

Cycle

FEBRUARY 1982

Laverda Jota

1000 Triple

Yamaha IT250J

Kawasaki's GPz550

Single-Shock Speedster

Turbo Outrage!

**Suzuki 1100
Puffer**



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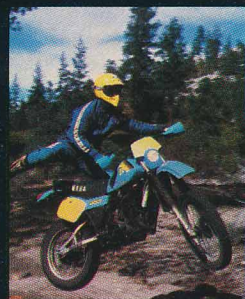
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This Month's Cover: Here you see the Kawasaki GPz550 at speed and at tilt; what you do not see is its single-shock rear suspension, tucked neatly away and hard at work thanks to Mark Homchick. Yes, he's paid to gas-it-up. The Dave Hawkins Magic Brownie catches the bend-it-over action and what's not there anymore—the twin shocks. The road test begins on page 28.

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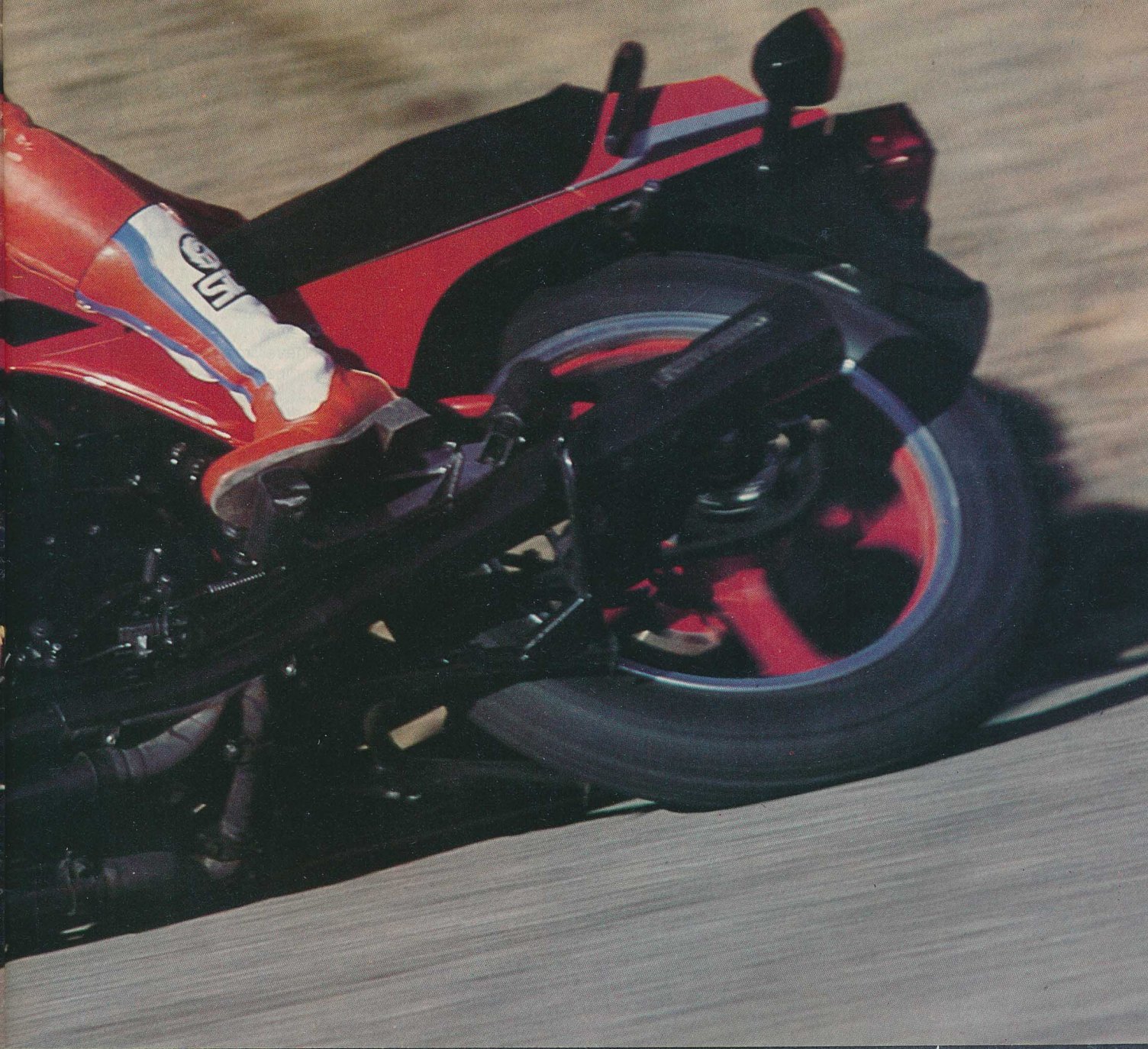
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KAWASAKI GPz550

Avid middleweight bike fans need no longer wait for technical innovations to trickle down from the big bikes. Kawasaki introduces a new Uni-Trak suspension system on the GPz550, and it really works!

PHOTOGRAPHY: DAVE HAWKINS, ROBIN RIGGS, STEVE BROADDUS



● NOT LONG AGO, MIDDLEWEIGHT BIKES were poor stepsisters in Motorcycling's Greater Theater. They sat at the edge of the limelight when major manufacturers rolled their big-inch hardware onto center stage. Riders came off mid-sized bikes on their way to the big stuff, which had everything. Eventually, technical and styling innovations spread to the fringes, but often were old by the time they became standard on mid-sized scooters.

