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MOTORCYCLIST

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OCTOBER 1981

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Yamaha's Unique 920 V-Twin

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Yamaha IT465—
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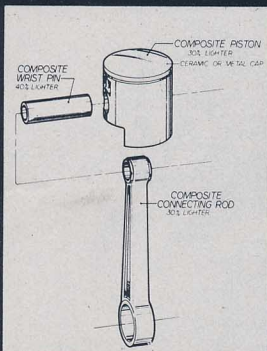


MOTORCYCLIST

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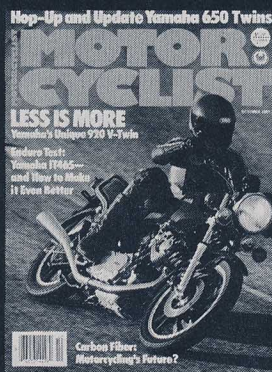
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This month's cover is a test. Sharp eyes will discover something missing in this shot, the 936th published photo taken through the Editor's gritty old Nikkor lens with potatoes growing in it. Actually, there are three things absent if you count the XV920's missing mirrors. Check your powers of observation by reading the XV920 test, which will unravel the mystery.

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YAMAHA XV920

You've Heard of the
Universal Japanese Motorcycle?
Well, This Isn't It.

The Universal Japanese Motorcycle has dominated motorcycling for much of the last decade. First one, then two, then all of the Big Four began producing strikingly similar four-cylinder road bikes. Some of these machines were remarkably good, but all had much the same feel, look, and personality. They had little in the way of individuality or uniqueness.

Fortunately, the UJM mold has begun to crumble in recent years, as the Japanese manufacturers have designed more unusual motorcycles. Yamaha's XV-series machines are one of the best examples of anti-UJMs to date. The XV920, in particular, is packed with traits that make it stand apart from the normal Japanese offerings, and the same qualities—simplicity, easy-going power, and a European look and feel—also help to place it among the most pleasant big bikes you can buy.

The chain-drive 920 shares much with the smaller 750 Virago, starting with its 920cc V-twin engine. The same cylinder and head castings are used in the big engine, but the bore is increased 9mm to 92mm. The stroke remains at 69.2mm. The lower end is little different, too. The ratios in the five-speed gearbox are the same in both engines; only the type of final drive separates the two engines. The 750 Virago features shaft final drive, while the 920 employs an enclosed 630 roller chain.

The 920's enclosed final-drive system is not a new idea, but it's still a good one, combining almost all the benefits of both chain and shaft systems, with very few of their drawbacks. Like a normal chain-drive setup, the 920's system is light and compact. And like a shaft system, it is durable and almost maintenance-free. It lacks the drawbacks of a shaft, such as rear suspension rise and fall and slight power loss through bevel gears. It needs almost no maintenance and won't fling chain lube all over the machine and rider. Yamaha predicts that the chain will last as long as 30,000 miles and will rarely require adjustment.

Aluminum cases fully enclose each sprocket, and rubber tubes encase both runs of the chain. A liter of lithium-based grease is in the chain case and becomes semi-liquid when the chain reaches operating temperature. The chain case need not be removed to get the wheel off. It stays on the





swingarm, and the wheel can be pulled out easily after you have removed the axle.

The XV-series twin-cylinder engine is an all-new design for 1981, but employs tried and true construction throughout, with a definite emphasis placed upon simplicity. For example, both of the two-valve cylinderheads are identical castings, with their intake ports facing the inside of the engine's V. To obtain the proper valve timing, the cams for the front and rear cylinders are mirror images of each other. They actuate the valves through rockers with easily adjusted threaded tappets. Link-plate chains spin the cams; the front cam is driven from the right side of the engine, and the rear cam is driven from the left.

To handle the additional power the 920 produces, the bike uses a sturdier crank assembly than the 750. Both crankshafts spin in the opposite direction than that of most motorcycles. The 75-degree V angle makes it an inherently smooth power plant, so no balancers or rubber engine mounts are used.

