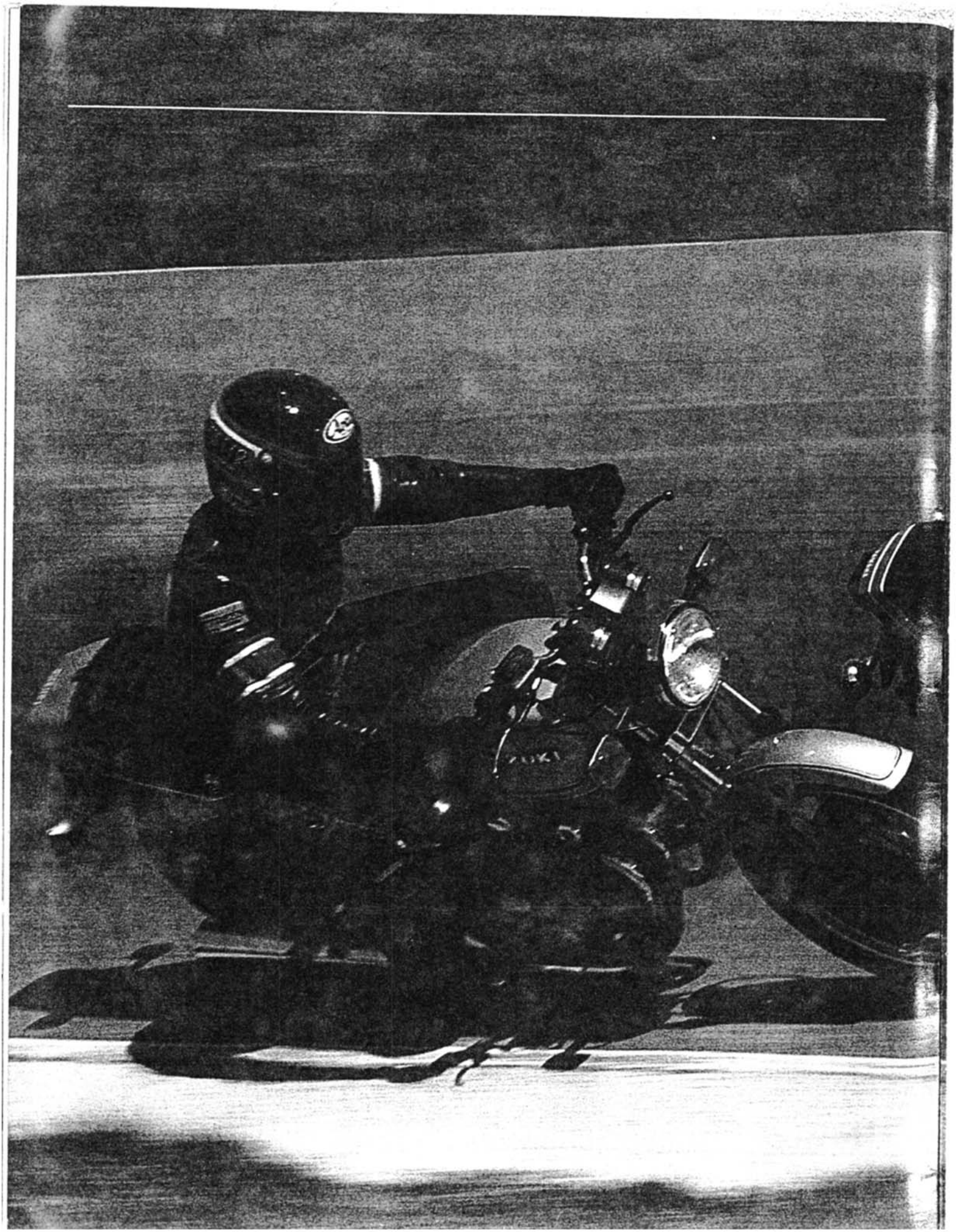


CYCLE CANADA
COMPARISON TEST

SUZUKI GS650 vs YAMAHA XJ650 SECA

Nineteen eighty-one has been a banner year for sporting motorcyclists. After a long period of providing first nothing but custom-styled machines, then nothing but customs and tourers, the major manufacturers seem to have finally realized that there is a sizeable market for bikes designed for the sporting rider, the person who likes to ride fast and have his bike work with him while he's doing it.

# HEAVEN IS A GOOD SPORTING 650

The new crop ranges from the mid-sized—the 550 Yamaha Seca and Kawasaki GPz—to the immense—Kawasaki's GPz1100 and Honda's CB900F. What they have in common is ample horsepower, modest weight, brakes and chassis ranging from good to excellent and a sporting riding position that gets the rider down and into the bike. What some of them still lack to some degree is an innate sense of balance, of integrity, of being completely in harmony with themselves and with the rider.

Two new 650s have that quality, and it makes them a joy to ride. Even better, they both have plenty of power, minimal fat, fine chassis and brakes and decent riding positions. They may well be the smart sporting rider's best bet of the year.

While both bikes are new to Canada this year, the surprise entry of the pair has been available in Europe since the 1980 model year. Yamaha has decided to sell the lovely XJ650 so-called Eurobike here. The machine shares its engine with the 650 Maxim that Cycle Canada tested in the May 1980 issue, and the transmission and shaft drive unit are shared with the Maxim and the 750 Seca we tested in the May 1981 issue.

Resemblance to the chopperesque Maxim stops with the powerplant. The XJ650 Seca, as it will be called here, fairly screams European grand touring in its behavior and appearance. The low bar, rear-sets, flat seat and sleek looks couldn't be more different from the Maxim, boulevardier extraordinaire that it is.

The other machine, the Suzuki GS650, is new for 1981. It comes in three versions: the E-suffix test model which has chain drive, and two shaft-drive versions, called G and GL. The G is intended as the touring bike and the GL is the Low Slinger custom model. While it is new, it isn't the shocker that the Seca is. There have been rumors for several months that Suzuki had something coming in the 650 class, perhaps an uprated 550, so when the bike appeared looking very much like an uprated 550 there was no great surprise.

Running your eye down the specification list finds an amazing number of similarities. Both machines are double overhead camshaft fours using two valves per cylinder and shims for valve clearance adjustment. Both make 64 claimed hp at 9,000 rpm, and both are redlined at 9,500. The Yamaha makes slightly more torque, with 5.5 kg-m compared to 5.2 for the Suzuki, both at 7,500 rpm.

They have the same wheelbase, at 1,435 mm. The trail is the same, at 115 mm, but the Yamaha has slightly less rake with 27.5 degrees compared to the Suzuki's 28.2. The Suzuki is slightly taller and has a bit more static ground clearance. Although the Suzuki's pegs are comfortably rearset, it comes with a high, swept-back bar best suited to use behind fairings. After a few days of riding, we swapped it for a low-rise narrower bar that brought the riding position much more in line with that of the Yamaha (details can be found in a product test on page 96).