In the 1980s the stepsisters emerged front and center; manufacturers introduced mid-sized motorcycles that were radically updated or completely new. The commitment to the class is real; witness the array of sophisticated 1982 machinery. Kawasaki, in particular, became the '81 middleweight leader with the GPz550, a handsome lightweight Superbike complete with three discs, adjustable suspension components and 12-

second quarter-mile credentials. Although the 550 engine and GPz styling have changed little for 1982, the running gear is completely different—and much improved.

Uni-Trak makes the 1982 GPz550 radically different from its twin-shock predecessors. Uni-Trak is Kawasaki's label for its single-shock rear suspension system, which until now has been used only on its leading motocross and enduro models.

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The Uni-Trak label, however, applies to more than a single system; the GPz550's unit differs substantially from the Uni-Trak on the KDX and KX. In these Kawasaki off-road bikes, the bottom of the vertically mounted shock bolts to the frame, while the top mounts to a bellcrank system. The swing arm actuates a pair of vertically disposed struts which connect to one end of the bellcrank whose pivot anchors to the frame. The other end of the bellcrank pushes down through the top eye of the shock.

The GPz550 system works differently. First, the bottom of the shock mounts to the swing arm, not to the frame. A bellcrank still connects to the top of the shock; the crank pivot is on the main frame, and the other end of the crank connects to a very short strut that runs to an eye on the triangulated swing arm. This system, not dissimilar to Suzuki's Full Floater, compresses the shock from both ends; although, unlike Suzuki's system, there aren't long struts running from the trailing end of the bellcrank to the swing arm.

Most important, the GPz's Uni-Trak is

truly a rising-rate system; that is, the amount of wheel travel to a given unit of shock travel decreases as the shock compresses. In theory, a rising-rate system initially produces soft and responsive wheel travel that gives a smooth and comfortable ride, but as the wheel moves toward the top of its travel the action becomes progressively stiffer. This means the soft initial ride does not compromise the quality of rear-wheel travel.

Although the GPz Uni-Trak is a rising-rate system, it is not steadily progressive; the wheel/shock travel ratio makes a couple of jumps, one during the first bit of wheel travel and the other toward the end. But for most of the in-between portion, the ratio of shock compression to wheel travel remains the same. And while this may be interesting in a theoretical way, in practical terms it doesn't count for much in the GPz's case.

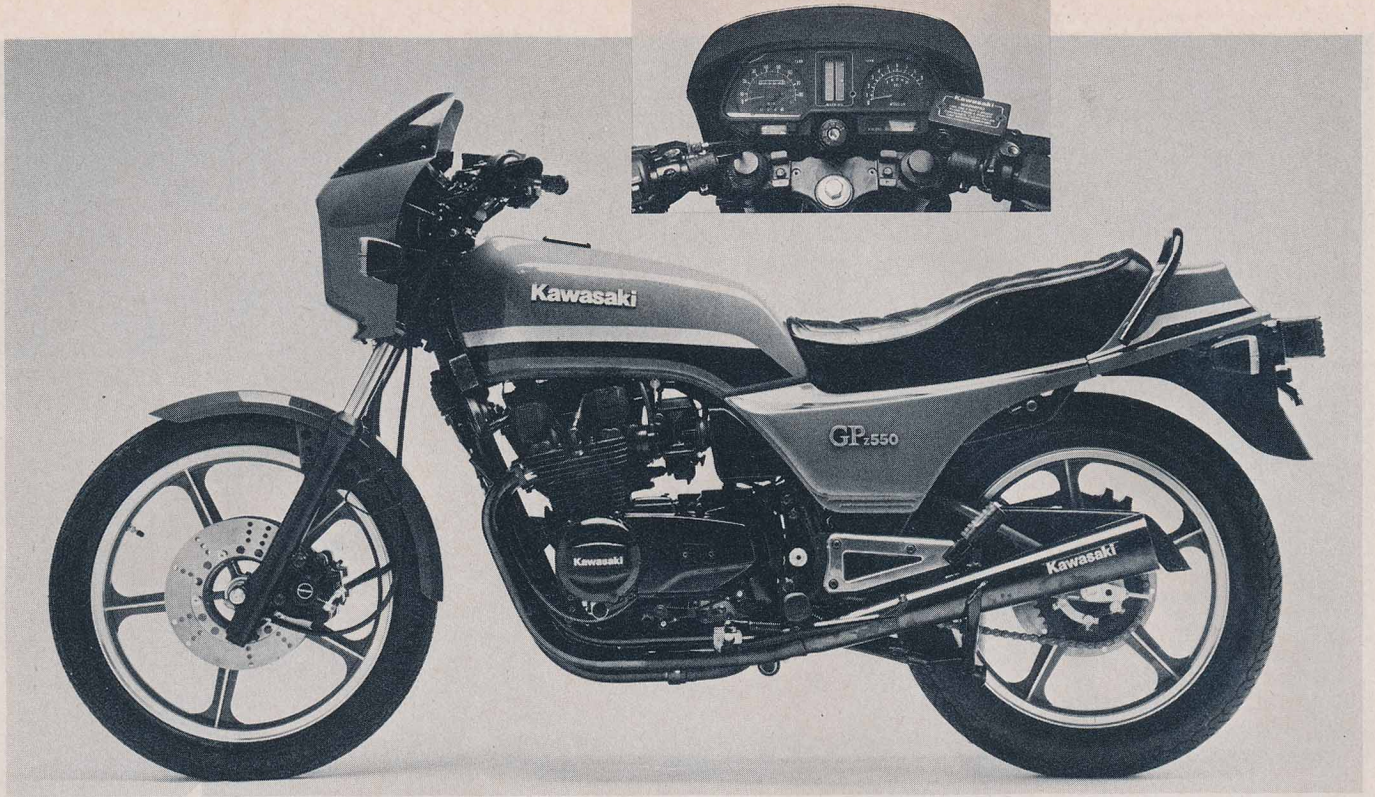
In the real world, the GPz's single-shock rear suspension system works well; the 550's ride is firm without being harsh, and the adjustable shock lets you dial in a setting to suit your weight and riding style. The shock adjusts for both rebound damping and spring preload. Located at the bottom of the shock, the

