

CYCLE GUIDE

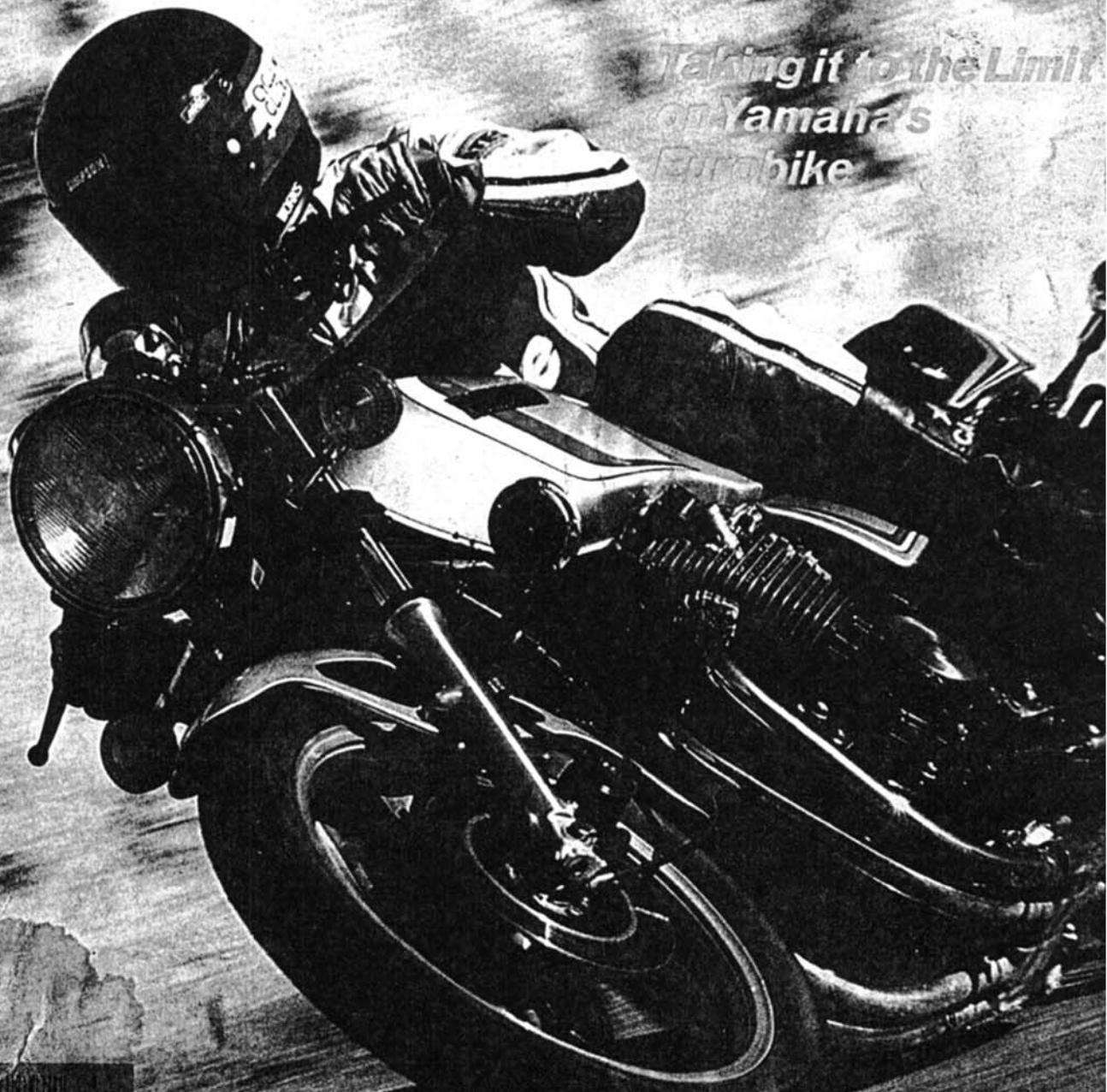
1981 HONDA CB750C:
CORNER IN STYLE

TAMING THE 90-MPH
PE400 TRAILBUSTER

NOVEMBER 1980 \$1.25

THE UNTOUCHABLE: XJ650

Taking it to the Limit
on Yamaha's
Eurobike



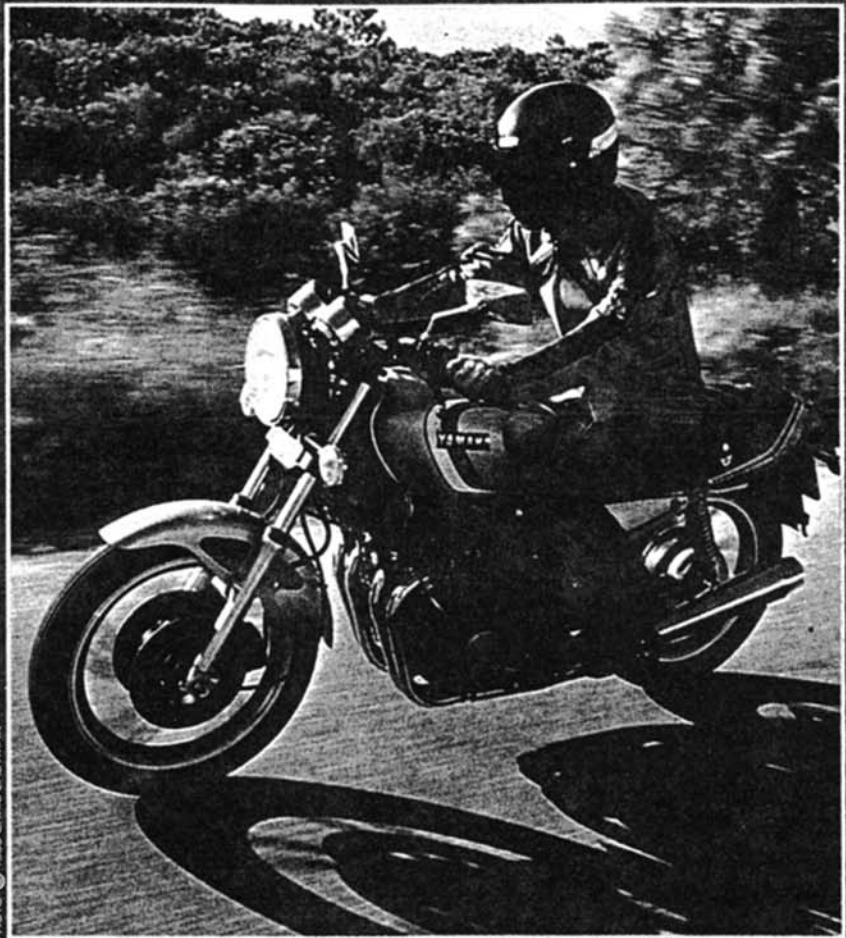


PHOTO © 1980 CHRIS EASTMAN

Yamaha XJ650