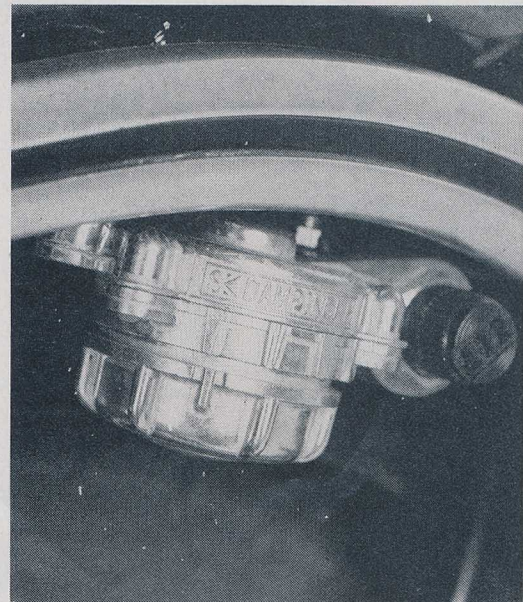
The cylinders are fed by a pair of 40mm Hitachi constant-velocity carburetors that nestle between the cylinders. They face opposite directions but are connected with a linkage, so only a single throttle cable is necessary. The chokes are operated by a lever near the left hand grip via a cable. To keep the engine narrow, the carbs pull filtered air out of the frame's sealed pressed steel backbone. The actual airbox and filter element are located under the left side panel. In an effort to keep operating temperatures uniform between the two cylinders, the carb feeding the rear cylinder has slightly richer jetting than the one feeding the front. The plastic side panels are shaped to direct additional air to the rear cylinder for better cooling, though the scoops are probably more cosmetic than functional.

More than anything else, the big V is what gives the 920 its own unique personality; it feels so un-Japanese that you'd swear it was designed where people eat pasta instead of sushi. It's about as far removed from the classic UJM as it can be. On the XV, relaxed yet substantial low-rpm power takes the place of the frantic high-rpm snap that most fours produce. The 920 makes usable pounding power from 1500 rpm, though it smooths out considerably from 2000 on. There's enough power available to launch the bike away from stoplights with surprising speed—without ever exceeding 3500 rpm. The Yamaha begs to be short-shifted so that the revs always stay between 2000 and 4000, where there's plenty of urge and very little annoying vibration.

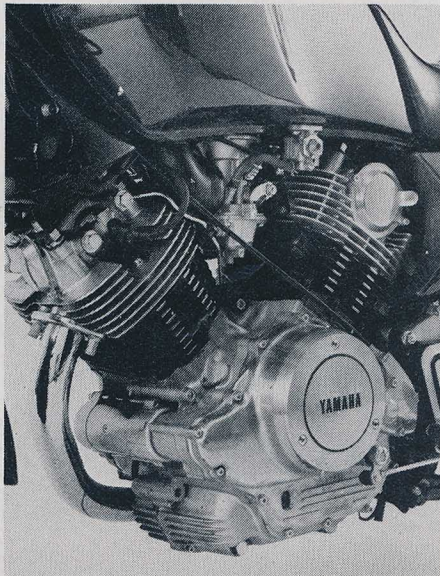
This is a drastically different ap-



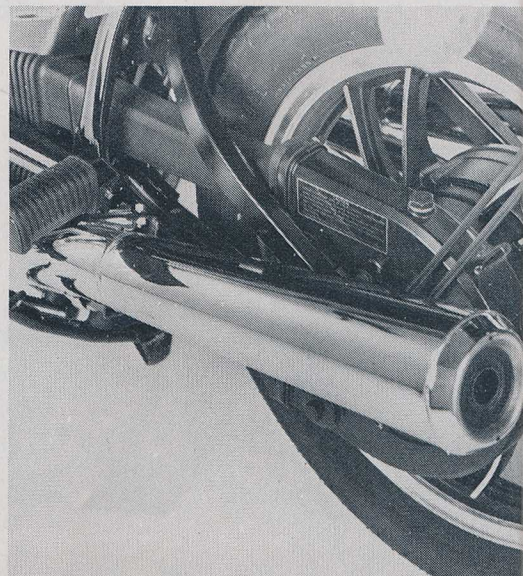
The toolbox/rack is functional, though the reflector looks like an afterthought.



This knob adjusts rebound damping settings; air pressure is adjustable, too.



