Tests: KTM 495, Suzuki RM80
Yamaha Seca 400, Honda XL250R

Comparison: The Four Sporting 550s

Honest Speedometers Made Easy

# CYCLE WORLD

AUGUST 1982
$1.50 UK £1.05

America's Leading Motorcycle Enthusiasts' Publication

## Four Tickets to Racer Road:

Kawasaki GPz550, Suzuki GS550M,
Yamaha Vision, Yamaha Seca 550

0 27100 06105 08

# DOUBLE NICKEL


## Comparing the Kawasaki GPz550, Suzuki GS550M, Yamaha Seca 550 and Yamaha Vision

CYCLE WORLD TEST

■ Fun is a hard quality to measure, but in the world of street bikes it may be that the sporting 550s offer more than any other single group of motorcycles. While they may not be best for two-up touring or shooting from one coast to the other, they truly come into their own on those stretches of winding road you later look back upon and remember with fondness. A 550 is big enough and fast enough to thrill without feeling lethal and intimidating, and it's not so heavy and large that it takes on a mind of its own if you get out of shape halfway through a corner. A good rider can use everything a

# ROCKETS

550 has, while much of the peak speed and power of larger bikes goes unused or untapped in normal riding. And using everything a bike has is a lot of fun.

A good part of that enjoyment can be attributed to the power and handling of the current crop of 550s. Intense competition among manufacturers for this popular segment of the market, as well as the rigors of box stock racing, have produced a group of bikes with exceptional handling and quarter mile performance once reserved for 1000s and hard-charging 750s. In choosing 550s to compare, we picked four sport models, the products of three Japanese companies, all within the same performance ballpark—and a fairly small ballpark at that—but with some distinct differences in character, handling and style. The test bikes

Photos by Ron Hussey

# DOUBLE NICKEL ROCKETS

chosen were the Kawasaki GPz, the Suzuki 550M, and two Yamahas, the 550 Seca and the V-Twin Vision.

Of the major Japanese companies, only Honda is missing from the lineup, which is a little strange because Honda more or less invented the modern 550 class. The old CB, however, has been elevated to 650 status, and the only other Hondas within shooting distance are the FT and CX500s. Both those bikes, however, are aimed at different markets and have little in common with the bikes in the 550 performance class. Honda has a slick-looking dohc CBX550 in Europe now, but nothing yet available for the American market.

One bike almost didn't make it into the test, and that was the new Suzuki 550M, affectionately known around the office as Katana Jr. For undisclosed reasons Suzuki has directed its U.S. branch not to release the 550M for testing, so we borrowed one from a local owner. The Suzuki, like the Kawasaki, is an updated version of last year's 550, whereas the Seca is virtually unchanged from last year's introductory model. All three are inline dohc Fours with chain drive. Only the Vision breaks the mold, with its water cooled 70° V-Twin engine.

In comparing the bikes we commuted to work, took them on weekend rides, ran through a day of track testing at Willow Springs Raceway and rode them to the dragstrip, where each bike was tested for quarter mile times, top speed and braking distance from 30 mph and 60 mph. Strengths and weaknesses quickly emerged, specialties were noted and favorites developed—all despite the fairly confined performance bracket of the competing bikes. Here's a rundown on the machines:

### KAWASAKI GPz550

The KZ550 established itself as the fastest way around a roadracing circuit on a Box Stock 550 when it was introduced in 1980, displacing the Suzuki GS550 in that role. Off the track it was also a pleasing bike, with taut handling and midrange power previously unknown to half-liter machinery. In 1981 Kawasaki brought out a more sporting cafe version of the KZ, the Firecracker Red GPz550, with a bikini fairing, low bars and rearsets. Beyond cosmetics, it also got a second front disc, a rear disc in place of the drum, electronic ignition, hotter cams, higher compression, air forks, shocks with adjustable damping and a fuel gauge.

This year's GPz carries over most of those changes and adds a few more big ones. The 1982 GPz, or KZ550H-1 as it's known in the parts books, now has an all new frame with Uni-Trak rear suspension, bigger carbs, a more powerful engine, and a host of smaller changes.