The two bikes begged for comparison, and since they're both being touted by the manufacturers as sport bikes, a performance shoot-out seemed in order. We went to a drag strip, to Transport Canada's test oval for top speed runs and to Shannonville Motorsport Park with road racers George Morin and Lang Hindle. We think we've discovered just about everything there is to know about how these bikes perform short of crash testing them.

That's half the story. The other half is *how* the bikes work, what they're like to live with and to ride in normal commuting and touring use. For that we went through our normal testing procedure of using the bikes on a day to day basis on every kind of road from four-lane divided highways to crowded big-city alleys and rough, gravelled country roads.

We ended up with definite conclusions about both machines, but if you're looking for an ultimate winner you won't find it here. In large part it's because neither of these bikes is a loser. They're both so good that any of our testers would happily keep either one. Read on and find out why.

Everyone who rode the two bikes side by side immediately had a conclusion about how they'd perform. The Suzuki would win the drag race, the Yamaha would have a higher top speed and the Suzuki would clean up at the race track. The Suzuki just felt crisper and stronger. And for once, first impressions were right. Mostly.

At the drag strip the bikes ran just the way we expected. The Suzuki dropped into the 12s on its first run and stayed there, running effortlessly in the 12.8 to 12.9 range. That is extremely quick for a 650. Gearing seemed right on; the bike left the line as though it had been catapulted.

The Yamaha was hard work. It wanted to run low 13s, and only two runs dropped into the 12-second bracket. The taller gearing meant that the rider had to use a lot of clutch slip to get rolling; compared to the Suzuki it lost a lot of time off the line, but made it up at the top end.

Final results had the GS650 on top with a best run of 12.733 seconds at 170.7 km/h. The Seca was a blink behind with a 12.889 at 170.2 km/h. The nearly identical terminal speeds compared to the difference in the times accurately reflect where the bikes come on strong—the Suzuki down

At the track, the Suzuki feels crisp, strong and precise; a delight to push to its limit.


Castrol

# 650 HEAVEN

low and the Yamaha up high.

If the Yamaha comes on stronger at the top end, we reasoned, then it must have a higher ultimate speed, so we headed for Montreal and Transport Canada's track and radar gun. Once again, first impressions were correct.

The Yamaha wailed through the radar trap at 199 km/h (123.6 mph if you're not sure how fast that is). The Suzuki trailed at 191 (118.7 mph) to prove our point. Both machines are geared very close to the ideal in terms of using all the available engine power. The Yamaha's theoretical top speed is 203.8 km/h and the Suzuki's 193.2, which means the engineers were realistic in choosing gear ratios.

The final portion of the performance testing took place at Shannonville. It's a 1.76 km piece of flat, twisting pavement that puts a premium on mid-range acceleration, hard braking and ground clearance. It seemed obvious that the Suzuki would walk away from the tall-geared, more softly sprung, lower Yamaha. Wrong.

We asked Canadian road race champion George Morin and Ontario superbike champion Lang Hindle to ride the bikes. They know Shannonville, they ride production-based bikes and they're both very good at getting the most out of a motorcycle whether the bike wants to co-operate or not.

The fastest lap time for the Suzuki was 58.41 seconds, while the fastest for the Yamaha was 58.36. Hindle went slightly faster on the Suzuki, while Morin was a bit quicker on the Yamaha. Averaging the 20 timed laps—10 with each rider—gave the Yamaha a time of 58.93 and the Suzuki 58.98. So the Yamaha, which everyone thought felt slower, was faster. Not by much, but still faster.

It was a surprise to everyone. Despite the similarity in specification, the two machines feel very different on the track. The Suzuki gives the feeling of being lighter, a bit more nimble, more willing to turn into a corner, easier to move around and change lines. It definitely has stronger brakes, and seems to accelerate harder in the mid-range.

The Yamaha feels solid. In high-speed sweepers and at top speed it's steadier than the Suzuki. It feels as though it's tracking through a corner on a rail, while the Suzuki is a bit nervous, as though it would be just as happy moving around to try a different line. The Seca's shocks start going away after six or seven hard laps, though, while the Suzuki's lasted longer.

The softer suspension of the Yamaha caused the bike to bob around a little more than did the GS, but it looked worse to bystanders than it felt to the rider. Even moving around on the suspension, it never felt as though it wanted to get off its line.

So why was it faster? There's a little more torque, so if the engine is really on the boil the Yamaha might pull harder than the Suzuki. It has more ground clearance when banked over; despite the lower static ground clearance, every item that might drag is tucked up so high hardly anything ever touches. The Suzuki is already very good here; the Yamaha is exceptional.

It's easy to lose perspective when you talk about track times. The Yamaha was ultimately a bit faster, true, but five one-hundredths of a second isn't much. Changing tires alone would transform each bike. For comparison, the lap record at Shannonville for a 750 production bike is 55.27, three seconds faster than the times we got. That's for a stock Honda CB750F with sticky race-compound tires. For all intents and purposes, our results show that the two bikes are almost a perfect match-up.

The Suzuki comes off the line a bit harder, the Yamaha has a higher top end, and they'll both go around corners like you wouldn't believe. They'll get to their destination at about the same time.