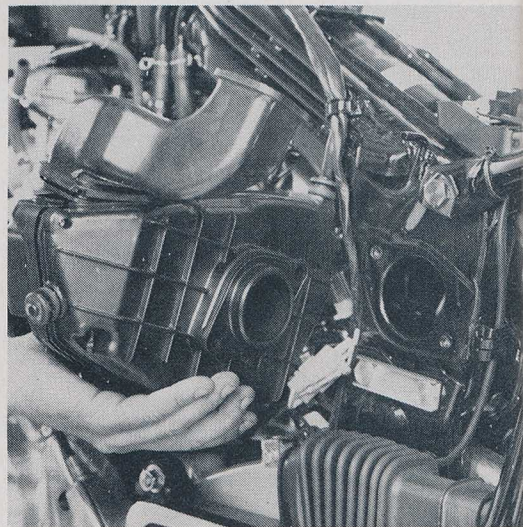
The engine functions as part of the frame, so no downtubes spoil the view.



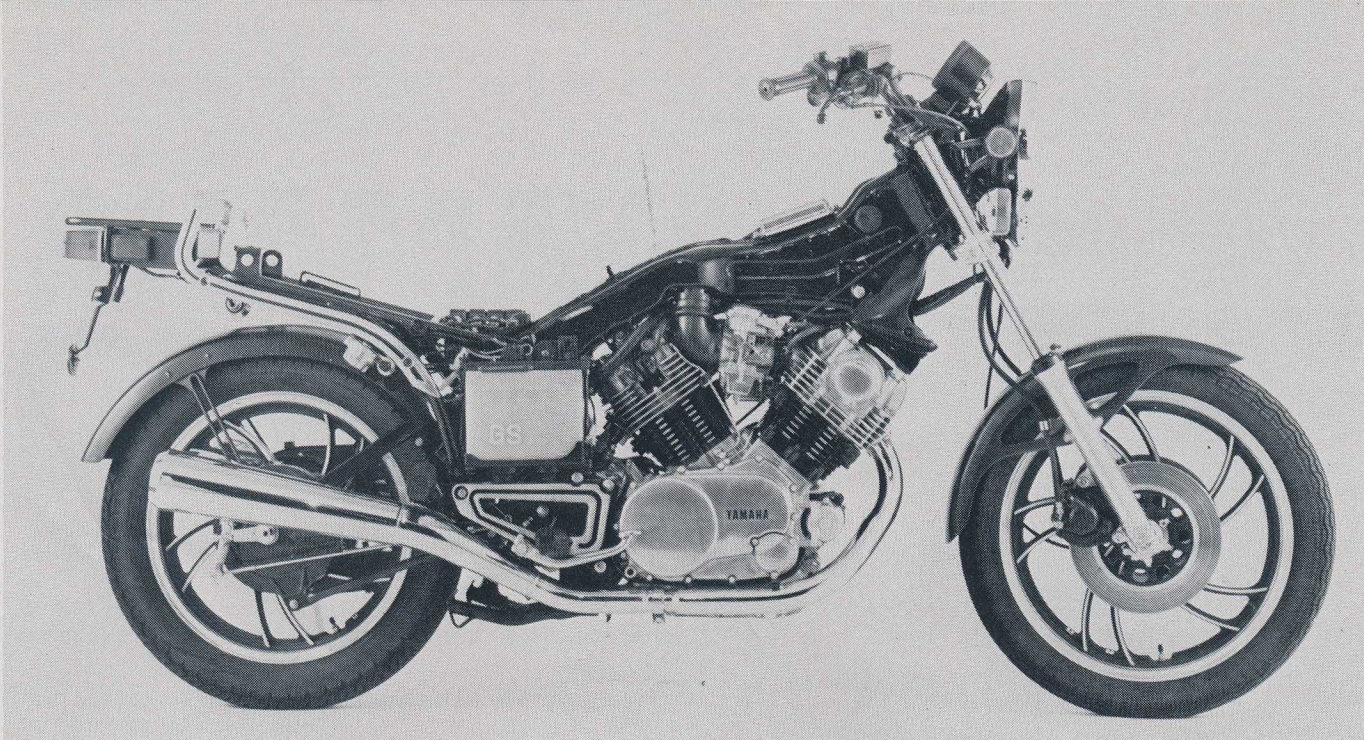
The enclosed chain requires little care and lasts longer than typical open chains.