The engine, like the other two inline Fours in this test, has a dohc cylinder head, two valves per cylinder, and drives a chain to the rear wheel. Unlike the others, valve adjusting shims are carried under the inverted cam follower buckets so the cams must be removed to set valve clearances. This year Kawasaki again increased the power on an already powerful engine by redesigning the airbox, increasing ramp speed on the cams, bolting on 26mm TK CV carbs to replace the 22mm TK slide throttle units, and by opening up the intake ports by an extra 4mm. Claimed power on the GPz is now 61 bhp at 9500 rpm measured at the crank, vs. 57 bhp at 9000 rpm last year. Kawasaki says the carbs were changed to improve mileage as well as power.

The GPz's Uni-Trak suspension is a rising rate system that has more in common with the full-floating suspension on Eddie Lawson's KR250 roadracer than it does with the normal Kawasaki dirt bike Uni-Trak. As the swing arm moves upward it compresses the single spring/shock unit from both ends at once. The lower eye of the shock is bolted to the swing arm and the upper end is acted on by a forged steel pivot arm that uses frame brackets for a fulcrum. The swing arm has 5.5 in. of travel and is made of a combination of tube and box-section steel. The swing arm pivots on two separate bolts rather than a single through bolt because the shock moves within the axis of the swingarm pivot. The shock is a non-rebuildable gas-nitrogen type with a free piston between the gas and oil.

There are four damping positions on the shock, adjustable via a plastic knurled knob at the bottom of the shock, accessible by reaching under the bike, just ahead of the rear tire. You have to get down on your hands and knees to find it, but it's not hard to reach. Spring preload is another matter. This is adjusted with a threaded collar at the top of the shock, and reaching the collar necessitates removal of the seat, left sidecover, air cleaner and chain guard. These have all been designed for fairly easy removal, but turning the threaded collar from maximum to minimum preload with the shock tool is a laborious process requiring dozens of strokes of the wrench in tight quarters (tight meaning knuckle-busting).

Despite all the new hardware the new GPz weighs 1 lb. less than last year's, even with more gas aboard in the new 4.7 gal. tank, almost a gallon more than last year's 3.8 gal. container. More plastic parts have been used—battery box, rear fender, seat pan, etc.—and larger diameter but thinner wall tubing has been used in the frame.

Wheelbase has also increased, to 57 in. from 54.9 in., mostly as a result of the Uni-Trak system, and the front end has been kicked out an extra 1.5° with an extra 0.4 in. of trail to slow down the steering. The steering head now uses tapered roller bearings.

Other changes include a straight-pull throttle, dogleg brake and clutch levers, tinted mirrors and a new LCD instrument panel with a battery level sensor, sidestand warning light, and a gas gauge that has a disappearing row of little LCD blocks to show fuel level. The new five-spoke wheels, which weigh the same as last year's seven-spoke wheels but look lighter, are painted a bright red, as is the swing arm. Handlebars are modular, with cast aluminum uprights and non-adjustable steel tube ends.

List price on the GPz is $2749.


## SUZUKI GS550M

When introduced in 1977, Suzuki's GS livened up the 550 class by rediscovering some of the power and speed lost to Honda's 550 Super Sport as it became gradually slower and heavier. The Suzuki was fast, and could be made reliably faster, and it could also be enticed to handle well with a little fork oil and shock treatment. Since then the bike has gone through a number of styling and detail changes, but the same basic engine is with us still in the new Katana-style GS550M.

The biggest mechanical change to the engine in five years has been the substitution of 32mm Mikuni CV carbs for the original 22mm Mikuni slide throttle units. It is a dohc inline Four with a bore and stroke of 56 x 55.8mm and a compression ratio of 8.6:1. The camshafts are driven by roller chain, the crank rides on roller bearings and drives the clutch with straight-cut gears, and it has a six-speed transmission.

If the engine hasn't changed much, the styling and chassis certainly have this year. The new GS has received the full Katana treatment; not quite as radical as the Katana itself, but more clearly in the same mold than the GS1100E. The seat is sculptured in orange and black, rising to meet the top curvature of the huge 6 gal. silver gas tank. The angled sidecovers bear the Katana sword emblem and the front fender is finished off in silver and black. Rear springs, brake calipers, brake hubs and spark plug wires all stand out in bright orange. The goodlooking engine remains visible and silver, but the exhaust system is plated with black chrome.