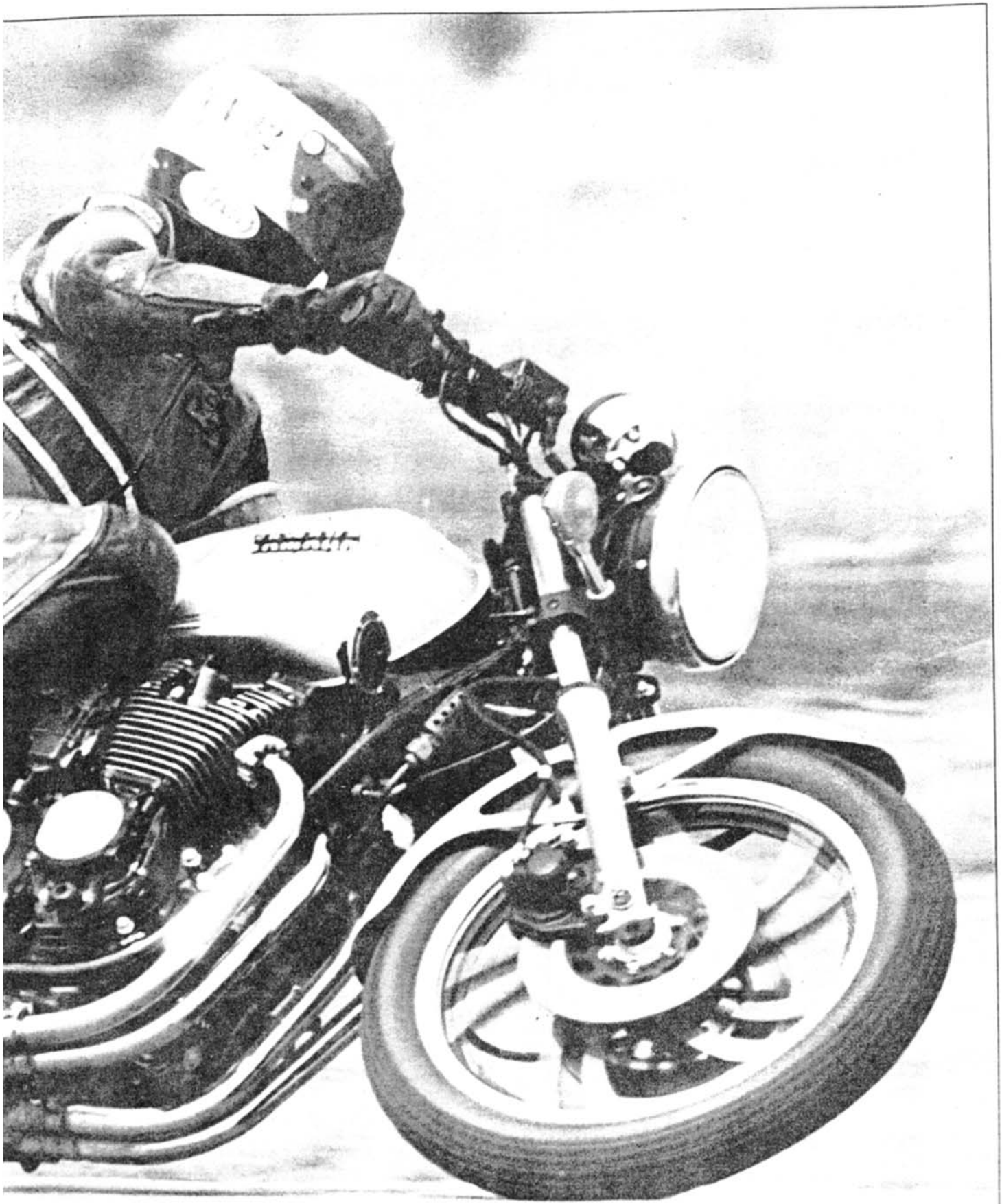
Riding on the street isn't much like riding on the track, but the personalities of the two bikes don't change. The Suzuki feels quick, impatient; it explodes through holes in traffic, wails up on-ramps with a racer-like moan from the engine, darts into corners and stops right now when the brakes are applied. The Yamaha is more relaxed; it turns lower rpm for a given road speed, slices easily through traffic, arcs gently and accurately through corners.

The two things that made the Yamaha more popular than the Suzuki for street riding were the gearing and the seating position. Both bikes have good seats, both have similar levels of vibration and with the lower bar fitted to the Suzuki, both have reasonable seating positions for riding on the highway. But the Yamaha is just a bit better.

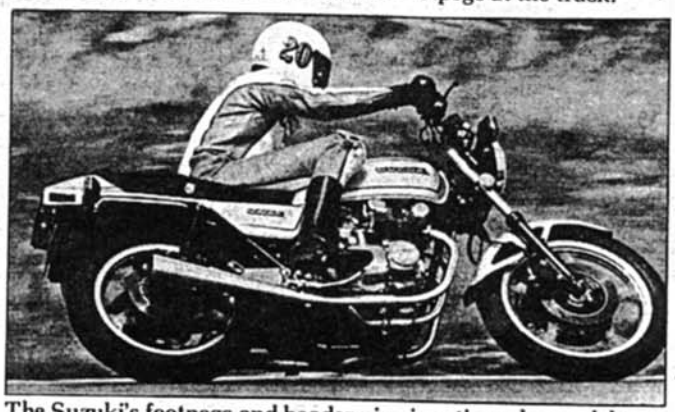
The suspension is a little more supple, for a start. That's surprising; the Suzuki has slightly more rear wheel travel, 100 mm vs 93, and uses fancy new shock absorbers while the Yamaha's are plain Janes without trick features. The Seca has a five-position preload setting, and that's it.

The Suzuki has five preload settings, as well, and that looks like the extent of its adjustability. But there are two stages of damping force built into the shock. On mild bumps when little of the shock's travel is used, the softer system is in effect. As more of the shock travel is

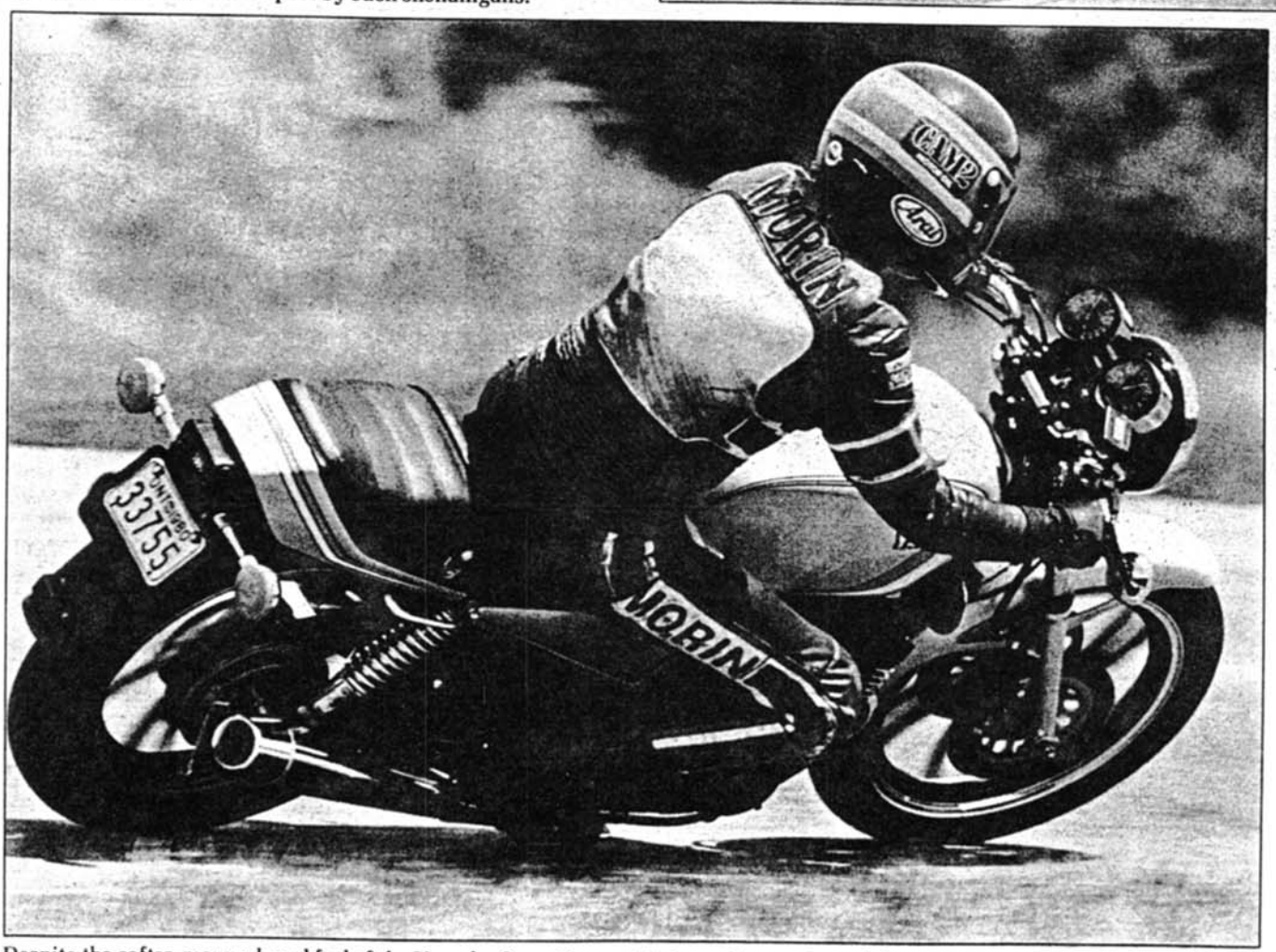
The Yamaha's high-speed stability makes it a treat to ride in fast, sweeping corners.