damper adjusting knob is protected by a rubber dust cover. The 550 offers four settings; the second position provides 15 percent more rebound damping than the lightest setting; the third and fourth offer 30 and 47 percent more damping, respectively. We liked the shock set on the number-three damping position, with the spring preload collar set at the number-three or number-four level, depending on rider weight.

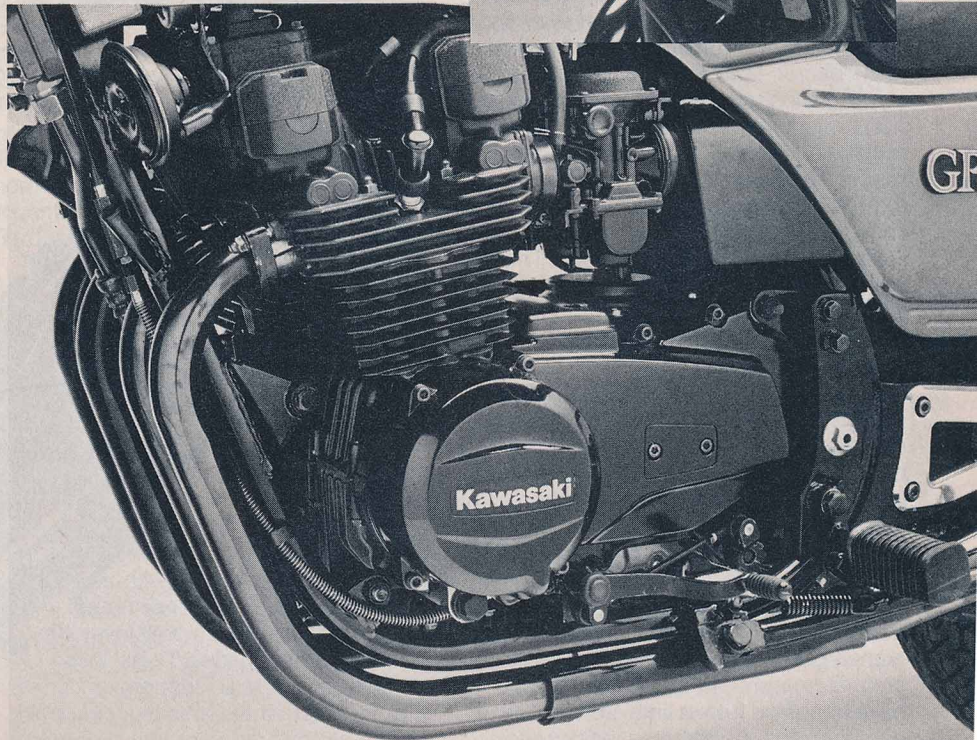
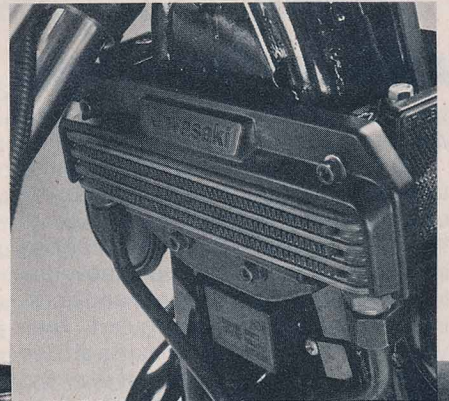
Set up in this fashion, the rear suspension is excellent. The Kawasaki feels predictable and solid, and the well-matched spring rates and damping characteristics make the GPz's handling outstanding. The GPz flies through fast corners with dips that would have lesser bikes bottoming on entry and pogo-ing and wallowing on the way out. And while the Kawasaki's suspension characteristics are ideal for hard backroad riding, the GPz's ride remains firm but acceptable on the freeway.