Here on an international passport, proof that all the crypto-café snobbery about European bikes is plain bull—the XJ650, the best GT ride on both sides of The Pond.

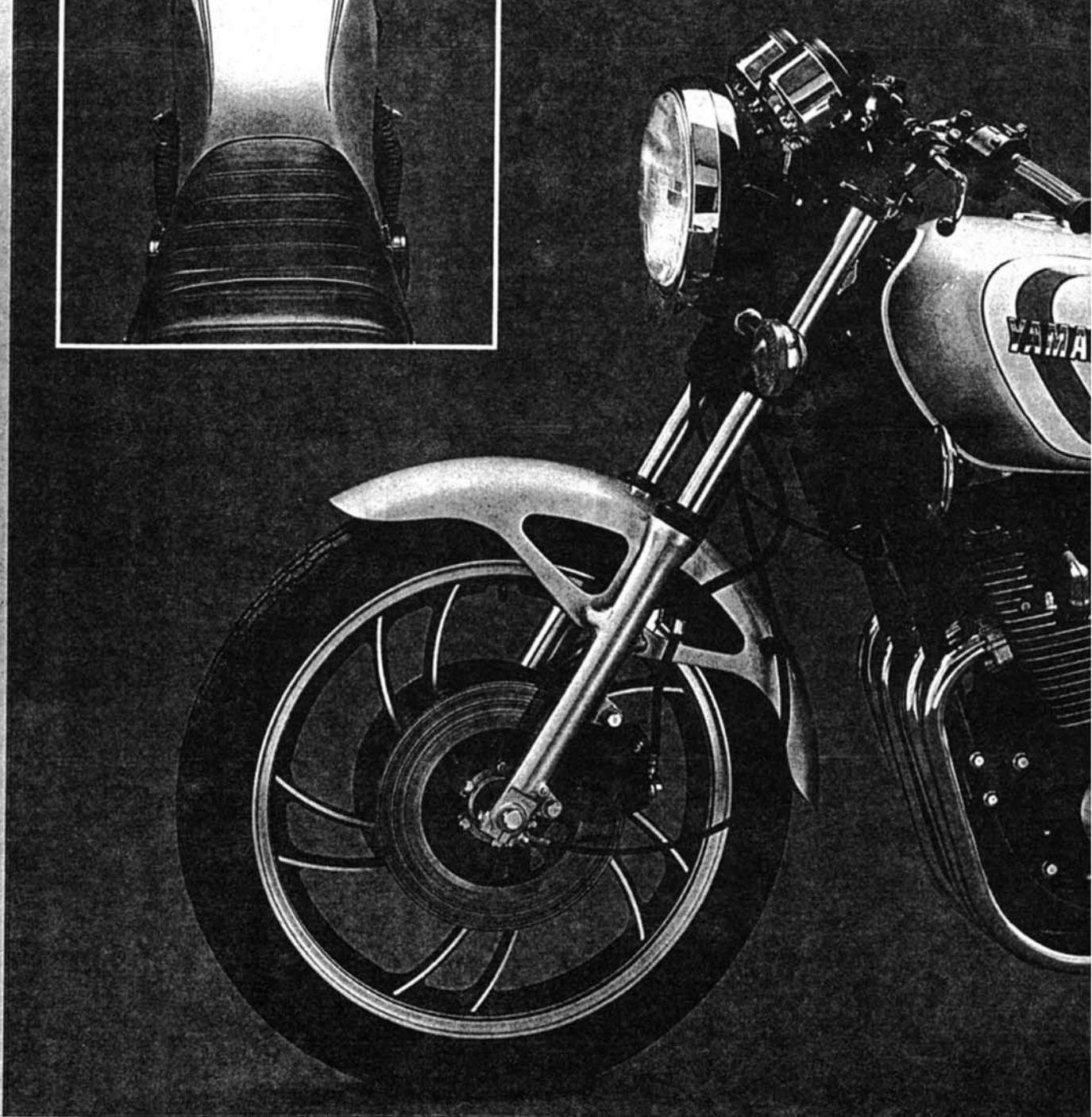
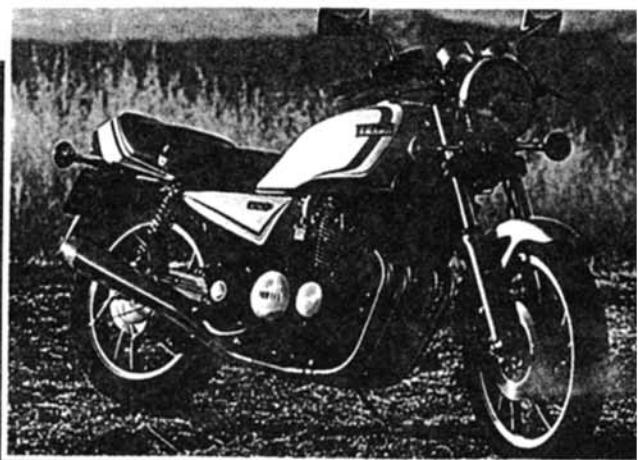
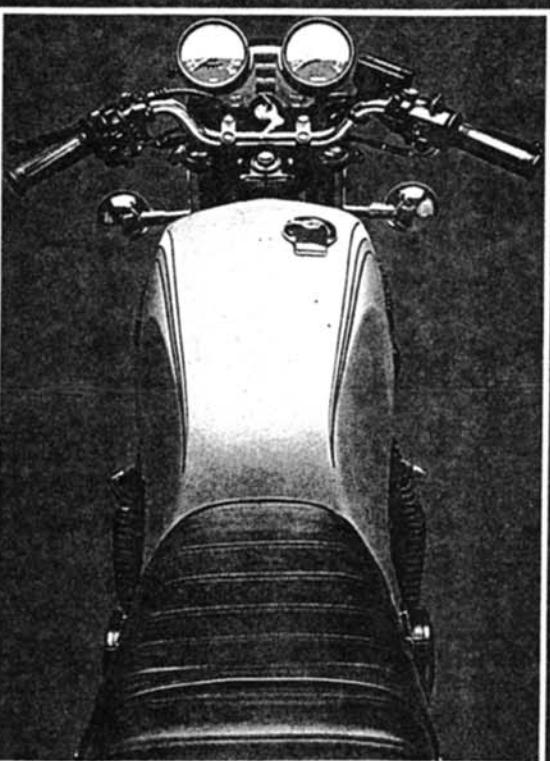
BY STEVE THOMPSON