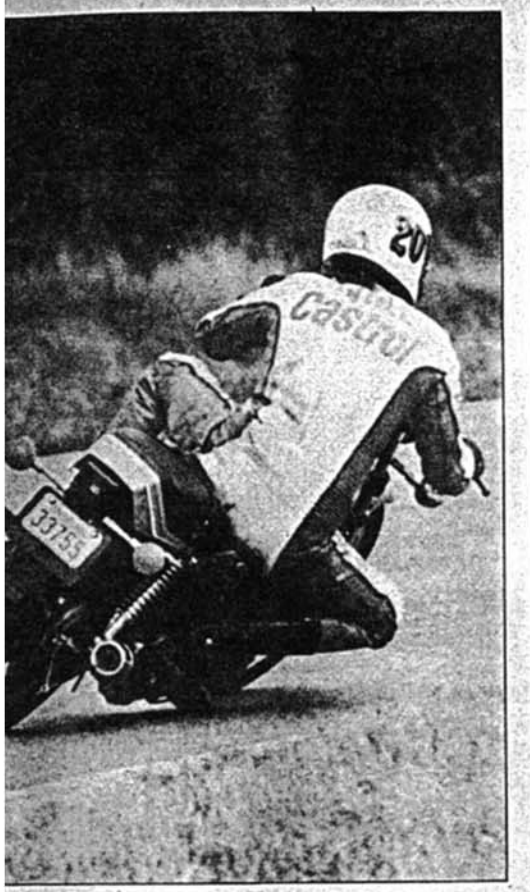
Despite slightly less static ground clearance, the Seca grounded nothing but the ends of the footpegs at the track.

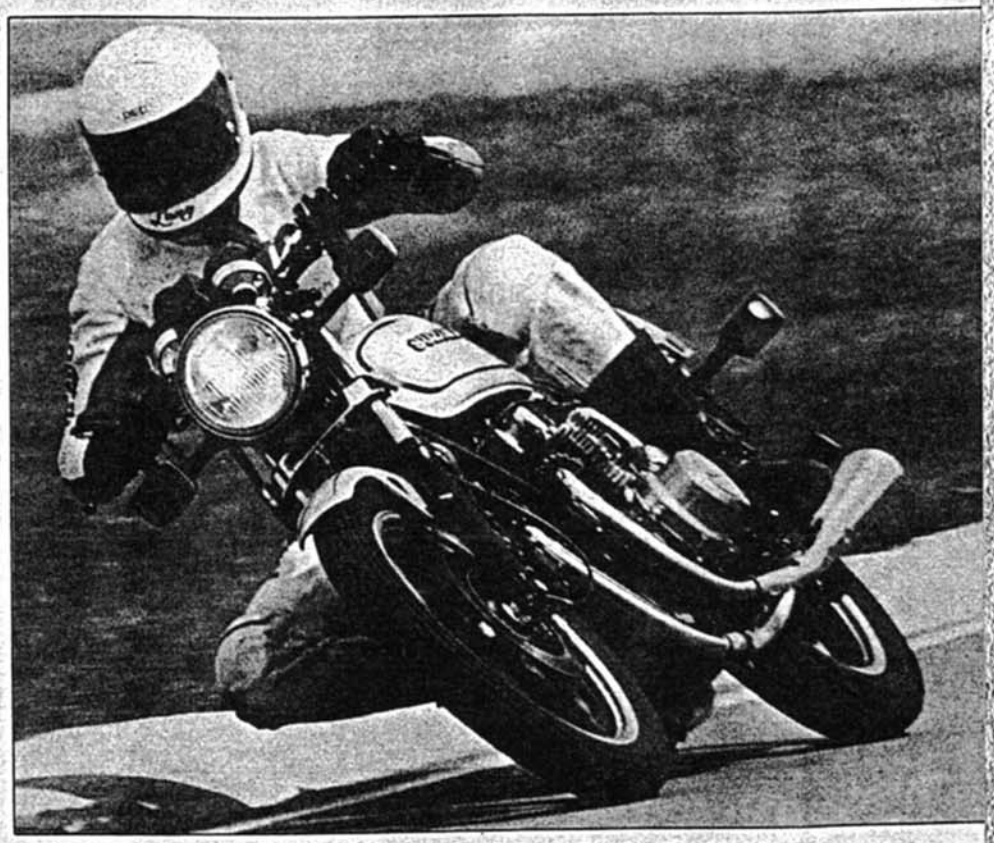


The Suzuki's footpegs and header pipe junctions dragged, but the tires didn't seem to be upset by such shenanigans.

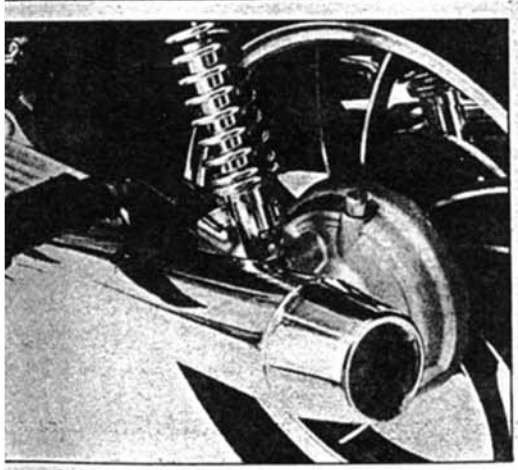




Despite the softer, more relaxed feel of the Yamaha Seca, George Morin set fastest time of the race track session with it.

