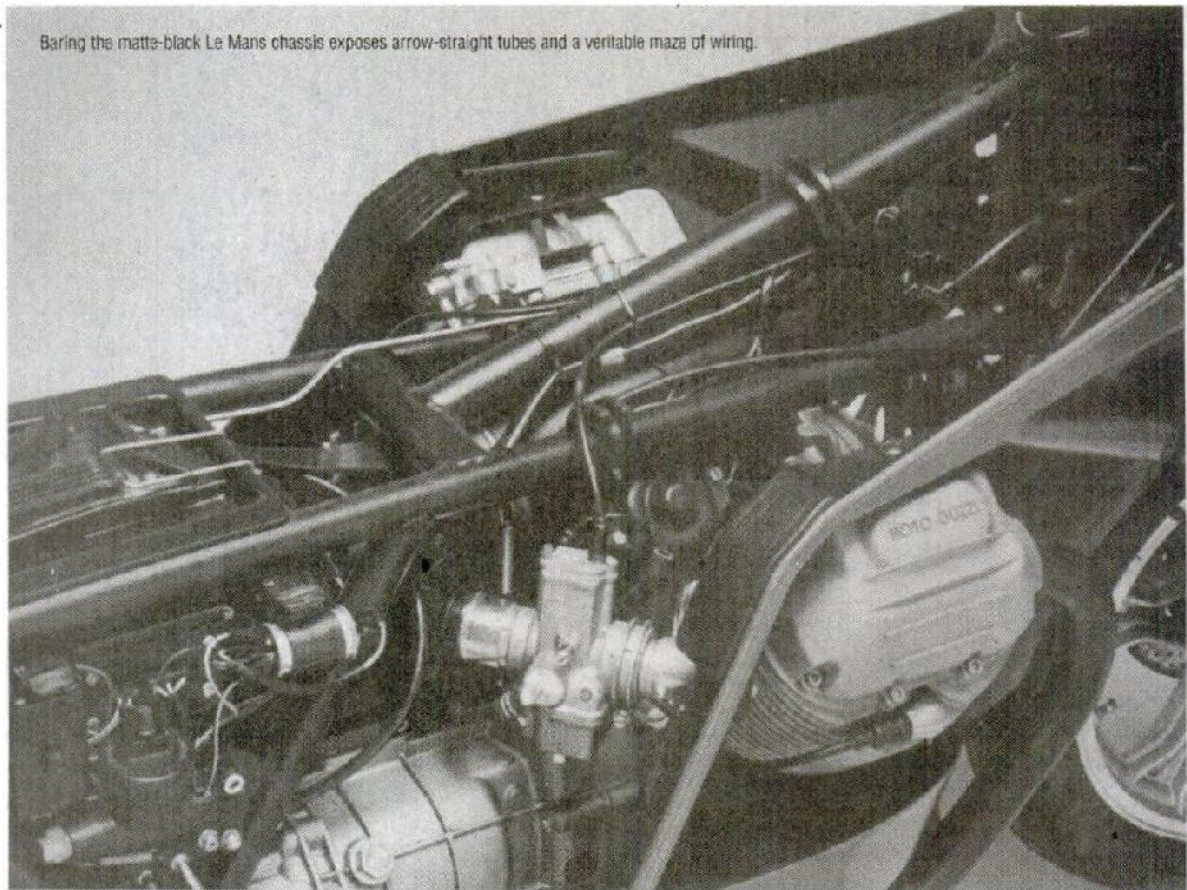
roads. Since the Le Mans holds six gallons of fuel, including reserve, you can cover 251 miles if the bike averages 41.9 mpg - and that's what ours averaged. No doubt, extensive use of the Guzzi's accelerator pumps has more to do with its fuel consumption than simple road speeds do.

Transmitting power to the Guzzi's gearbox is a five-piece dry clutch with two friction discs and

three metal plates: the flywheel acts as one, a center metal disc is the second and the pressure plate takes up the rear. The gearbox is built as a separate module and can be removed for servicing as a unit. Its five gear ratios are spaced much to the engine's liking; despite a relatively tall first gear, the clutch can handle slippage without overheating and losing its grip. Shifting seems clunky at first, but once you



Flip-up seat allows tool access; it's held in place by a latch and strap.



Baring the matta-black Le Mans chassis exposes arrow-straight tubes and a veritable maza of wiring.