Functionally, the bike now has air forks and four way adjustable damping on the rear shocks. The Suzuki's triple disc brakes, with big 10.7 in. brake rotors, provided 275 sq. in. of swept area, the largest in the group by 65 sq. in. Tapered roller bearings are used in the steering head and the swing arm moves on needle bearings. The choke lever is now thumb operated at the left grip rather than in the middle of the steering head, as is true of most other Suzukis this year.

Instrumentation on the Suzuki is simple and clean, with a pair of round faces for the tach and speedo, with a set of warning lights and a needle-type fuel gauge in the middle. At 475 lb. with half a tank of fuel, the GS is by 13 lb. the heaviest bike of the group, the Yamaha Vision being next at 462 lb. Part of that weight, of course can be attributed to the larger gas tank. The 57.5 in. wheelbase makes it also the longest of the group by a bare 0.5 in. over the Vision and the GPz. Handlebars are tubular steel type.

The Suzuki carries the lowest suggested list price in the group at $2599, $60 less than the Seca and $350 less than the most-expensive Vision.

## YAMAHA 550 SECA

Yamaha's Seca was a brand new design last year, and this year's model is completely unchanged except that it is now painted red with white trim instead of the other way around. The Seca is the shortest and lightest bike in the group, with a 55.3 in. wheelbase and a test weight of 424 lb. That's 35 lb. lighter than the next lightest bike, the GPz.

The 528cc engine also has the smallest displacement in the group, and it's the narrowest of the Fours. The Seca engine belongs to the XS11 design group, though considerably scaled down from that powerplant. It is a dohc inline Four with two valves per cylinder and roller chain driven cams. Valves are adjusted with shims that ride on top of inverted buckets under the cam lobes. The crank rides in plain bearings and drives a Hy-Vo chain to a jackshaft behind the cylinders. This shaft drives both the clutch and the a.c. generator, which are tucked in behind the engine to keep it narrow.

Four 28mm Mikuni CV carbs feed the engine, and the cylinder head uses Yamaha's patented YICS (Yamaha Induction Control System). YICS is sort of a small manifold or holding chamber cast into the cylinder head. It holds part of the fuel/air mixture between power strokes of the engine and when the intake valves open allows part of the mixture to be drawn into the valve area through subports. The small diameter of the subports increases the velocity of the incoming mixture and aids in the swirling of the mixture, while promoting better burning and lower emissions.

The Seca has a single 11.7 in. disc brake at the front and a drum at the rear, with an adjustable front brake lever. Front suspension is non-adjustable for damping and comes without air caps; the two rear shocks have six spring preload positions but no adjustment for damping.

Tucked inside the small fairing is an instrument cluster that includes a tach and speedometer, needle-type voltmeter and fuel gauge and a small row of idiot lights. The fairing itself is a bit larger than the Kawasaki's. Handlebars are conventional tubular type.

Suggested list is $2659.

# DOUBLE NICKEL ROCKETS

## YAMAHA 550 VISION

The Vision is easily the most unusual bike, mechanically speaking, of the test. Introduced this year, it has a 70° water cooled V-Twin engine. The engine is highly oversquare at 80 x 55mm and has two chain driven cams in each of its four-valve cylinder heads. The crank spins in the same direction as the wheels, on plain bearings, and operates a gear-driven counterbalancer at the front of the vertically split cases. The clutch is driven by a straight-cut gear off the crank. A pair of 36mm downdraft carbs sits between the cylinders and feeds the engine through ports connected to the Vision's own YICS system. This uses a V-shaped plastic mixture reservoir that hangs between the cylinders on the right side. An aluminum radiator is bolted to the front of the frame, using an electric, thermostat controlled fan that pulls air through the radiator when traffic slows down.