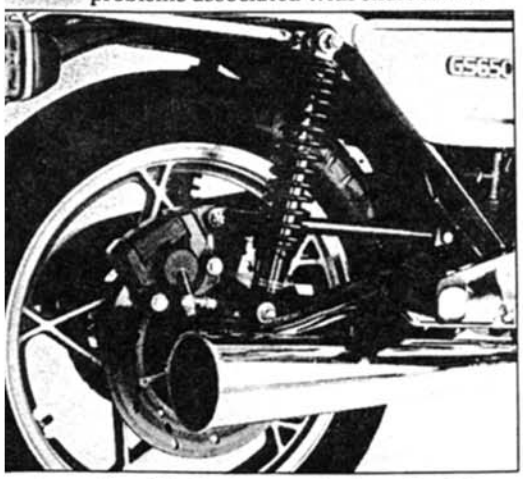




Both racers found the Suzuki a little quicker to respond to steering inputs.



Seca proves that Yamaha has tamed the problems associated with shaft drives.



Suzuki's dual-range shocks adjust damping according to force of movement.

# 650 HEAVEN

used—for example, if the bike hits a big road bump or is thrown down hard into a corner—the secondary circuit takes over. It's stiffer and is intended to add control to the bike in extreme situations.

They work fine and don't seem to fade as quickly as the Yamaha units do. But for stockers the Yamaha's provide adequate control, to our minds, and definitely provide a softer ride.

The other comfort factor, the seating position, made several riders start screaming that every bike on the road should be just like the Seca. The narrow, low bar is perfectly angled to accept hands and wrists without requiring strange bends, the body is angled slightly forward to balance the wind at speed and the weight of the rider is split between hands, backside and feet on the rear-set pegs. We think it's ideal, and think further that anyone who rode the bike at any speed above 60 km/h would agree instantly. It makes a big difference on a long trip.

The slightly higher gearing of the Yamaha makes it feel more relaxed at a given road speed. At 100 km/h the Suzuki is turning 4,917 rpm and the Yamaha 4,642. Three hundred revs may not sound like a lot, but it's enough to make the engine run just a bit quieter, a bit smoother. You can feel it.

Both engines are marvels of smoothness and power to start with. Rated at an identical 64 hp, both bikes will pull from around 4,000 rpm with the action coming on strong about 6,500. The Suzuki feels a bit more willing, but we attribute that to the gearing. The powerplants are almost interchangeable.

Both engines are more fuel-efficient than our consumption figures would indicate. The numbers we have include the days at the various tracks and a lot of high-rpm back road cruising. We expect that 18 to 20 km/L would be within the reach of most owners rather than the mid-15s we got.

The Suzuki has an interesting new combustion chamber. Called twin-dome combustion, it consists of two hemispheres machined into the head around each valve pocket and a large squish band overhanging the cylinder bore. These features are intended to promote swirl of the gas charge in the cylinder to encourage better combustion, which in turn should create more power and better fuel efficiency. Specific power figures indicate that the Suzuki isn't stressed quite as highly as is the Yamaha for its identical power output, but then it's 20 cc bigger.

The Yamaha's transmission works better than the Suzuki's. Everyone found the Suzuki box a little stiff and awkward at times; neutral often proved elusive and missed shifts were a common complaint. The Yamaha, by comparison, was a gem of unobtrusive servility. The clutches on both machines are top-notch. Neither complained during or after all the track testing, and both were easy to modulate.

As on the track, the Suzuki's brakes are outstanding on the street. The Yamaha

# SPECIFICATIONS
# Suzuki GS650

MODEL ..... 1981 Suzuki GS650EX
TEST DISTANCE ..... 3,363 km
PRICE ..... $3,299

**ENGINE**
TYPE ... Four-cylinder four-stroke with chain-driven DOHC, two valves per cylinder
DISPLACEMENT ..... 673 cc
BORE AND STROKE ..... 62 x 55.8 mm
COMPRESSION RATIO ..... 9.4:1
HORSEPOWER ..... 64 at 9,000 rpm (claimed)
TORQUE ..... 5.2 kg-m at 7,500 rpm (claimed)
CARBURETION ..... Four Mikuni BS32SS
STARTER ..... Electric only
OIL CAPACITY ..... 2.4 litres, wet sump

**ELECTRICAL**
IGNITION TYPE ..... Transistorized
GENERATOR OUTPUT ..... N.A.
BATTERY CAPACITY ..... 12 volts, 12 amp-hours
HEADLIGHT ..... 60/55 watts

**TRANSMISSION**
TYPE ..... Five-speed constant mesh, wet clutch
PRIMARY DRIVE ..... Gear, 1.977:1
INTERNAL RATIOS .... (1) 2.750, (2) 1.872, (3) 1.368, (4) 1.142, (5) 1.000
FINAL DRIVE ..... No. 530 chain, 3.000:1

**CALCULATED DATA**
WEIGHT/POWER RATIO ..... 3.17 kg/hp
SPECIFIC OUTPUT ..... 95 hp/L
PISTON SPEED AT REDLINE ..... 17.6 m/sec at 9,500 rpm
RPM AT 100 KM/H ..... 4,9
MAXIMUM SPEEDS IN GEARS .. (1) 70.3, (2) 103. (3) 141.2, (4) 169.1, (5) 193.2 km