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get a feel for de-clutching and shifting, the process smoothes out. We experienced no difficulties with shifter mechanism operation, which we did with the 1000SP we tested in April 1979. Either that bike's difficulty has been corrected on the Le Mans, or our problem was an isolated one.

Your first ride on Moto Guzzi's Le Mans will be spent adapting to the low-bar riding posture and getting used to the bike's steering, brakes and engine. Then you'll notice the suspension: it's firm, but in a careful way. Let's just say that its competence sort of sneaks up on you. Both the fork and shock absorbers are sprung firmly and have equally firm damping; yet they are compliant in a fashion that typical Italian suspension components are not. Moto Guzzi has engineered a suspension system that is certainly sporty, but you'd be pushing the issue to label it as harsh.

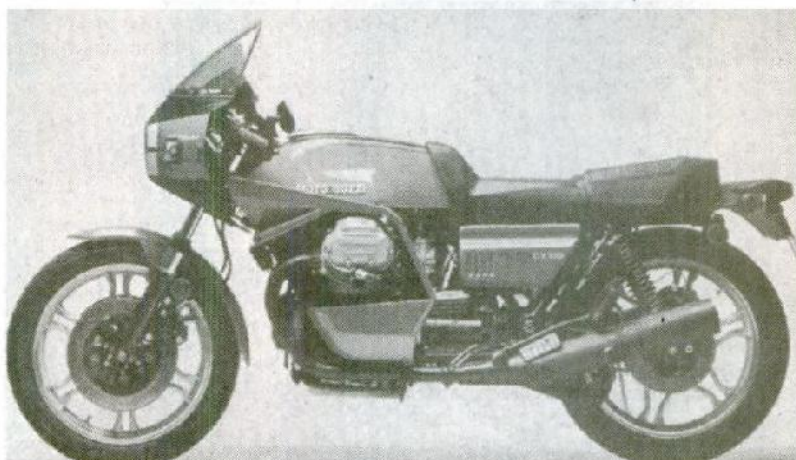
When the Le Mans became a one-liter motorcycle, Moto Guzzi changed the fork. The 850 carried its brake calipers ahead of the fork tubes; the 1000 carries them behind. And the 1000 has slightly thicker tubes. More important, the 1000 has dual-rate fork springs, ones that allow the unit to absorb subtle road irregularities and yet let the motorcycle remain stable when the brakes are applied vigorously. Overall, the Le Mans' fork action is good, but it still does not equal the minor ripple-compliance of the Honda CB750F or BMW R100S.

The rear shocks complement the front in spring rate and damping quality, and they have preload ramps that allow adjusting them three ways. Naturally, if you're off to straighten out some corners you may

want the higher setting for a little more chassis stability and cornering clearance; if you want a supple ride for that trip out to visit the corners, try letting the springs down. Shaft-drive bikes without significant rebound damping in their rear shocks are more susceptible to rear-end extension under power than firmly damped models are, and

doubt its competence, and for this reason they'll feel more confident on it than on most other bikes.

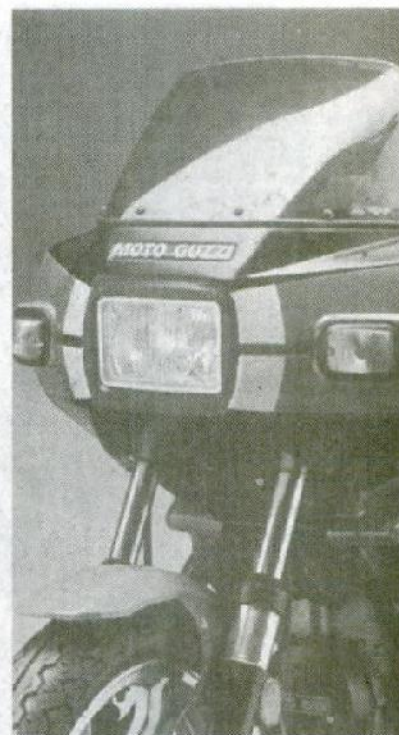
Steering effort is moderate at all speeds, despite the narrow clip-on-handlebars, and there is an adjustable steering damper underneath the right side of the fuel tank. During most rides the Le Mans could do without this accessory, but for