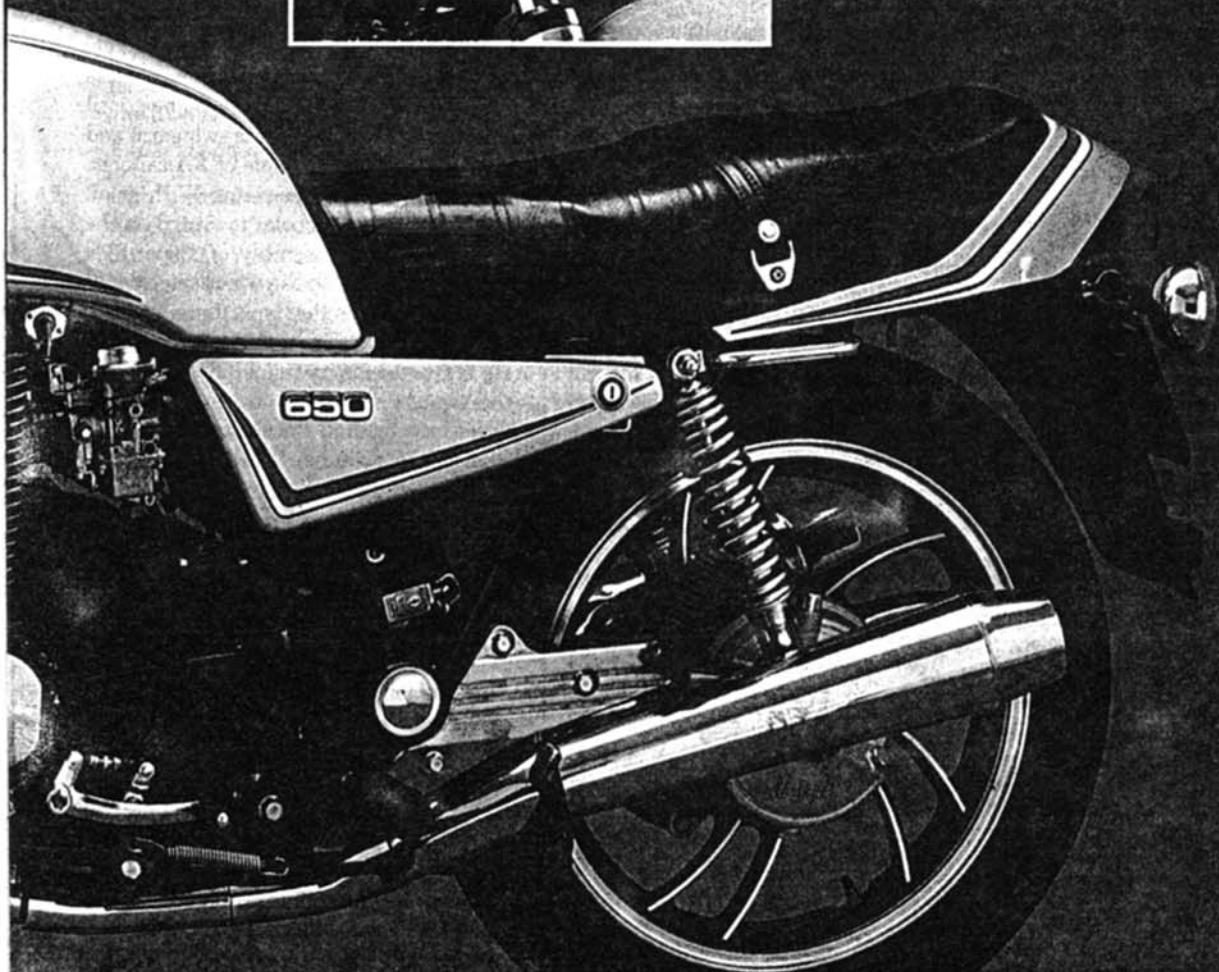
There's a hole in the American motorcycle market, a blank space where one specific kind of street bike ought to be. We've got Specials of every description, rugged multi-role bikes, touring bikes, café racers, commuter bikes, mopeds, nopedes and hyperbikes. Unless you're one of the small but growing group of people who can't find the machinery that should fill that blank spot, you probably aren't even aware that a void exists. But if you are a member of that disappointed fraternity, you know well enough what isn't there—and it looks just like the silver-and-blue Yamaha XJ650 Eurobike you see here.