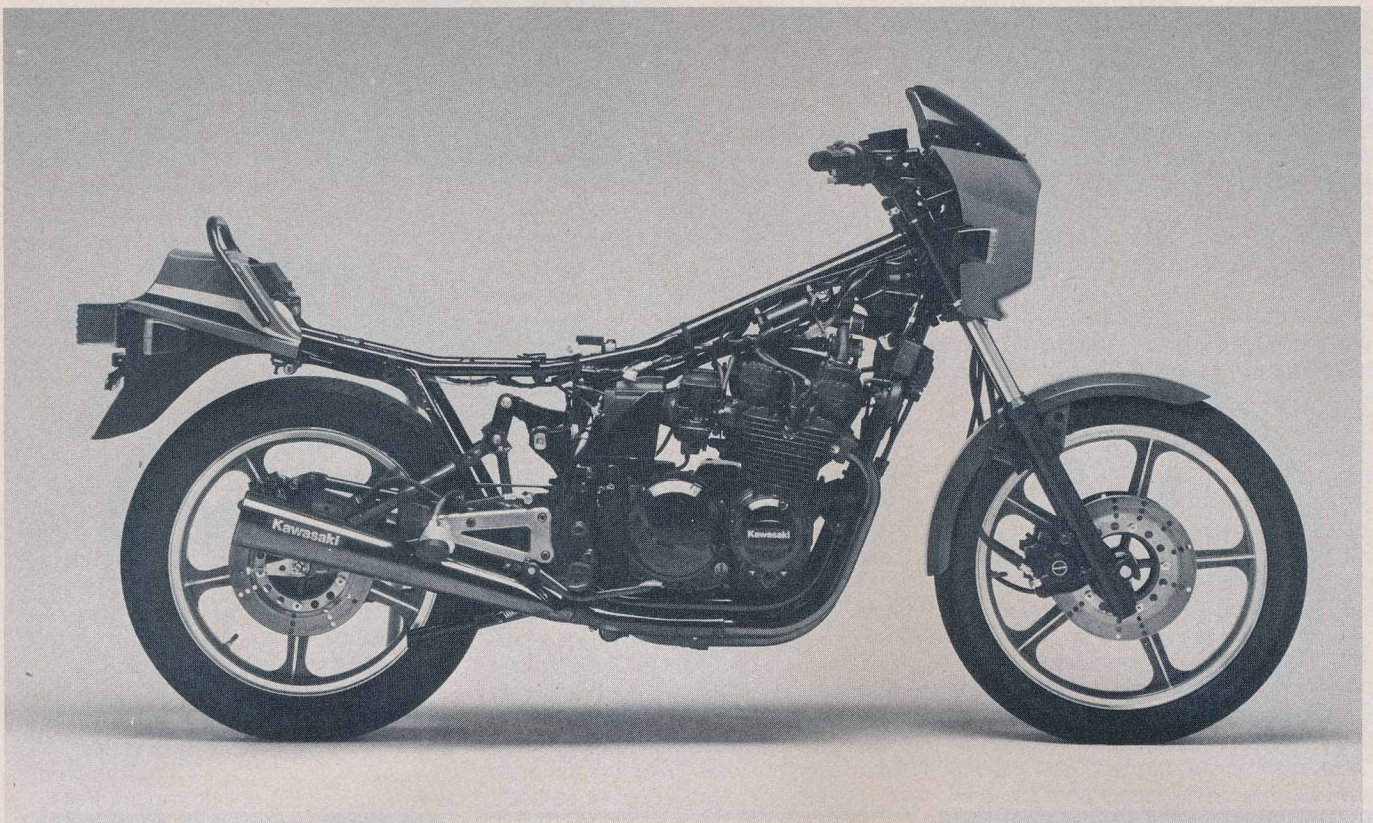
You'll never mistake the GPz for an armchair-plush long-distance touring rig, but neither will you feel chewed up and spit out after a full day's ride. Many GPz owners won't care about the Kawasaki's long-distance capabilities, but it's reas-





Kawasaki made a number of small changes to the 550's instruments, engine and styling. The instrument panel now has a voltmeter, an LCD fuel gauge and warning lights. Engine features new 26mm CV carbs and a standard-issue oil cooler.





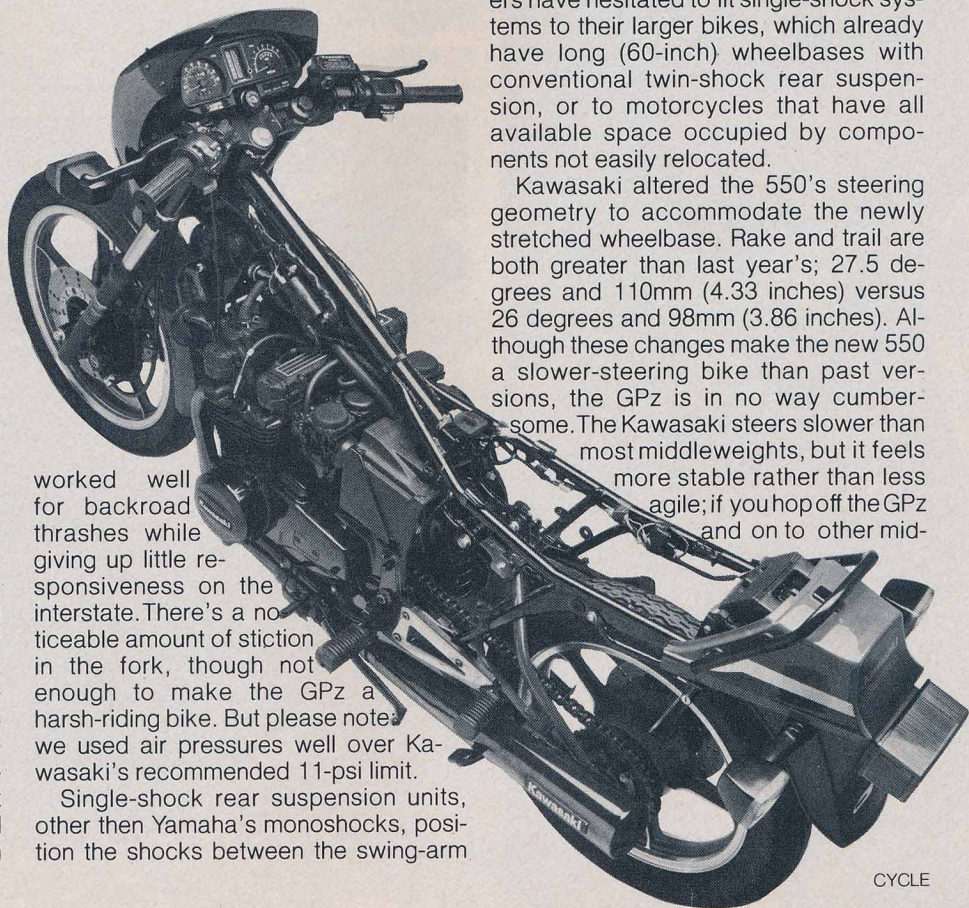
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sureing to know that the 550 can pull double duty.