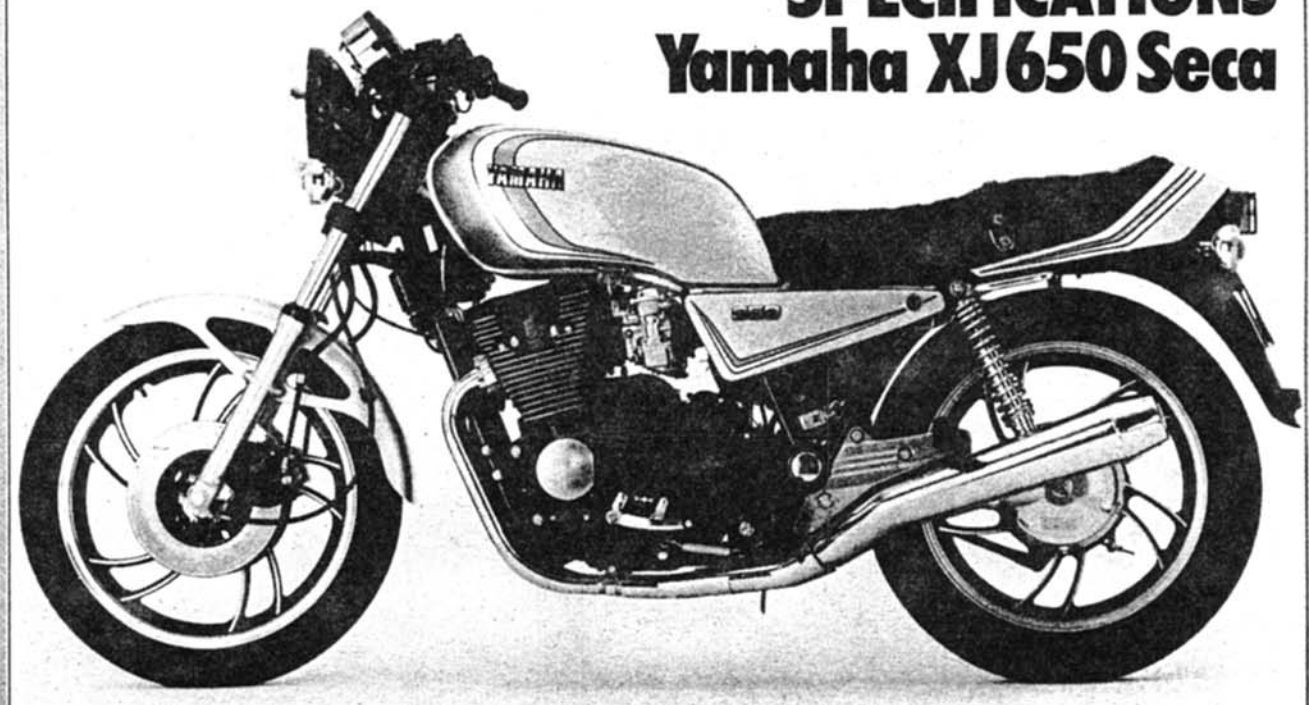
**PERFORMANCE**
OBSERVED TOP SPEED ..... 191 km
QUARTER MILE ..... 12.73 seconds at 170.7 km

**FUEL**
CAPACITY ..... 16 litres including reser
RESERVE CAPACITY ..... 4.5 litr
CONSUMPTION ..... 15.7 km/L (6.36 L/100 kr
RANGE ..... Total 251 km, reserve 70.6 k

**CHASSIS**
WHEELBASE ..... 1,435 m
RAKE/TRAIL ..... 28.2 degrees/115 m
SUSPENSION .... Telescopic front fork with 36 m diameter tubes and 150 mm travel, re swingarm with 100 mm travel using du spring/dampers with automatic two-sta damping and five preload adjustmen
BRAKES ..... Double front slotted discs 270 m diameter, single rear slotted disc 280 m diamet
TIRES ..... Dunlop, F8 3.25H19 front an K127 3.75H18 re
DRY WEIGHT ..... 203 k
LOAD CAPACITY ..... 217 k
HANDLEBAR WIDTH .. 715 mm as tested, 740 stoc
SEAT HEIGHT ..... 790 mm (with 60 kg ride
GROUND CLEARANCE ... 175 mm (with 60 kg ride

Distributed by Suzuki Canada Inc., 155 St. Regis Cr, Downsview, Ont., M3J 1Y6. (416) 630-4100.

# SPECIFICATIONS
# Yamaha XJ650 Seca



MODEL ..... 1982 Yamaha XJ650 Seca
TEST DISTANCE ..... 2,622 km
PRICE ..... approximately $3,600

**ENGINE**
TYPE ...Four-cylinder four-stroke with chain-driven DOHC, two valves per cylinder
DISPLACEMENT ..... 653 cc
BORE AND STROKE ..... 63 x 52.4 mm
COMPRESSION RATIO ..... 9.5:1
HORSEPOWER ..... 64 at 9,000 rpm (claimed)
TORQUE ..... 5.5 kg-m at 7,500 rpm (claimed)
CARBURETION ..... Four Hitachi HSC32
STARTER ..... Electric only
OIL CAPACITY ..... 3.5 litres

**ELECTRICAL**
IGNITION TYPE ..... Transistorized breakerless
GENERATOR OUTPUT ..... N.A.
BATTERY CAPACITY ..... 12 volts, 12 amp-hours
HEADLIGHT ..... 60/55 watts

**TRANSMISSION**
TYPE ..... Five-speed constant mesh, wet clutch
PRIMARY DRIVE ..... Gear, 1.672:1
INTERNAL RATIOS .... (1) 2.187, (2) 1.500, (3) 1.153 (4) 0.933 (5) 0.812
FINAL DRIVE ..... Shaft, 4.1795:1

**CALCULATED DATA**
WEIGHT/POWER RATIO ..... 3.37 kg/hp
SPECIFIC OUTPUT ..... 98 hp/L
PISTON SPEED AT REDLINE ..... 16.6 m/sec at 9,500 rpm
RPM AT 100 KM/H ..... 4,642
MAXIMUM SPEEDS IN GEARS .. (1) 75.7, (2) 110.3, (3) 143.5, (4) 177.4, (5) 203.8 km/h

**PERFORMANCE**
OBSERVED TOP SPEED ..... 199 km/h
QUARTER MILE ..... 12.89 seconds at 170.2 km/h

**FUEL**
CAPACITY ..... 19.5 litres including reserve
RESERVE CAPACITY ..... 3.8 litres
CONSUMPTION ..... 15.1 km/L (6.62 L/100 km)
RANGE ..... Total 294 km, reserve 57.4 km

**CHASSIS**
WHEELBASE ..... 1,435 mm
RAKE/TRAIL ..... 27.5 degrees/115 mm
SUSPENSION .... Telescopic front fork with 36 mm tubes and 150 mm travel, rear swingarm with 93 mm travel using dual conventional spring/dampers adjustable five ways for preload
BRAKES ..... Double front discs 298 mm diameter, sls rear drum 200 x 40 mm
TIRES ..... Bridgestone Mag Mopus, 3.25H19 L303 front, 120/90-18 65H S714 rear
DRY WEIGHT ..... 206 kg
LOAD CAPACITY ..... 227 kg
HANDLEBAR WIDTH ..... 680 mm
SEAT HEIGHT ..... 760 mm (with 60 kg rider)
GROUND CLEARANCE ... 145 mm (with 60 kg rider)