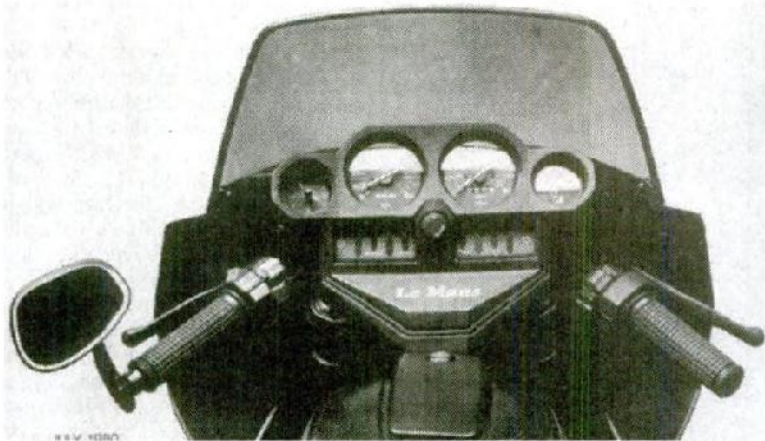
though the Le Mans will raise significantly with a twist of its handgrip, the damping quality of the rear shocks helps to keep this in check. Large bumps taken at substantial speed will give you a jolt; in fact you may even find your hindquarters off the seat momentarily. This is a tribute to the firmness of the Le Mans' shocks springs, its compression damping or a combination of both.

Most riders who throw a leg over the Moto Guzzi will use up their riding skills long before the bike's abilities are exceeded. They'll learn that the Le Mans will not play any games that would make its rider

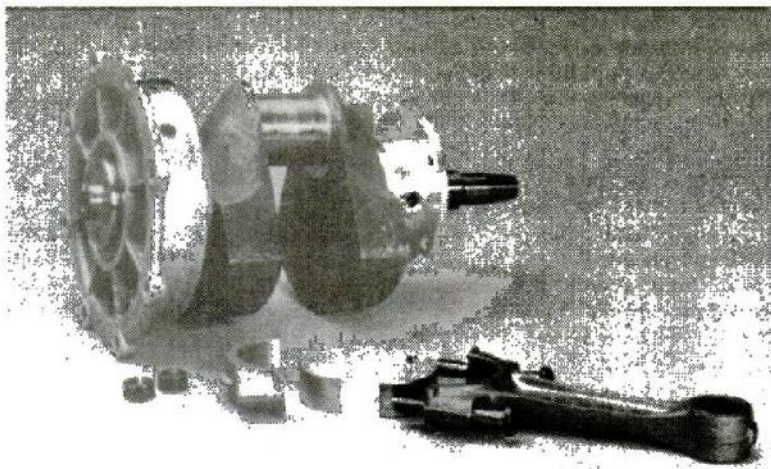
fast-going on rough roads, the steering damper can provide a useful steadying influence. The Le Mans is extremely stable in every kind of cornering except going flat-out in



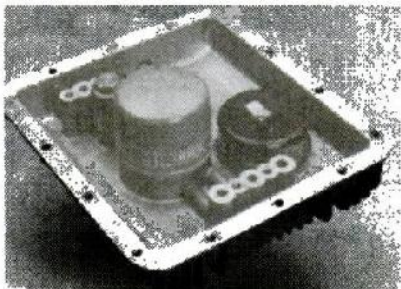
Slide behind Moto Guzzi's information center (left): there are enough components to keep most riders busy, if not dizzy. The bar-end mirror is an add-on, like our headlamp choice (above), a quartz Hella.



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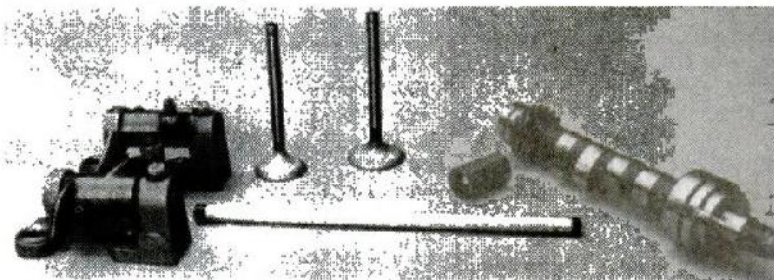
Le Mans' single-throw crankshaft turns in aluminum carriers and utilizes forged, plain-bearing con rods.



Care to spend a nice afternoon changing the Guzzi's oil filter? Fourteen bolts - and two glasses of Perrier.



The nearly auto-sized gearbox comes off as one unit; it may be serviced without disturbing engine.



A familiar song, but nobody can quarrel with its success: four-lobe camshaft, lifters, rockers and valves.