Don't consider that mere hyperbole. If

you're one of those frustrated riders, until now your only options have been a few Eurobikes: BMWs, Moto Guzzis and Ducatis, maybe. But for riders weaned on sophisticated Japanese engine technology, these splendid but aging examples of the genre simply didn't fully satisfy. What we're talking about here is a motorcycle of refinement, of grace at speed; indeed, built for speed. A motorcycle to be used with judgment by an educated rider in all conditions, but especially in the gnarliest of twisties. This is a genre of mostly solo riding, but it isn't Moto Café, where garish cosmetics and racer aspirations deform the vehicle. No back-breaking clip-ons need

Continued





Continued

The Right Motorcycle

The Yamaha XJ650 isn't just a great motorcycle; it's the best American bike your Pounds, Francs, Lira or Deutschmarks can buy. Yamaha might not have any immediate plans to market it in the U.S., but the Euro-XJ's performance profile perfectly suits the riding requirements of this country, no matter how European the classic styling, low handlebar and rearset footpegs may look to you.

The reason lies in the peculiar geography of this country. You see, sport bikes capable of feathering the furthest reaches of their tire treads are fine in theory, but in America the playgrounds necessary for such antics usually lie at the end of long, upright rides on freeways and rural roads. That's why high-strung, crypto-café bikes have never been popular here. When it's possible to ride 200 miles just for fun, comfort becomes of prime importance.

This landscape of long distances and straight roads has led many motorcycle manufacturers to believe that bikes configured for the U.S.A. should feature fiddle-free shaft drive, provide flexible mid-range engine performance and, above all, pamper the rider. What these same manufacturers do not understand, however, is that the same performance parameters can and should be applied to sport bikes.

The Euro-XJ is the perfect example of American priorities integrated into a sporting motorcycle. Sure, the XJ can thrill you when it's heeled over—but it's also comfortable between the corners of racer road. It's one of the few motorcycles we have experienced that makes the end of a 400-mile ride as much fun as the beginning.

Ironically, the enthusiasm for laid-back, American-style customs makes the sale of

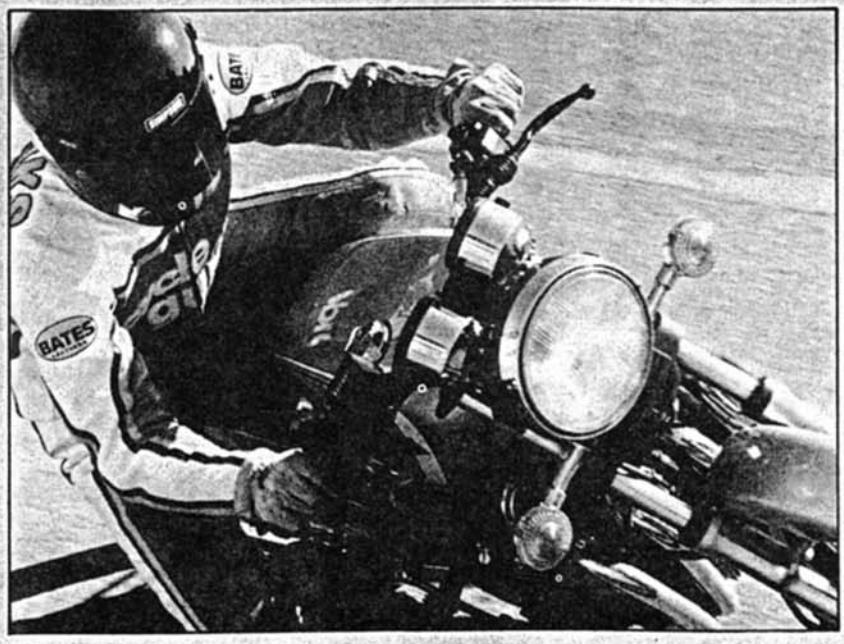
such a bike sport in this country more economically viable. That's because the great body of riders now has been polarized between upright cruisers and leaned-over crazies. There's little room for the compromise bikes of five years ago that attempted to combine racy looks with mushy suspensions and upright riding positions. Such a bike appeals to no one these days.

It makes sense, then, to tailor sport bikes to their true constituency, just as it makes sense to build touring bikes for tourers and custom bikes for custom guys. It can be argued that the people likely to vote with their wallets for such a motorcycle inhabit the fringes of the continent rather than the heartland, but as the sales figures of the Honda CB750F attest, their numbers are substantial nonetheless.