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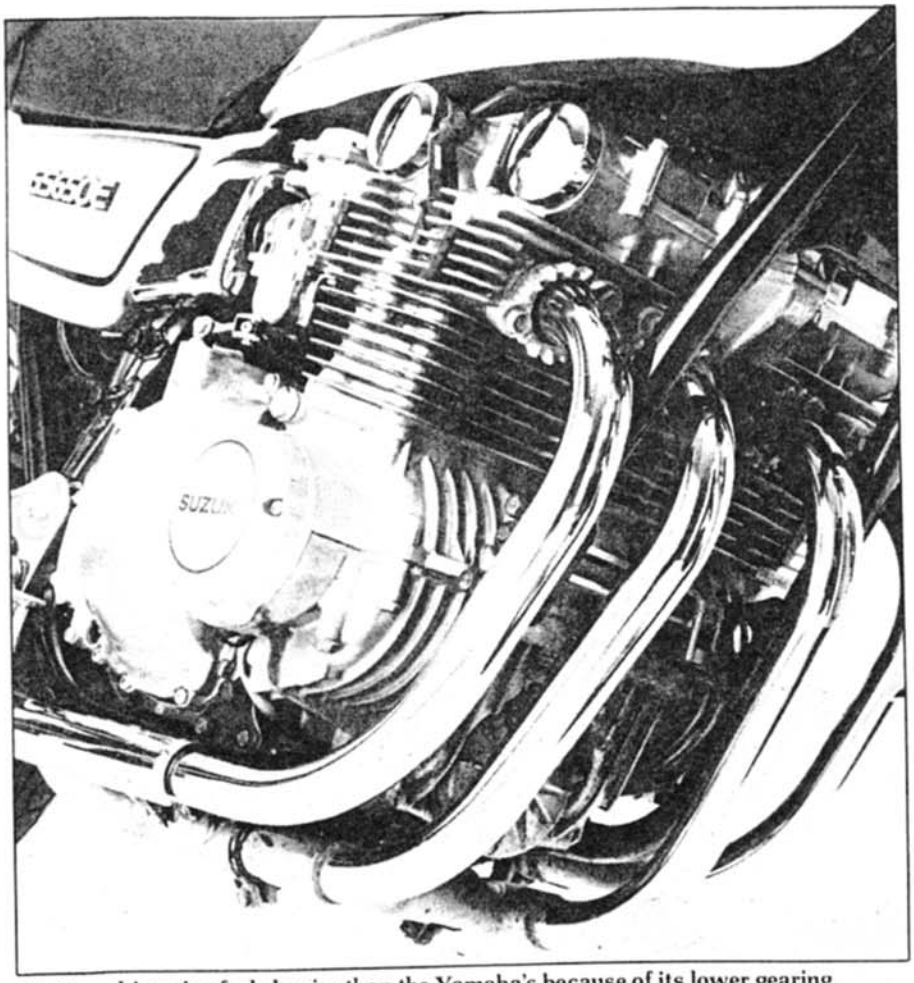
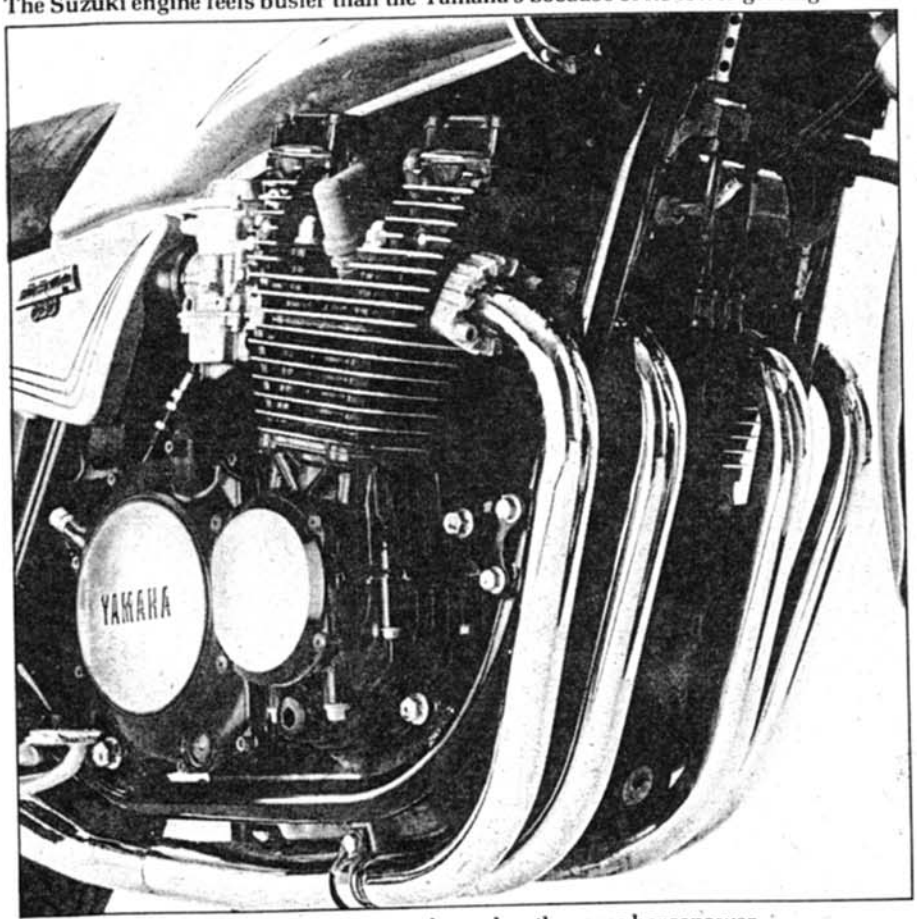



The Suzuki engine feels busier than the Yamaha's because of its lower gearing.




From 20 cc less displacement the Yamaha makes the same horsepower.

# 650 HEAVEN

brakes are pretty good, but the GS has as good a set of stoppers as any other multi we've tried this year. Only the RD350 will stop harder in our experience of 1981s. Not only strong, they're easy to control. The rear disc never tries to lock up and you can keep the front tire howling on the edge of traction without fear of overdoing it. The brakes are a delight to use.

Controls on both bikes worked well. There were the usual complaints about the Yamaha's self-cancelling signals being hard to use manually; some like them and some don't. There was unanimous disapproval of the Suzuki's starter interlock, which requires that you pull the clutch before the starter will work. It's a pain at the best of times, and a genuine aggravation when you have to fiddle with the touchy choke at the same time. The Yamaha, by the way, uses the same excellent handlebar-mounted choke fitted to several of the company's other new machines.

Most riders preferred the looks of the Yamaha, although both are clean, crisp designs that should wear well. The Seca's black engine contributes to a tough, compact appearance and the bike's shapes work together into a graceful sweep from front to rear.