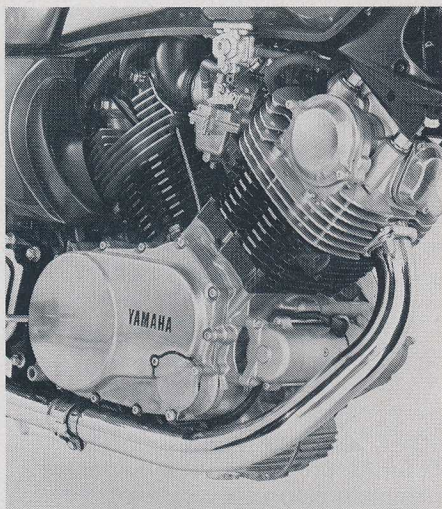
The huge eight-inch quartz headlight is plenty powerful, as are the dual horns.



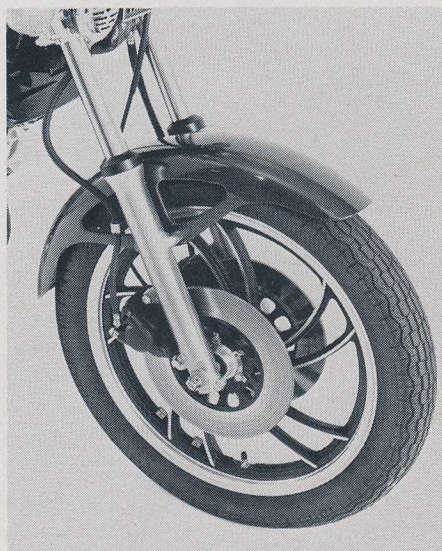
Air flows through filter box, then into frame, and finally to the pair of CV carburetors.



The 920's pressed steel backbone doubles as an airbox; engine is a stressed member.



The V is narrow, if not particularly light. The carbs nestle between the cylinders.



The 920's brakes are fine, but its narrow tires and the rims are a limiting factor.

proach than that taken with most four-cylinder bikes, where the good power is up higher in the rev range. The 920's offhand way of making power is easy to get used to and easy to like. All our testers are accustomed to multis of all sizes that require substantial revving to make good power, but we like the way the XV can move through traffic just as smartly as a multi, but in a more relaxed, enjoyable way.

Though the redline is set at 7000 rpm, we usually upshifted by 5000 rpm. Beyond that speed the engine vibration builds enough to be noticeable, though not uncomfortable. There's not a great deal of power up there either, so it makes sense to keep the revs down where it has the most grunt. At its peak, the 920 makes considerably less power than most other bikes its size. This is evidenced by the Yamaha's relatively slow 13.27-second quarter-mile time. Honda's CB900F is 1.3 seconds quicker, and most 650 fours are as quick or quicker than the Yamaha. Obviously, the big V-twin is no terror at the dragstrip, but then, when was the last time you rode your street bike at the strip? Most bikes accumulate all their miles cruising around the street, and at that the XV920 is very good. The only time the Yamaha may leave you wanting more power is during fast charges through the curvery at para-legal speeds. There, the lack of peak power becomes evident, and the XV has a hard time keeping up with a good 650.

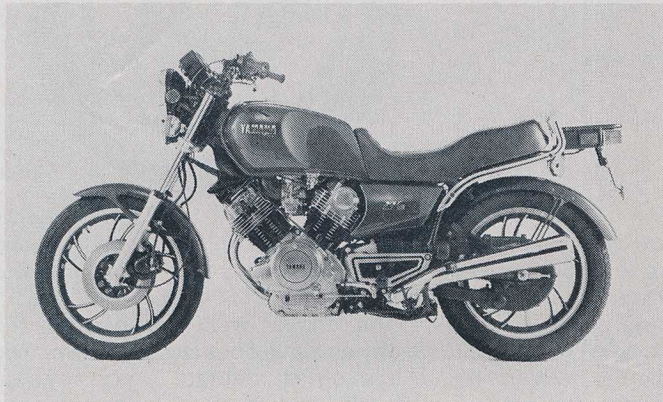
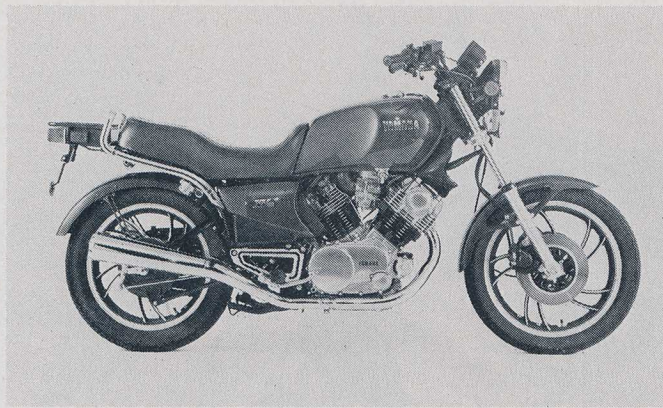
The engine's strong mid-range power makes it respectably fast in a fifth-gear roll-on from 50 mph. Its 76.4-mph terminal speed is roughly three mph slower than the CB900F's, and just one mph slower than the Kawasaki KZ1000J's. The 650s that will beat the 920 in the quarter-mile are humbled by