At the short hairs of this question of American sport bikes is this: the U.S.A. needs the Euro-XJ650. It's the sort of go-fast bike Americans will buy because of its shaft drive, resilient suspension, smooth, fuel-efficient engine and comfortable riding position. We're not talking about a motorcycle like this bike; we're talking about precisely this bike.

Here at CYCLE GUIDE, we are convinced the Yamaha XJ650 Eurobike is at the leading edge of a new generation of American sporting motorcycles. It's the right bike at the right time. We're so convinced, in fact, that we're willing to stand up on a soapbox and say so. If you want to climb up on the soapbox with us, send a card or letter to CYCLE GUIDE, 1440 West Walnut Street, Compton, California 90220. We'd like to know if you think the XJ650 Eurobike is as good as we think it is.

—Michael Jordan



apply here, nor should hand-grenade motors, harsh suspensions or crude technology. This is a different kind of motorcycle, one in which comfort plays a role as important as speed. We should call bikes like this "GTs" for Grand Touring, meant to swallow long stretches of winding roads with both comfort and speed. This is the sort of bike missing from the showrooms of America. Hence the instant allure of the XJ650 Yamaha sells in Europe.

Though it is built on the same chassis as the Made-for-America Maxim I, the Euro-650 fulfills its GT-role with telltale accoutrements sure to warm the hearts of those of you yearning for a Japanese hi-tech BMW. A massive 8-inch halogen headlight dominates the front end, controlled by a switch that not only gives you the option of low- and high-beam but a special dim beam for city riding as well. There's also a rocker switch that fires up the high-beam whenever you want to alert the four-wheel slugs ahead to your overtaking burn. Meanwhile, the side- and centerstands are shrewdly pivoted and located to provide maximum ground clearance. And to this end, the exhaust plumbing is routed far inboard under the engine, until the pipes curve out near the swingarm and aim rearward like a couple of AA cannons with 30-degree reverse cones. With small touches like the oil cooler mounted on the downtubes, this assembly of visual aids speaks eloquently to the American rider in search of the bike that isn't there.

Still, the linchpin of this bike's appealing GT nature is its riding position. First, the swoopy 5.2-gallon fuel tank arches down into tapered knee notches just in front of the plain bench seat. The seat itself is covered in a slightly loose fine-grain hide of the rare Nauga. The folding rearset footpegs are located four inches aft of the Maxim's footpeg mountings, near the swingarm where God and generations of British race-bike designers intended them to be. The gearshift linkage, which features a unique design with a remote link in front of the shift shaft, uses rod-ends throughout to minimize slop. The handlebar is nothing short of exquisite, low and with little rise and pullback to be sure, but with enough drop to ease the burden on wrists. All together, it is a riding position you can settle into for hundreds of miles. The riding position alone makes you well disposed to this machine even without riding it.

Such bias is unnecessary. The Euro-650 earns your admiration on its own merits. This motorcycle, sharing as it does the key elements of the Maxim I (see CG, June 1980 for the full Maxim test), also shares its strong points, which begin with a lusty,



The GT riding style, the magic mean between braced and crouched

Enduring for distance without the need for superbike athletics.

sophisticated engine and a strong, well-designed frame. To turn the Maxim into the Euro-650, Yamaha had to make few changes. The engine, for example, is identical except for a slight increase in the jet sizes of the Hitachi carburetors (typified by the main jet going from a 40 to a 45), a reprofiled inlet cam that produces four degrees more duration and 0.3mm more lift than the Maxim's, and deletion of EPA-pleasing crankcase pressurization. In concert with a less-restrictive exhaust system, the engine is tuned to produce a few more ponies at the high rpm Yamaha expects the Eurorider to use. The fact that our specifications page doesn't reflect this is a function only of the weariness of the test engine, which was subjected to something like a thousand kilometers of racetrack testing before it reached our hands.

The only alteration to the frame geometry required to turn Boulevard Bomber Maxim into a Euro-GT was a slight steepening of the steering head, changing rake from the Maxim's 29.0 degrees to 27.5 degrees. Likewise, the leading-axle fork has been replaced with a straight-leg unit using softer initial springing, less preload and more rebound damping than the Maxim's. The cast, spiral-spoke front wheel is common to both bikes, as is the Bridgestone Mag Mopus tire, but in place of the American 295mm single disc brake, the Euro-650

gets two 267mm discs.