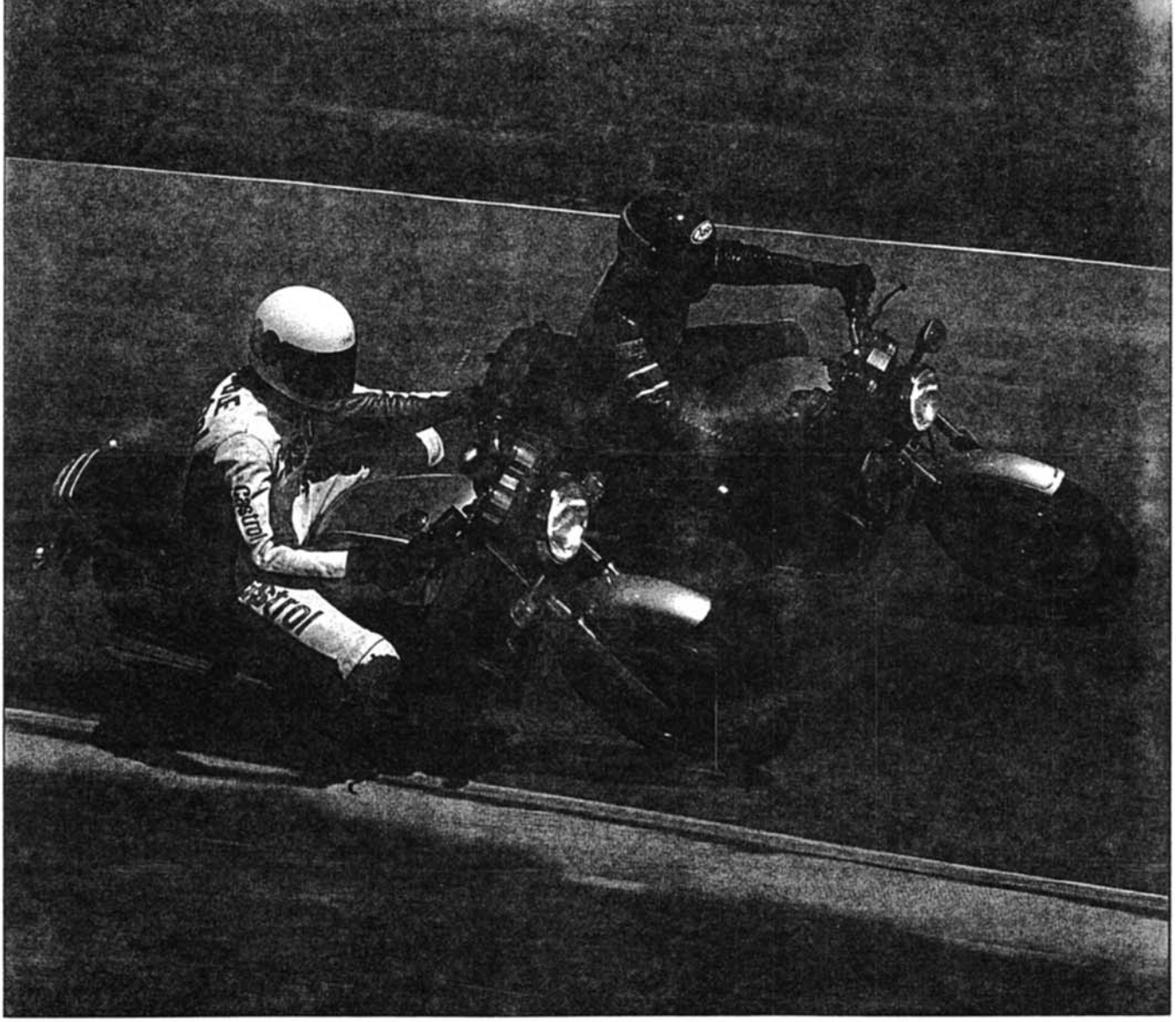
Nothing wrong with the Suzuki, but it's indistinguishable from many other multis on the road. Riders noticed the Yamaha immediately. Both bikes were finished in silver with neat blue pinstriping, so it wasn't the paint job that did it.

As is usual with most machines these days, we had no reliability problems with either bike. The Suzuki did blow one fuse but there was a spare in the box and whatever the problem was, it never recurred. The Suzuki also began blowing a bit of oil mist from the head gasket after the session at Shannonville, but it was minor and seemed to stop once the bike was used at more normal levels of riding.

Tires on both bikes weren't bad for original equipment rubber, at least in the dry. In the wet, both the Suzuki's Dunlops and the Yamaha's Mag Mopus Bridgestones were downright spooky. One rider said he wouldn't change either set unless he were racing; another said he'd dump both sets right away; most found them adequate. In the dry, the tires on both bikes hang on with solid bits of the chassis and exhaust system dragging.

The Dunlops on the Suzuki felt just a bit better in ultimate performance. The bike could be persuaded to slide on the race track without scaring the rider into looking for a soft place to land, while the Bridgestones tended to let go more suddenly and completely.

One big difference between the two bikes is the final drive, of course. The Yamaha uses the same shaft drive assembly, even to the same gearing, that the 750 Seca has. The Suzuki, by contrast, has




Takasago 530 O-ring chain installed. We didn't notice any jacking effect from the Seca's driveshaft, even at the race track. Like its bigger brother, it seems to have the phenomenon well under control. You'd expect the Yamaha to be quite a bit heavier because of the drive shaft and assorted gears, but it only weighs three kilos more than the Suzuki.

The difference to the owner, then, lies mainly in the fact that the Yamaha will never need a new chain, never need to be lubed and will never need to have lubricant cleaned off the rear end. We doubt that the owner will ever notice any practical difference in riding, other than the feel caused by the drive ratios.

The shaft drive convenience, the somewhat more supple ride, the superior stability and better seating position of the Yamaha made it the general favorite with most of our test riders. Even the one most adamantly in favor of the Suzuki's brand of damn-the-torpedoes attitude toward performance finally admitted that the Yamaha was simply more comfortable, without giving anything away in performance capabilities.

## NO LOSERS

**Both bikes can tour or scratch with the best, but the Suzuki feels better on racer road, the Yamaha more at home on the open road.**

Does that make it the winner of our comparison? It won two out of the three performance categories—albeit just barely in one case—and for general street running around it was favored by everyone. It makes the Yamaha the winner if you're interested in grand touring as opposed to flat-out, throttle-to-the-stops sporting riding. It's sort of like preferring a Mercedes 450SL sports car to a Porsche; they'll do much the same thing, but with a different attitude.

The Suzuki, on the other hand, is the overwhelming favorite if you want to go fast first of all, and incidentally use the bike for everything else from touring to commuting. It feels crisper, more nimble; the gearing makes the engine respond more quickly and immediately; the machine seems to anticipate what the rider wants to do. It's definitely more Porsche-like than Mercedes-like.

So you pay your money and take your choice. We're not copping out on picking a winner. As we said, most of us would buy the Yamaha 650 Seca if we were in the market. But that reflects our personal preferences rather than any innate superiority of the machine in an overall sense. Any of us would be perfectly happy to live with either machine. □

PHOTOGRAPHY BY BILL PETRO AND JOHN WILD