The GPz's single rear shock isn't easy to reach. To begin the adjustment procedure, you first pull off the seat to get to the tool kit, which is stored in a small box in the tail section. Next, you remove the left sidecover, the air cleaner and housing, and the plastic chain guard. Then you get to the shock, which has a slotted adjusting sleeve that allows for very fine increments and makes preload adjustment easier than the typical jam nuts used on most single-shock rear-suspension systems. You can adjust the preload with the hook wrench provided in the tool kit, but the involved process discourages roadside alterations. Most riders will choose an all-around compromise-setting for their riding style and roads. Those who feel compelled to fine-tune the rear suspension every time the chosen path changes probably form a distinct minority anyway.

Although the 1982 GPz550 fork looks like last year's air-assisted leading-axle unit, Kawasaki has incorporated a number of small refinements. The 1982 fork legs interconnect; this makes charging the fork a snap. The fork's coil springs are marginally stiffer this year and use a little more spring preload. More significantly, the rebound damping rate is up 14 percent over last year's GPz, and the compression damping rate is up a whopping 42 percent. Although the 550 might have benefited from a little more rebound damping and a little less compression

damping, in general these changes should please the canyon racing crowd; fork performance is first-rate under hard riding conditions, and the 550 never starts the gentle wallowing through fast sweepers. With the stock fork oil and 18 to 20 psi air pressure, the front end



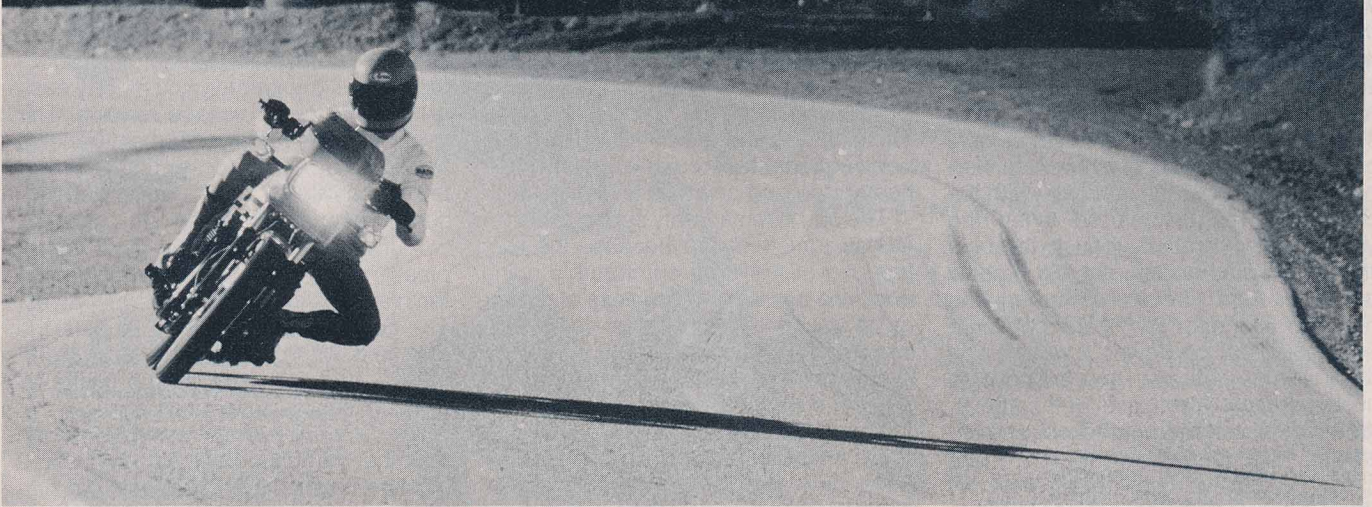
worked well for backroad thrashes while giving up little responsiveness on the interstate. There's a noticeable amount of stiction in the fork, though not enough to make the GPz a harsh-riding bike. But please note: we used air pressures well over Kawasaki's recommended 11-psi limit.

Single-shock rear suspension units, other than Yamaha's monoshocks, position the shocks between the swing-arm

pivot and the rear wheel. This unavoidably stretches out the wheelbase; in the case of the Kawasaki 550, 2.1 inches have been added, bringing it to 57.0 inches. Middle-displacement bikes seem short enough to withstand the extra length, though we suspect manufacturers have hesitated to fit single-shock systems to their larger bikes, which already have long (60-inch) wheelbases with conventional twin-shock rear suspension, or to motorcycles that have all available space occupied by components not easily relocated.