Dell'Orto accelerator pump employs the jet needle, a movable piston and the hollow main-jet holder.

bumpy sweepers: there it starts to do a bit of wallowing.

You can throw yourself around on the Moto Guzzi without upsetting the bike's cornering composure about as delicately as the gorilla throws luggage in that timeless American Tourister commercial. Taking a series of esses in a hurry requires little more than light opposite-lock tugs on the handlebar and follow-through with your body, thanks to the Guzzi's low engine placement and excellent steering geometry. The need for major mid-course corrections will primarily depend on whether you guide the Le Mans into a turn or wander into one, Mr. Magoo-like. Should altering your course be necessary, the Le Mans will happily comply.

Nobody can dispute that the Guzzi's fairing and side panels are stylish, but the styling department intended them to be functional also: they're supposed to add to the motorcycle's high-speed stability, and they were tested to this extent in Moto Guzzi's own wind tunnel. The pieces may work. Something did; our Le Mans proved quite stable at high speeds, even in circumstances that normally give shaft-drives fits - like hopping on the brakes, hard, from Way Up There.

Cornering clearance is good, and though some parts of the undercarriage touch down during S-turn cornering sprints they are pieces that will flex out of the way: you're not likely to end up on your head from dragging a header pipe. First down are the footrests - they fold and simply get shouldered up by the asphalt. The pegs do not have return springs; you must push them back into the correct position.

Pirelli Supersport Gordon tires grace the Le Mans, 100/90 H18 front and 110/90 H18 rear, and past experiences have taught us that these treads are among the finest available for sport motorcycles. This year they're standard equipment on all Guzzi Le Mans. Both tires have speed ratings for continuous velocities to 131 mph. The front tire handles the Guzzi's forward weight bias easily, and it allows the rider to crawl right up over the tank during hard cornering without fear of the dreaded front-wheel skid. Breakaway on both tires is predictable, without unsettling jumps or skips. You're not going to be able to slide the rear of the Guzzi much in cornering since it produces a rather conservative amount

of power. Along with good traction, the Pirellis offer somewhat disappointing tire life; we suspect that our Guzzi will have used up its tires in no more than 3000 vigorous miles. Alas, such is the premium for traction.

There's a junction block in the Guzzi's hydraulic brake system linking one of the front discs to the rear disc brake system. The second front disc is worked in the normal manner, via a master cylinder, line and brake caliper. In this fashion the rear brake pedal operates the rear brake and the left-hand front disc; the hand lever operates the right-hand front brake. Guzzi suggests using the rear brake lever for ordinary riding and supplementing that effort with the hand lever if you need to haul down quickly.

Power and feel from the rear brake pedal is superb - among the best we've tried on a street bike; but the best stops by far are obtained

by using both systems. Naturally, the solo front brake won't allow you to stop as rapidly as both brakes in the "rear" system. Between the two systems, you'll probably be able to stop as hard as you can hang on. Because of the brakes' progressiveness you can keep tabs on how well the tires cling to the pavement.

In front a pair of dual-piston Brembo calipers clamp drilled, 300mm cast-iron rotors. At the back a single Brembo caliper works on a 242mm drilled rotor. The disc holes seem to allow the brakes to cool better and reduce water-induced braking "lag."

Italian-made wheels carry the Pirelli tires, and the rims are 2.15 inches wide. The wheels are coated with a silver paint and they resist scratching, a real help in keeping the Le Mans looking new. The rear wheel carries a cush-drive assembly that helps absorb driveline shocks.

Nothing is particularly fancy about the Guzzi chassis, except that it has removable engine cradle tubes which allow easy engine removal if the time for major surgery arrives. The Le Mans has a 58.5-inch wheelbase - not terribly long for a one-liter street bike.

We like the Le Mans fairing better than the larger unit supplied with the 1000SP. The SP fairing creates a significant amount of turbulence at head-level, but the Le Mans fairing gives torso protection without helmet buffeting; your head stays in the windstream as it does when you ride unfaired bikes. With the Le Mans fairing wind just brushes your shoulders, creating minor turbulence around your chest area.