The Vision's chassis is also the most unusual of the group. It uses a "hang support" frame with a narrow, triangulated backbone whose lowest tube runs along the tops of the cases. Most of the engine is suspended below the frame tubes. Rear suspension is Yamaha's Monoshock design, with the top of the shock bolted to the frame beneath the seat. The triangulated swing arm upper pivot pushes directly against the lower shock eye, and the shock is in a laid down, almost horizontal position.

The Vision is the only bike in the group with shaft drive, the enclosed shaft forming one side of the Monoshock swing arm. The shaft side of the rear hub incorporates a 7 in. drum. The front brake is a single 11.7 in. disc. Front suspension is non-adjustable without air caps and the single rear shock has five spring preload positions, set by raising the seat and turning the collar with a shock tool. Damping is non-adjustable. The front fork is kicked out to provide turning clearance at the radiator, so the fork ends have trailing axle clamps to retain normal rake/trail dimensions.

In dimensions the Vision is at none of the extremes. Its 57 in. wheelbase is about the same as the GPz's and the GS550's, it's the second heaviest bike at 462 lb, only 3 lb. heavier than the GPz, and it has the third largest gas tank at 4.5 gal. It is, however the lowest geared bike, turning 5295 rpm at 60 mph.

While instrumentation is contained in a styled rectangular module, it is fairly simple, with a speedo, tach, water temp gauge and idiot lights. The handlebars are four piece modular units where the upright piece on either side forms the outer clamp on the fork tube at the top of the triple clamp and the other end holds the round handgrip piece. The uprights are of forged aluminum and the handgrips are steel with splined insert ends to allow a small amount of angle adjustment.

With a suggested retail price of $2849, it is the most expensive bike of the group, $100 more than the next-expensive GPz.

## PERFORMANCE

### KAWASAKI GPz550

In measuring performance we usually think of acceleration and speed first and then handling, but the word encompasses both areas, without regard for comfort and other amenities. In this test the Kawasaki GPz won the high-performance nod without much trouble. During our day at the drag strip it turned a best quarter mile of 12.70 sec. at 102.04 mph and, good run or bad run, made all of half a dozen runs in the sub-13s. We had managed to get both Yamahas into the high 12s during previous tests, but on the day of testing were unable to get any time faster than a 13.06 sec. at 96.87 mph for the next fastest bike, the Seca. So the Kawasaki was almost .4 sec. and about 4 mph quicker and faster than the next in line. Terminal speed in the half mile radar run was 116 mph, 5 mph faster than the second place Seca with 111 mph. The only faster 550 around is last year's GPz, which managed a .05 sec. and 2 mph advantage over the '82 we used in this test.

If the Kawasaki was the fastest bike in a straight line, it also proved to be the easiest and most predictable bike to ride fast around the race track. The Kawasaki and the Vision are very close in their handling capabilities, but right out of the box the GPz provides more adjustability to rider and track demands as well as a higher level of confidence inspiring stability in both fast and slow corners. The bike feels taut, responsive to rider input and is less affected by bumps and extraneous surface changes. The tires stick well with no sudden surprises, and share with the other three bikes a rating of excellent—especially by OEM tire standards.

The GPz required a little more muscle in fast right-left-right transitions than both Yamahas, but that is partly because of its good straight line stability. With a bit more air (14 psi) than the 10 psi recommended in the front forks, the GPz also demonstrates excellent resistance to dive under very heavy braking. The adjustable damping and wide range of spring preload in the rear also allow the bike to be set up for good cornering clearance and suspension compliance for a variety of riders.

For fast street riding and even a moderate amount of race track flogging the single rear shock works fine. But some road racers have found the shock can fade under hard use, particularly in hot weather or when oversize tires are used. For those conditions some racers have installed remote reservoir nitrogen-charged shocks, along with stiffer front springs. On the street, however, the GPz works about as well, out of the box, as anything unleashed on the public, and such changes are unnecessary.

Besides speed and handling, the GPz also provides a virtually bulletproof clutch. The bike was easiest to ride at the dragstrip because of the consistant, even clutch engagement, which did not change after many runs.

A number of good riders have done well at the race track on Yamaha Visions, but skill has been an important factor here. For consistent, willing bank-on-it performance, the red Kawasakis are still the fast way down the strip or around the race track.