Kawasaki altered the 550's steering geometry to accommodate the newly stretched wheelbase. Rake and trail are both greater than last year's; 27.5 degrees and 110mm (4.33 inches) versus 26 degrees and 98mm (3.86 inches). Although these changes make the new 550 a slower-steering bike than past versions, the GPz is in no way cumbersome. The Kawasaki steers slower than most middleweights, but it feels more stable rather than less agile; if you hop off the GPz and on to other mid-

The new Uni-Trak GPz is the best-handling middleweight bike we've ever tried. The 550 offers excellent ground clearance, adjustable suspension components, and a nearly perfect seating position.



sizers back to back, they feel small and twitchy in comparison.

GPz550s had very good ground clearance in 1981, and this year's bike is excellent in this department. If you grind away the footpeg ends, you can eventually get to the exhaust pipe shield on the right side. On the left, the mounting bracket for the switch that activates the "sidestand down" warning light scrapes after the footpeg has been trimmed away. We nibbled away enough of the switch bracket so we could barely touch the foot of the sidestand to the ground. Most riders will find it challenging enough to pavement-file the pegs, and smart riders will not go beyond this limit.

The GPz brakes generate plenty of stopping force. The rear brake is a bit sensitive, especially near lockup point, and our test unit's front brake lever had a trace of sponginess and required higher-than-average lever pressure. Otherwise the brakes are terrific: linear, powerful, predictable, and fade-free—even on hard downhill chases.

This year Kawasaki switched to Bridgestone Mag Mopus tires, which are standard issue on nearly all Japanese street bikes. The vast majority of riders won't notice the change, but our preference runs toward the Dunlops mounted on past Kawasaki 550s; we think they grip better in dry Southern California conditions and break in or scuff in quicker than the Bridgestones. We presume the Bridgestones have a little harder rubber compound and would give longer mileage, though we've had no opportunity to test these tires back-to-back for mileage.

In any case, the GPz550 is so much fun to ride hard that many riders may switch to any number of premium tires after they wear down the original rubber.

The 553cc dual-overhead-cam engine remains largely unchanged from last year's powerplant—a high-performance version of the KZ550-A1 engine. Last year, Kawasaki used bigger valves and exhaust pipes, more radical valve lift and timing, and a higher compression ratio to boost the 550's horsepower output in the GPz version. This year four 26mm TK constant-vacuum carbs replace the 22mm slide-type mixers used in the past. These carburetors draw from a new airbox, necessary to accommodate the Uni-Trak system, which uses up some space normally taken by the airbox. A frame-mounted red-and-black oil cooler is standard, a nice feature for a sport bike.

The new carburetors have cured the 1981 GPz's reluctant cold starting. Our Uni-Trak bike fired up readily on chilly mornings and required no cajoling with the choke lever. Once warm, the only mini-glitch was a micro-second delay between throttle shut-off and the butterfly-valves' response, a characteristic of CV carbs. Other than that, the GPz's carburetion is perfect.

The bigger carbs exact no penalty in fuel efficiency; we averaged 46.8 miles per gallon, a touch better than with last year's bike. This thriftiness, combined with a larger gas tank, should reward the average cruiser with a range of over 200 miles. The tank is 0.8 gallon larger; however, a leaky gas cap on our test bike prevented the use of all the capacity.

Fully gassed, the 1982 Uni-Trak GPz550 is five pounds lighter than last year's twin-shock model. That's quite an accomplishment, one which made us look forward to drag-strip testing. Last year's GPz made 54 horsepower on the dyno and ran off a phenomenal 12.86-second, 102.62-mph quarter-mile. We first thought the 1982 bike, with less weight and more carburetion, should be a flier—though seat-of-the-pants G-meters suggested that our bike, a well-traveled model used for testing in Japan and the United States, might not have 12-second intensity. Still, humans aren't drag-strip clocks; your pants can fool you. The GPz's 13.32-second, 98.90-mph drag-strip figures proved one-half second slower and three miles per hour down on our 1981 test GPz.

When the bike went back to Kawasaki, slightly bent exhaust valves were discovered in cylinders one and two—and some scoring on the number-three cylinder wall. When set right, the bike went to the dyno.

The dyno power curve, even with the refreshed engine, indicated that our 1982 test bike just didn't have the horsepower of our 1981 test unit and lacked the punch to be a 12-second quarter-miler. The difference in peak horsepower, 54.12 (1981) versus 48.08 bhp (1982), amounted to six, but that didn't indicate fully the loss at lower rpm levels. Nowhere did the 1982 power curve overreach the 1981 one, and the difference at 4000 rpm was more than three horsepower; at 5000 rpm, more than four; at 6000 rpm, six; at 7000 rpm, seven; at

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8000 rpm, eight. We concluded, on the basis of our drag-strip and dyno experience, that our 1982 bike might run a 13.15 to 13.20 quarter-mile, but it wouldn't have the power to cut a 12-second number.