Lower fairing sections keep your legs warm in the winter and hot in the summer; there's no getting around the way they keep your extremities out of the airstream. Happily, they also keep you dry in

Make and model Moto Guzzi Le Mans CX100
Price, suggested retail (as of 4/11/80) \$4949

PERFORMANCE

Standing start 1/4-mile 13.60 @ 98.46
Engine rpm @ 60 mph, top gear 3529
Average fuel consumption rate 41.9 mpg / 17.8 km/l
Cruising range, main/reserve 217.9/33.5 mi.
(347.1/53.4 km)
Load capacity (GVWR less curb weight) 149.7 kg
(330 lbs)
Maximum speed in gears @ engine redline (1) 51.0
(2) 73.4 (3) 97.3
(4) 117.3 (5) 136.0 mph

ENGINE

Type Four-stroke 90-degree V-twin, air-cooled
with pushrod-operated overhead valves
Bore and stroke 88mm x 78mm (3.47 x 3.07 in.)
Piston displacement 948.8cc (57.9 cu. in.)
Compression ratio 9.2:1
Carburetion (2) Dell'Orto 30mm square-slide
Exhaust system Two into two
Ignition Battery-powered inductive, mechanically triggered
Air filtration Dry cartridge, disposable
Oil filtration Metal screen and disposable paper element
Oil capacity (engine) 3.0 liters (3.2 qts.)
Oil capacity (gearbox) 0.8 liters (0.9 qts.)
Oil capacity (final drive) 0.3 liters (0.3 qts.)

TRANSMISSION

Type Five-speed, constant-mesh, dry clutch
Primary drive Straight-cut gear, 1.24:1
Final drive Shaft and spiral-bevel gear, 4.71:1
Gear ratios, overall (1) 11.6 (2) 8.09 (3) 6.10
(4) 5.06 (5) 4.37:1

CHASSIS

Type Dual front and rear downtube, full-cradle

Suspension, front Coil-spring center-axle fork
rear Swing arm and (2) coil-spring shocks
Wheelbase 1485mm (58.5 in.)
Brake, front Hydraulic, dual-disc, 300mm (11.8 in.)
rotors with dual-piston calipers
rear Hydraulic, single-disc, 242mm (9.5 in.)
rotor with dual-piston caliper
Wheel, front Cast, 2.15 x 18 in.
rear Cast, 2.15 x 18 in.
Tire, front 100/90 H 18 Pirelli Supersport Gordon MT18
rear 110/90 H 18 Pirelli Supersport Gordon MT18
Seat height 770mm (30.3 in.)
Ground clearance 175mm (6.9 in.)
Fuel capacity, main/reserve 19.5/3.0 liters
(5.2/0.8 gal.)
Curb weight, full tank 240.4 kg (530 lbs)
Test weight 312.9 kg (690 lbs)

ELECTRICAL

Power source Alternator, 280 watts
Charge control Mechanical voltage regulator
Headlight beams, high/low 60/40 watts
Tail/stop lights (2) 5/21 watts
Battery 12V 18AH

INSTRUMENTS

Includes Tachometer, speedometer, odometer
and resettable tripmeter, clock, voltmeter.
Indicators for turn signals, neutral, "generator" failure,
low oil pressure, low brake fluid level, high beam, lights
Speedometer error, 30 mph indicated, actual 29.12
60 mph indicated, actual 55.48

CUSTOMER SERVICE CONTACT

Customer Service Department
Berliner Motor Corporation
P.O. Box 145
Plant Road & Railroad Street
Hasbrouck Heights, New Jersey 07604
(201)288-9696

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the rain and bug-free during locust migrating season.

A pair of rubber bumpers keeps you from rapping your knees against the Guzzi's cylinder heads. These pads are not uncomfortable, but they do ask tolerance from those over five-feet, nine-inches tall; they are placed exactly where these people's knees should go.

Surprisingly, the Moto Guzzi's diminutive, angular saddle is passably comfortable. It averages seven inches wide, slightly more than half the width of a GS1000 seat. The Le Mans saddle is low, too: at 30.3 inches few riders will feel as if they've straddled a rail fence. Taller riders won't find the low seat height troublesome either since the stretch to the handlebars prevents having that bunched-up feeling.

In the city nobody is likely to feel too comfortable on the Le Mans. Those with strong wrists, arms, backs and necks will suffer least but softer specimens will be crying for relief after the first 10 miles of stop-and-go. Rapid, frequent slowing takes a toll on wrists and arms, and this is not eased any by working the Guzzi's stiff throttle springs. High-speed operation is where the Le Mans shines. Its fairing limits your buoyancy and gives protection, and without a lot of sudden fore-aft movements you can pretty well tolerate the clip-ons. The handlebars are not down-up adjustable, as the original 750 Sport's were, so you're stuck with their positioning.