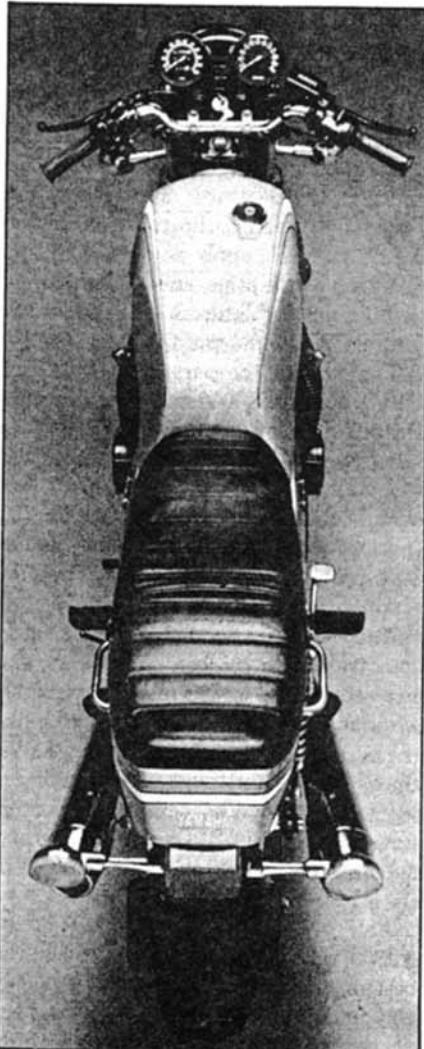
Keeping in mind the European environment this bike was meant for, it's plain to see Yamaha's goal for the suspension: It must cope with large deflections from rough conditions at high speeds, from Autobahn to Belgian blocks. Hence the fork's compression stroke coupled with better damping. The same thinking lies behind the alterations to the rear shocks, which while retaining nearly the same travel as the Maxim's, provide more preload, slightly heavier initial springing and a lighter second spring rate, not to mention a hefty 20 percent more rebound damping than the Maxim and 30 percent more compression damping. These changes all tell of Yamaha's desire to keep the large, unsprung rear mass of the shaft drive under control. And while the back ends of the bikes look the same, the drum brake of the Euro-bike is 20mm larger than the Maxim's. The wheel also grew to 18 inches in diameter (the Maxim has a 16-incher).

More important to the Eurorider, though, is the fact that the subtle but important changes to the Maxim result in a massive gain in the bike's ability to gobble road at any speed, any bank angle, under any conditions. And yet this is only partly due to the tweaked suspension. Most of it derives from the benefits of the riding position, which could be the most

significant aspect of the Eurobike.

Because Americans have overwhelmingly voted with their wallets for motorcycles with a full upright riding position, Yamaha configured its U.S. 650 with pullback bars and the low, stepped seat Americans demand. This places the rider smack on the end of his spine, literally holding himself up with the nearly parallel bar-ends. Many people have found this riding position to be painful on long rides, but in that complaint they miss the point; average trip length in this country is, after all, something less than 10 miles by the Motorcycle Industry Council's computation (1977). Thus for the majority of American riders, the Maxim's laid-back style works just fine. *But*.

But it's junk for more than a few minutes. The load on the spine causes pain and the handgrip position reduces precise steering control at high speeds. Furthermore, at high speeds, the rider is nearly blown off the bike. What's needed for more serious work, trips in the 50- to 200-mile category, is what the XJ650 Eurobike offers: the Magic Mean between sit-up-and-



Yamaha XJ650

SPECIFICATIONS:

MANUFACTURER: Yamaha Motor Co.
2500 Shingai Iwata-Shi
Shizuoka-Ken, 438 Japan

CATEGORY: street

SUGGESTED RETAIL PRICE: NA

ENGINE

Type	four-stroke transverse vertical four
Valve arrangement	double overhead camshafts
Bore and stroke	63.0mm x 52.4mm
Displacement	653.4cc
Compression ratio	9.2:1
Carburetor	four 32mm Hitachi constant-velocity
Air filter	disposable pleated paper element
Lubrication	wet sump
Starting system	electric only
Ignition	transistorized pointless; dual electronic pickups/dual coils
Charging system	12-volt; AC generator/voltage regulator/rectifier

DRIVETRAIN

Primary drive	helical gears		
Primary drive ratio	1.67:1		
Clutch	wet, multi-plate		
Transmission-to-middle-gear drive	straight-cut gears		
Transmission-to-middle-gear ratio	1.36:1		
Middle-gear-to-driveshaft drive	spiral-bevel gears		
Middle-gear-to-driveshaft ratio	1.06:1		
Driveshaft-to-rear-wheel drive	spiral-bevel gears		
Driveshaft-to-rear-wheel ratio	2.91:1		
Gear	Internal gear ratio	Overall gear ratio	MPH per 1000 RPM
I	2.19	15.29	4.9
II	1.50	10.47	7.2
III	1.15	8.03	9.3
IV	0.93	6.49	11.6
V	0.81	5.65	13.2

SUSPENSION/WHEEL TRAVEL, IN.

Front	36mm stanchion tube diameter / 5.6 in. (142mm)
Rear	5-way adjustable spring preload / 3.65 in. (93mm)

BRAKES

Front	dual single-action hydraulic calipers, 10.5-in. (267mm) discs
Rear	drum, single-leading shoe, rod-operated