What happened to the horsepower? We don't know, but we'll share our speculations. Perhaps our test bike was only an "okay runner" in a test-bike world where the norm is a "good runner," though the magnitude of the difference is greater than anything we've experienced between good and okay runners. Perhaps the cam timing on our test bike was slightly retarded—and it wouldn't take much to make a huge difference. Perhaps more was wrong internally with the 550 than was discovered when the valves were replaced, though the bike had no unusual noises, nor did it show any other signs of distress. Perhaps the new airbox and/or carburetor combination cooled out the power. It wouldn't be the first time we've seen that, but never to such a degree. Perhaps all of the above. It's difficult to believe that such a horsepower loss is generic to the 1982 GPz550s, but we can't report how we think a motorcycle model should perform. We deal only with how one particular test motorcycle did perform.

Even at 48 horsepower, nobody could call the GPz550 Uni-Trak flat. As it stands, the GPz is still a quick 550, and only a couple of clicks off the best 650s around. And the rest of the power train works well.

The clutch pull is remarkably light, its engagement point broad, and the clutch

endured a number of harsh drag-strip launches without overheating.

The gearshift action is positive and smooth, even with a moderately long throw. A sloppy shifter might find neutral ground between fifth and sixth gears; a decisive left foot never misses anything. The GPz550 has a positive neutral selection; that is, when you're stopped and in first, the gearbox will shift only to neutral. This feature eliminates the fishing between first and second gear at stoplights.

The gearbox ratios are well matched to the Kawasaki's top-weighted powerband, and the six-speed box always has at least a gear or two to suit every need. Driveline snatch, the traditional Dread Thing of Japanese Power Trains? Not very noticeable normally; you'll need heavy stop-and-go traffic to identify any.

The 550 is remarkably comfortable for all-day travel, in part because the GPz has one of the most comfortable riding positions available, regardless of motorcycle size. Only the firm foam seat would wear on a non-stop rider after an hour or so. We liked the bar height, and the pull-back of the bar strikes a happy medium, though two staffers would have liked to angle the bars back a touch. This is impossible since the bike has individual handlebars that fasten onto each side of the top clamp, and they cannot be adjusted for pullback.

Although the 550's gearing remains unchanged, the new Bridgestone rear tire has a greater circumference than last year's Dunlop. This taller rear tire drops engine speed 200 rpm at 60 miles per hour in top gear, making the Uni-Trak smoother than its predecessor on turn-pike cruises. You have to ride a long way

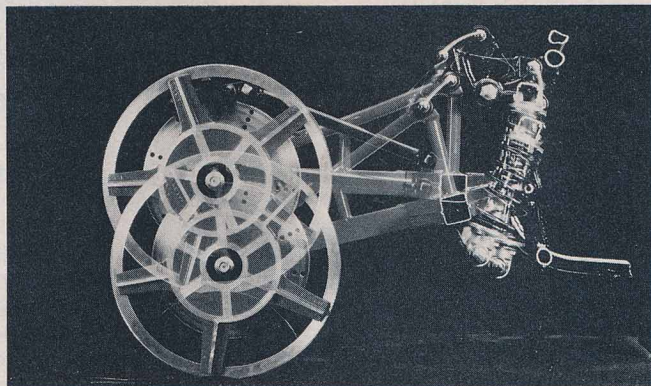
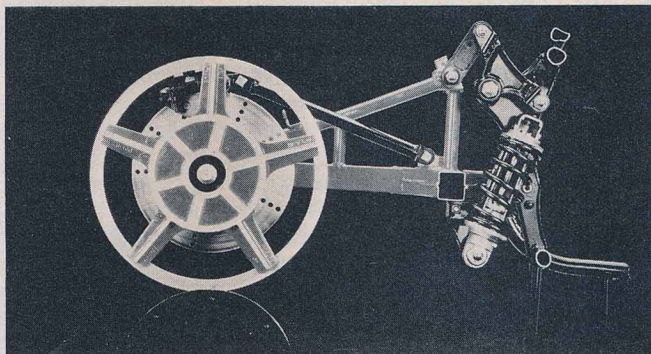
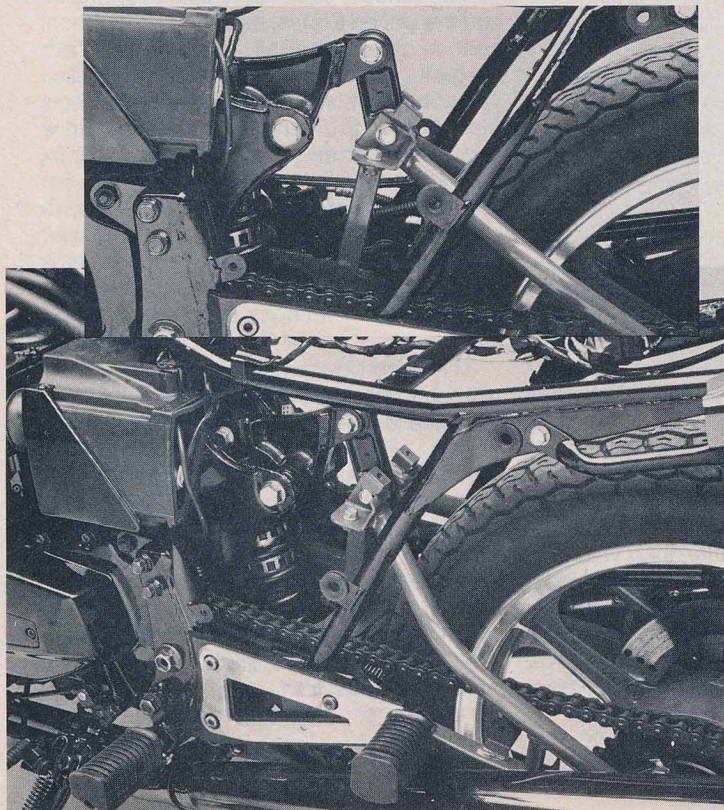
before you detect even a finger tingle.