When you want to slide forward for cornering you'll be pleased with the seat's built-in tank pad. In the normal seating position only the bony points of your backside touch the seat, so its narrowness is not significant. The passenger accommodations are no more generous than those provided the pilot. The rear pegs can be utilized by solo riders for a bit of comic relief from whatever hunched-over agony they may be experiencing. The Le Mans is uncompromising in the seating department: it is intended for, and it will only have, those strong of will, back and wrist.

There's a moderate amount of torque-pulsing from the engine, and the pulses are not resolved into the frame like a Ducati's are. You'll just have to accept the minor, low-frequency vibration whenever you're on the throttle - the more you've got the slides open, the higher the pulse amplitude becomes. By and large, the middle-rpm range is most free

from vibration, and though the 1000 may be slightly rougher-running than the 850 was, it still offers a certain rpm-segment that's particularly comfortable. The Le Mans is smoothest at 3500 to 4000 rpm, a range that, in fifth gear, relates nicely to fast highway cruising. Drop the transmission down a gear and you can still cruise legally - in the smooth segment of the engine powerband.

No fewer crowds are drawn by the 1000 than by the 850 Le Mans. And the reason is simple: the bikes look much alike. The main alterations - the fairing and instrumentation - blend into the motorcycle's basic design unobtrusively, and the 1000's car-like dashboard is well integrated with the rest of the machine. Both front and rear fenders are plastic.

Prior to the CX100 you could remove from the Le Mans almost every engine component but the crankshaft's main bearings without taking the engine from its rest. Allegedly you can still accomplish this, but only after the side fairings are removed: each is screwed into place with four easily removable fasteners. Only the spark plugs and oil dipstick, which plugs into a tube on the engine's left side, are easy to reach for service. Every 1800 miles the tappets are due to be checked, and you must remove the side panels to gain access to them. The gas tank must come off to reach the distributor, and checking the front brake fluid level is a tricky proposition. Want to change the oil filter? Remove 14 Allen screws and pull the sump plate off first: the replaceable spin-on filter can then be tucked safely inside.

For some reason, Moto Guzzi felt inclined to scrimp in the headlight department. The standard-issue six-by-four-inch Wagner 60/40 watt sealed-beam headlight is a joke, suitable for dimly lighting manhole-sized portions of the roadway. We felt comfortable riding with this light at no faster than 50 miles per hour on straight roads, 30 mph in moderately sharp corners. A Hella quartz-halogen lamp replacement made a huge and necessary improvement in the Le Mans' dark-of-night capabilities. There's a low-beam flasher switch on the left handlebar, but we'd prefer a high-beam flasher: that would be more effective for signaling slow cars or oncoming traffic. Twin 5/21-watt taillight bulbs rest inside the Guzzi's stylish taillight nacelle.

Most of the control switches take getting used to, though once you're familiar with them they're easy to find and to use. One complaint we would lodge is that the turn signal switch has a light-duty detent that makes over-centering the switch an easy proposition, especially if you're wearing heavy gloves. Unusual indicator lights spread across the lower portions of the Guzzi dashboard, and all are easy to read unless bright sunlight strikes their faces. Notable is the lamp for low fluid level in the rear/front master cylinder.

Both a clock and voltmeter flank the Le Mans' speedometer and tachometer; the voltmeter seems unnecessary since there's an indicator light to warn of the 280-watt generator's failure. The clock works nicely - it's accurate and required no adjustments during our test period.

To allow customers their choice, Berliner Motor Corporation imports the Le Mans with no mirrors attached. The bike is supplied with one mirror intended to be mounted on the fairing. Our test bike was set up with a bar-end mirror instead, a good thing.

The Le Mans' sidestand is a spring-loaded unit that snaps up with authority as soon as weight is removed from it. We learned to deal with this, though it takes some consciousness to locate and use. Some effort also is required to hoist the Guzzi onto its centerstand, and this is mainly a result of the low handlebars and an awkward grab rail on the bike's left side. An adequate tool set which includes enough tools to do most service chores lies in a plastic tray beneath the saddle.

Your first ride on the \$4949 Moto Guzzi Le Mans will convince you it's incredibly effective for fast sport riding. Remarkably, the bike is simple, and this is a real tribute to the cleverness by which it was conceived.

If there's a road you hold dear-to-heart out past the lake and cottonwood trees, if you appreciate craftsmanship, aesthetics and function, you should be drawn as if by magnet to the Moto Guzzi Le Mans. It is one of a special few.