TIRES

Front	3.25H19 Bridgestone Mag Mopus
Rear	120/90-18 Bridgestone 65H

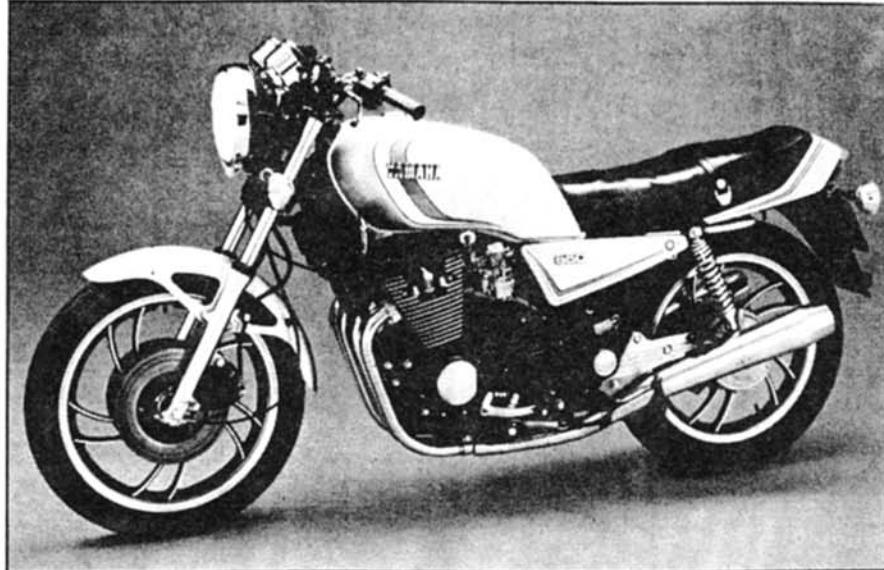
DIMENSIONS AND CAPACITIES

Weight	476 lbs. (216kg)
Weight distribution	46.8% front, 53.2% rear
Gross vehicle weight rating	952 lbs. (432kg)
Wheelbase	56.5 in. (143.5cm)
Seat height	31.2 in. (794mm)
Handlebar width	27.5 in. (699mm)
Footpeg height	12.0 in. (305mm)
Ground clearance	.5.4 in. (137mm), at exhaust pipes
Steering head angle	27.5 degrees from vertical
Front wheel trail	4.53 in. (115mm)
Frame	tubular mild steel, double front down tubes
Oil capacity	3.1qt (3.3L)
Fuel tank	steel, 5.2 gal. (19.5L), including 0.84 gal. (3.2L) reserve
Instrumentation	speedometer, odometer, tripmeter resettable to zero, tachometer

PERFORMANCE

Fuel consumption	.43 to 44 mpg (18 to 19 km/l)
Range, maximum	225 to 231 miles (362 to 372 km)
Range, reserve only	36 to 37 miles (58 to 60 km)
Speedometer error, 30 mph indicated	29 mph actual
Speedometer error, 60 mph indicated	58 mph actual
Best 1/4-mile acceleration	13.19 sec., 102.4 mph (165 kph)
Top speed (calculated)	125 mph (201 kph)

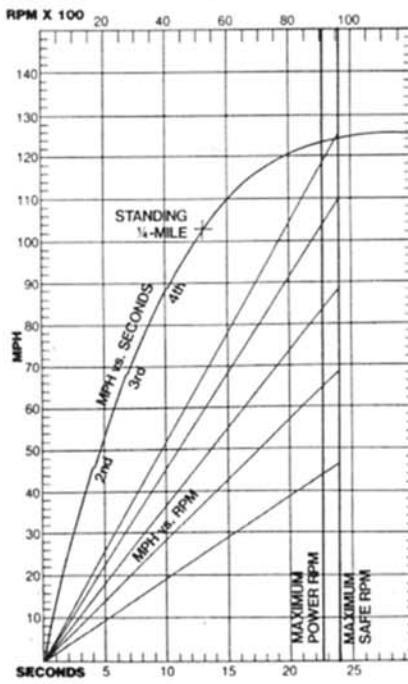
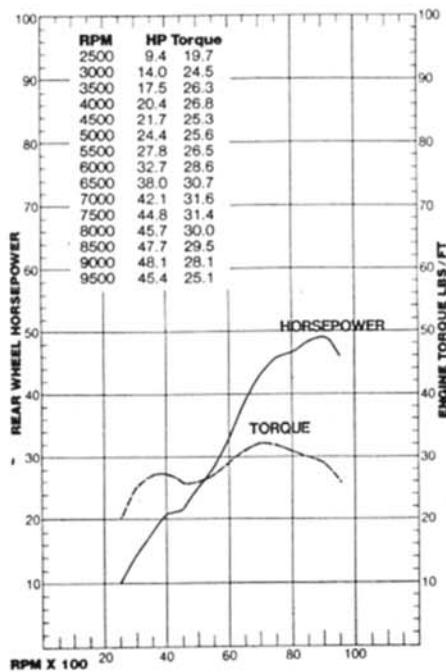
All weights and measurements are taken with machine unladen and fuel tank empty.



COMPARATIVE TEST DATA:

Make	Quarter-Mile, sec/mph	Top Speed, mph	Weight, lbs	Stopping Distance From 60mph, ft.
Yamaha XJ650 Eurobike	13.19/102.4	125	476	NA
Yamaha 650 Maxim	12.60/107.4	120	453	128
Honda CB650 Custom	13.10/99.8	113	447	131
Kawasaki KZ650 Custom	13.16/100.2	116	483	125
Suzuki GS750LN	12.87/103.5	120	526	129
Yamaha XS850SG	13.10/101.7	116	548	144

PERFORMANCE:



beg and the café crouch.

Yamaha's ergonomics engineers, like Honda's CB900F designers (*CG*, February 1980), obviously have watched and measured and listened to a great many Euroriders, because like the CB900F, the EuroYamaha feels comfortable instantly. The weight of your body is spread along your buttocks and the inside of your thighs on the seat; your arms slightly outstretched, wrists turned down a little to spread the load. Footpegs are located so that you can stand easily at any time—a sure and quick check of an efficient riding position pioneered by designers of race bikes. The idea is that if you can't raise your body comfortably, the bike is going to get uncomfortable. Fast.

The proof is in the riding. A six-foot rider can hammer this machine for literally eight hours along *every* kind of road at *any* speed from freeway-slow to Alpine Berserk and not suffer numb-but or shatterhand. Wrists never hurt, nor does the base of the spine. Result: Huge lengths of road can be eaten without effort.