the XV in a roll-on. The XJ650 Maxim, for example, only hits 71.7 mph, and the rest of the 650s are below that.

The engine works as well on the highway as it does around town. The vibration is minimal at reasonable speeds, and there's plenty of power available for passing, even without downshifting. The transmission is a bit noisy but shifts fairly accurately. Initially, the clutch on our test bike was smooth and progressive in operation, but after being whipped at the dragstrip, its engagement became a bit grabby. The handlebar-mounted choke lever makes cold starts easier, but the XV coughs and hiccups until thoroughly warm. It coughs occasionally when the throttle is just opened, even when up to full operating temperature, but this is rarely more than a minor annoyance.

Chassis-wise, the 920 shares a great deal with the Virago. A stamped steel frame backbone is used, with the engine functioning as a stressed member. There is no engine cradle; a separate subframe bolts on and supports the seat and tool case. Monoshock rear suspension is used to control the rear wheel. The stubby, air-assisted shock features rebound damping that can be adjusted to any one of 20 settings. An aluminum knob located under the right edge of the seat lets you select any of six consecutive positions that you desire. It is linked to the shock with a pair of cables that rotate an adjusting ring. To try any other settings, the cables must be repositioned on the shock's adjusting ring.

The shock's air filler is easy to reach and allows you to adjust the effective spring rate to your liking. Yamaha's recommended pressures are on the low side, so the rear suspension bottoms solidly occasionally on dips and



YAMAHA XV920

Suggested retail price \$3499
 Warranty 6 months, unlimited miles
 Number of U.S. dealers Approx. 1100
 Cost of shop manual \$13.95
 Recommended maintenance intervals 2500 miles

ENGINE

Type Air-cooled tandem 75-degree 4-stroke V-twin
 Valve arrangement OHC, 2 valves operated by
 rockers, threaded adjusters
 Displacement 920cc
 Bore x stroke 93.0 x 69.2mm
 Compression ratio 8.3:1
 Carburetion 2, Hitachi 40mm constant-velocity
 Ignition Battery powered, transistorized,
 2 magnetic triggers
 Lubrication Wet sump, 3.8 qts.
 Charging output 224 watts AC
 Battery 12V, 20AH

DRIVE TRAIN

Primary transmission Straight-cut gears, 1.660:1
 Clutch 15 plates, wet
 Final drive No. 630 chain, 35/16

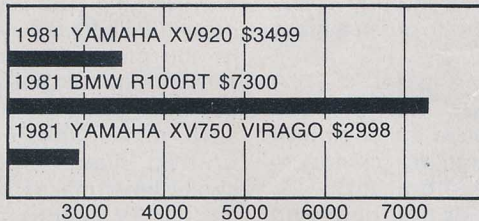
CHASSIS

Front suspension 37mm diameter Kayaba, 5.9 in.
 travel, air pressure adjustable
 Rear suspension Yamaha Monoshock, 1 Kayaba
 damper, 4.1 in. wheel travel,
 adjustments for air pressure, rebound damping
 Front brake 2, single action calipers, 264mm discs
 Rear brake Single-leading-shoe drum, rod operated
 Front tire 3.25H19 Bridgestone Mag. Mopus
 Rear tire 120/90-18 Bridgestone Mag. Mopus S716
 Rake/trail 28.5°/4.96 in. (126mm)
 Wheelbase 60.6 in. (1540mm)
 Seat height, unladen 31.25 in. (794mm)
 Fuel capacity 5.0 gal. (19 lit.)
 Wet weight 542 lbs. (246 kg)
 Colors Brilliant Red
 Instruments Speedometer, electric tachometer,
 odometer, resettable tripmeter; lights for
 left turn signal, right turn signal, low oil
 level, neutral, high beam