That point should be underlined, because it's critical to the GT genre. Unlike a flashbike or café racer, this sort of machine should not require the rider to perform gymnastics to wring the best from it. A proper GT riding position mated to a well-designed suspension and willing engine should allow the rider to sit comfortably and flick the bike from max-lean on one side, under braking, clip the apex or pass the diesel truck, apply power and flick to max-lean on the other side, all without Superbike-racer athletics. Such a bike is comfortable in action—not just in repose.

That's what the paradigm of the GT bike is, and the XJ650 meets it admirably. Despite its slower quarter-mile E.T. (a function of the tired engine and the greater weight), the 653cc DOHC four pours out even, controllable power without flat spots. At 6000 rpm it comes alive, and at 8000 provides serious poke, so to pull everything out of it, a lot of two-stroke-style shifting is demanded. Given the fairly smooth-shifting gearbox, this is easy, and so a genuine 110 mph is quickly attainable without crawling under the paint. Unlike the paragons of the GT genre, the BMWs, the Yamaha doesn't pitch under braking or acceleration, nor does it emulate the unfortunate tendency of BMWs to climb up and down on the crown-wheel-and-pinion in the aft gearcase.

And as promised by the visuals of the XJ650, the best riding technique is in the best generic traditions of the GT. You need only find a comfy spot on the seat and apply gentle pressure to the controls to fairly

fly on the ground with this bike. The Mag Mopus tires work just fine in the dry, and they need to, because the compliant, controlled suspension and superb ground clearance allow lean angles just this side of a Yamaha TZ750. You must be going literally ten-tenths before either footpeg ticks the ground, and even then the bike tracks steady and true. Indeed, the biggest drawback to this kind of performance is your feet; you must draw your toes up on the peg at these angles or you'll grind through your shoe leather in short order, and even then your toes will drag if they protrude through the space between peg and shifter or brake. That, friends, is *something* for a conventional street bike.

But then this is some kind of street bike. Imagine a motorcycle that melds the best of Europe and Japan so subtly it's hard to tell where one stops and the other begins. Imagine a motorcycle capable of 100-mph speeds all day while delivering mid-40s mpg. Imagine further that this same motorcycle loses none of its aplomb two-up, simply giving away a bit of ground clearance. You've imagined the XJ650.

Granted, there are drawbacks. It is heavy, at 476 pounds dry, only 50 pounds shy of the Honda CB750F and five pounds more than the KZ750 four. And the exhaust note, which has no growl and a lot of howl in it, can be tiring. Moreover, if one were to attempt gilding the lily with saddlebags or a small fairing, the magic would evaporate quickly, since the pipes preclude serious cargo capacity and any kind of useful fairing would deprive the rider of the wind he needs to lift his weight off his wrists. So the motorcycle, to be successful in its role, must stand naked.

But so what? The XJ650 stands at the forefront of motorcycle design even in its nakedness. Its achievement lies in the way it defies the stereotypes. Unlike the European cliché, the XJ650 is racy, fast and agile without being uncomfortable, cranky and stiff-legged. Unlike the American cliché, the XJ650 is smooth, flexible and plush without being sluggish and clumsy.

Here at last we have the matching of European and American design priorities. The Euro-XJ650 is a great motorcycle for the way it takes American virtues of comfort, adapts them to European standards of agility and turns what should be compromise into greatness. The result is a motorcycle that has an appeal far more international than even Yamaha International suspects. For those riders who yearn for that expression of speed and comfort that the designation "GT" expresses, the Yamaha Euro-650 is the new definition of the genre.

Ride Review

- Sport-riders, get your airplane tickets and head directly to Europe. You've got to ride this bike. It's not a café racer, nor is it your garden-variety street bike. It's a sport-bike that's blessed with the right amount of everything a sport-rider wants, such as handling and predictable steering. I can ballet-dance this bike around any corner. And it brakes so well, it never stumbles on the entry because of sensitive discs.

But let's talk extremes: cornering angle. You almost have to go off your gyro-rocker to get this bike to scrape hardware in a corner. And when you rub a little paint from the pegs and stands, not to worry, it's as steady as if you were riding it in a straight line at 30 mph.

I could continue to rave about the Euro-650, but the final line is, I lust for it. I lust for this bike to belong to me.

—Dain Gingerelli

- I have never regretted leaving England. I soon learned to like baseball and popcorn, and can even enjoy the odd Custom motorcycle. However, one ride on the European XJ650 left me homesick for warm beer, fish and chips and real motorcycles.

From the moment my 6-foot-two-inch frame draped around the XJ650 I was transported back to a land where motorcycles are used for more than a trip to the Seven-Eleven. Because not only was this bike beautiful in my eyes, it also functioned beautifully, long after I passed the Seven-Eleven.

The XJ650 is a machine that redefines the term Grand Touring. Forget about high bars and a fairing. Straight bars and rearsets really can be comfortable on a long trip. The only trouble is I will have to make a trip all the way back to Europe to enjoy it.

—David Dewhurst

- You already know that the Euro-XJ scribes the fastest line through the switchbacks and that it will give you vertigo before you can get a footpeg to touch down. But maybe you're not convinced that the switch from Maxim specs to a tightened suspension, non-rubber-mounted engine and European riding position can produce a more comfortable bike. Well, be convinced.

This suspension swallows freeway expansion joints without gagging and the engine spins as smoothly at idle as it does at redline. And the riding position is graceful. Since I ride with my head tilted further up than anybody else around here, I really despise the crypto-café tuck. Yet the Euro-XJ's riding position never made me feel clumsy in metro-traffic and it took all the sting out of 100-mile rides.

Sure, this bike runs real good on Sundays. But it's great Monday-through-Friday, too.

—Michael Jordan