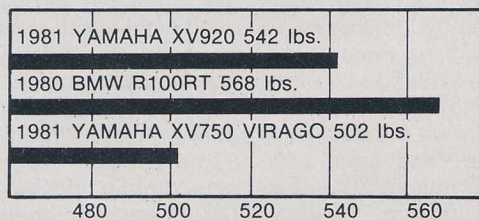
PERFORMANCE

Fuel consumption 35 to 50 mpg, 42 mpg avg.
 Average touring range 211 miles
 Best 1/4-mile acceleration 13.274 sec., 99.11 mph
 200-yd. top-gear
 acceleration from 50 mph 76.4 mph terminal speed
 RPM at 60 mph, top gear 3771
 Calculated speed in
 gears at (redline) .. (7000) 1st 43 mph; 2nd 61 mph; 3rd
 79 mph; 4th 98 mph; 5th 111 mph
 Speedometer error 30 mph, actual 33.1;
 60 mph, actual 65.2

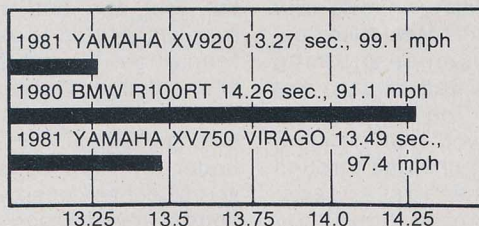
PRICE



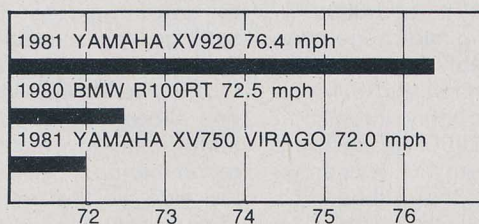
WET WEIGHT



QUARTER-MILE TIME



TOP-GEAR ROLL-ON TERMINAL SPEED



large bumps. We went up from the standard maximum pressure range for solo riding (14.2 to 28.4 psi) to 35 to 40 psi. That resulted in greater resistance to bottoming without sacrificing ride quality. It also provided a much-needed increase in cornering clearance. Eventually, we found that the bike worked best in the corners with the rear-suspension pressure clear up near the 56.9-psi absolute maximum and the rebound damping jacked up to the stiffest of the standard settings.

The front fork didn't require as

much fiddling. It worked fine with the air pressure set in the middle of the range. Higher pressures provided more ground clearance, but also made the ride harsher.

With both ends of the XV set up properly, the bike is a pure delight on a curvy road. The long 60.6-inch wheelbase makes it feel stable in fast corners, as does its somewhat slow steering geometry. Though the bike is by no means a lightweight, its narrow engine is carried very low, resulting in a low overall center of gravity. The XV

feels considerably lighter than it is, and it's more willing to change direction than its frame geometry numbers would indicate. As a result, you can whip it back and forth through esses and make sudden direction changes in mid corner.

The Yamaha's limiting factor in the corners is its skatey Bridgestone Mag. Mopus tires. At least the XV's good chassis ensures that when the tires let go, they do it gradually. Other than the tires and the narrow aluminum rims, the Yamaha is an able corner-carver. The dual-disc front brake is plenty powerful but has a somewhat indefinite feel at the lever. The drum rear brake works well. The sensible handlebar and slightly rearset footpegs help to make cornering gymnastics comfortable.

The 920 isn't quite so comfortable on a long haul. The contoured seat is thin and too narrow to provide the best support. Some of our taller testers felt a little short on legroom. The seat-to-peg distance is pretty short, forcing your knees to bend at a sharp angle. The ride through the fork is good, even on small seams and lips, but the rear suspension is less compliant. There seems to be a little too much compression damping to allow the wheel to respond quickly enough. The result is a tiring ride for a solo rider, but with a passenger or a lot of cargo, the ride improves significantly.

Our test bike proved to be almost dead reliable, except for a hopelessly pessimistic speedometer and a right rear turn signal that succumbed to gravity and fell off early in the test. (By the way, if you noticed that the turn signal was missing on this month's cover, you've won our "What's Wrong With This Picture Sweepstakes." Turn to page 236 to find out what your prize is and how to collect it.)

Yamaha obviously did their homework and came up with a unique motorcycle with the XV920. However, it seems as though they may have tried a little too hard with the unusual styling treatment used in the rear fender/taillight area. But it does incorporate a useful luggage rack and a small storage compartment.

The XV920 heads in a new direction for Japanese motorcycles. It seems to emphasize simplicity instead of joining the parade of proliferating valves and cylinders. Instead of dazzling you with the shriek of high rpm, it moves you with steady, surge-free power and the driving beat of a big twin. It has handling in spades—the kind we normally expect from motorcycles coming over the Atlantic, not the Pacific. The XV920 is unlike anything we've seen from Japan; a welcome change and a very enjoyable motorcycle. Maybe it's the first of a new breed of UJMs: the Unusual Japanese Motorcycle. **M**

Off The Record

The XV920 suits me fine. I'd rather ride it than any other big bike, with the possible exception of the CB900F Honda. The XV is so relaxing to ride, with its easygoing power and smooth road manners. The way the engine spins out power reminds me of a Ducati. There's adequate urge coupled with very little vibration.

The low center of gravity makes the Yamaha an excellent handler, too. It feels stable when you're going fast, but changes direction easily. It's just a shame that the bike isn't fitted with better tires and wider wheels to fully take advantage of the chassis' cornering ability.

As an indication of just how fun the 920 is to ride on curvy roads, consider this: We took our test bike along when Honda introduced their CX500 Turbo. The ride was up serpentine Angeles Crest Highway. On the way up the hill, everyone was fighting over the two Turbos; the XV was way down on power compared to them. But on the trip back down the mountain, things changed. We all struggled to get a ride on the XV. On the downhill, where handling counts more than horsepower, the Yamaha is hard to beat.

—Jeff Karr

Though I've never owned one, I've always been a big Ducati fan. The machines cast an aura of European exotica apart from anything ever offered by the Japanese. The silky lines that seem to point to curvy like a dowsing rod on wheels, the solid feel of the chassis, undaunted handling, and smooth (even if somewhat slow) stream of power from the V-twin desmodromic engine. Everything about a Ducati beams of pure sport, riding for the pure pleasure of going fast in the most unhurried way.

My feelings were immediately carried over to the XV920 after my first hard ride through the canyons. It is everything a Ducati was meant to be and, in a way, more. Maintenance is sure to be easier and less frequent, and of course there is the comparatively low sticker price. Suspension is far more adjustable than any Duck, and you don't have to speak Italian to get parts. The bike doesn't evoke cheers at the strip, but it is fast. Fast from point to point, if there happen to be twisties in between. I don't get the same feeling of riding something exotic on the 920 as I do

with a Duck, but in a Japanese way, the 920 is exotic. It is what many of us have been screaming for since our first ride on a Duck, and I, for one, am happy to see that the Japanese have listened.

—Ken Vreeke

The XV920 arrived at a good time for my self-esteem. You see, after you've been doing this motorcycle-testing stuff for a while, you get so that you can spot the good ones and the bad ones at a glance. Or at least, that's what people seem to expect. In fact, one eager buyer even asked for a capsule test over the phone based on nothing more than a black-and-white photo I'd seen a week or so before.

Unfortunately, lately I've been the wrong person to ask for these snap impressions. Consider my record. Back in June, I figured that the Honda GL500 Silver Wing and BMW R65 were going to be among the best in our field of nine middleweights, but they both left me cold. Yamaha's 750 Seca, tested in July, had me pacing the halls on the day of its arrival because I was so eager to ride it, but it never met my expectations either. I'd mentally assigned Honda's 1981 CBX to my Best-Dressed Boat Anchors list before I rode, but 1200 miles later someone almost had to threaten me before I'd give it up. Then last month was the CX500 Turbo, which I was certain was going to be sensational. In fact, I probably would have bought one without riding it if I'd had the necessary cash and someone who'd sell me one. After riding it, I was glad I was not given that opportunity.

The XV920 was another one I'd picked as a winner. (It's right there in black and white on page 89 of our May issue.) It looked right when I first saw it at Yamaha's dealer show last fall, and if anything, it felt even more right when it was hustling me down the road. Yamaha has fully capitalized on the V-twin's strengths and pretty well negated its few weaknesses. It's the nicest big twin I've ridden in ten years as a motorcycle tester and is perhaps the only answer for a rider who is dissatisfied with the current crowd of big multis but wants a bike that is functional, sporting, reasonably priced, practical, and backed up by a strong dealer network. It's nice to be right once in a while.

—Art Friedman