The GPz has a new instrument panel. A centrally located Liquid Crystal Display (LCD) fuel gauge keeps a fairly accurate measure; the gauge starts winking and a red warning light blinks just a bit before you have to switch to reserve. The red warning light also blinks in conjunction with three other LCD warning indicators. They light up when the engine oil or battery electrolyte levels are low, or when the sidestand is down. The rider has no means of canceling the warning light; it glows until the rider deals with the problem. The electric tachometer serves double duty as a voltmeter; you merely push a button to get a voltage reading. The upper portion of the instrument panel is protected by a glass cover that seals out the elements well, but the cover can produce a glaring reflection.

At night the instruments glow with a pleasant green hue that comes through the markings inscribed on the dial faces. The 60/55 watt headlight dispels the darkness with better-than-average efficiency, and a hazard switch blinks all four turn signals in an emergency.

The GPz550 is the standard by which all other middleweight sporting bikes must be judged. Its single-shock rear suspension system is a functional stride forward; the motorcycle is the best-handling middleweight we've tested. Its riding position tops all mid-displacement sport bikes. Everywhere the rider intersects with the machine, he gets the impression that someone who understands sport riding worked on the design and development of this motorcycle. Sure we'd like to have an easier way to adjust the rear shock, a slightly softer saddle, a little

The street-going version of Kawasaki's Uni-Trak suspension system differs from the off-road setups—it is a true rising-rate system. The shock is adjustable for both spring preload and rebound damping, but access is limited.



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pullback adjustability in the bars, and 1981-style GPz horsepower not present in our test bike. Yet anyone who wants a

mid-displacement sport bike to hone into a very personal weapon would start with the GPz550 Uni-Trak. We think the choice is that obvious.

Should your liter-up Superbike friends

sneer at your half-size bike, just invite them on a fast trip down your favorite twisty road. If you're up to it, they may well be surprised to find whose bike turns out to be Super.

Cycle TEST SPECIFICATIONS

Make and modelKawasaki KZ550-H1 GPz
Price, suggested retail (as of 11/17/81)\$2749

PERFORMANCE

Standing start ¼ mile 13.32 sec. @ 98.90 mph
Engine rpm @ 60 mph, top gear 4706 rpm
Average fuel consumption rate 46.8 mpg
Cruising range, main/reserve 187/37 mi.
Load capacity (GVWR less curb weight) 156.5 kg
(345.0 lbs.)
Maximum speed in gears @ engine redline (1) 42.2
(2) 61.3 (3) 78.6 (4) 96.4 (5) 112.9 (6) 127.5

ENGINE

Type Four-stroke, in-line four, air-cooled with two overhead camshafts chain-driven
Bore and stroke 58.0 x 52.4mm (2.28 x 2.06 in.)
Piston displacement 553cc (33.73 cu. in.)
Compression ratio 10.0:1
Carburetion (4) 26mm TK
Exhaust system Four-into-two
Ignition Battery-powered, transistor-controlled
Air filtration Paper element, disposable
Oil filtration Paper element, disposable
Oil capacity 3.0 liters (3.2 qts.)
Bhp @ rpm 48.08 @ 10,000
Torque @ rpm 27.70 @ 8500

TRANSMISSION

Type Six-speed, constant-mesh, wet-clutch
Primary drive Hy-Vo-type, spur gears; 2.94:1
Final drive # 530 chain, 38/16 sprockets; 2.38:1
Gear ratios (overall) (1) 17.95 (2) 12.35 (3) 9.63
(4) 7.85 (5) 6.71 (6) 5.94

CHASSIS

Type Twin-downtube, full-cradle frame
Suspension, front... Leading-axle, coil/air-spring fork with 170mm of travel
rear ... Swing arm with one damper adjustable for damping and preload yielding 134mm of travel
Wheelbase 1450mm (57.0 in.)
Rake/trail 27.5° / 110mm (4.3 in.)
Brake, front ... Hydraulic, dual-disc, 226mm (8.9 in.) rotor, with single-piston calipers
rear .. Hydraulic, single-disc, 226mm (8.9 in.) rotor, with single-piston caliper
Wheel, front Cast, 19 x 1.85
rear Cast, 18 x 2.15
Tire, front 3.25 V 19 Bridgestone Mag Mopus-L303
rear 4.00 H 18 Bridgestone Mag Mopus-S7 16
Seat height 791mm (31.1 in.)
Ground clearance 168mm (6.6 in.)

Fuel capacity 15.1/3.4 liters (4.0/0.8 gals.)
Curb weight, full tank 210.5 kg (464.0 lbs.)
Test weight 283.0 kg (624.0 lbs.)

ELECTRICAL

Power source Single-phase generator
Charge control Regulator/rectifier
Headlight beams, high/low 60/55 watts
Tail/stop lights 8/27 watts
Battery 12V 12AH

INSTRUMENTS

Includes .. Speedometer, odometer, tripmeter, voltmeter, tachometer with 10,000-rpm redline; indicators for neutral, turn signals, high beam, headlamp failure, sidestand down, low fuel, battery and oil levels.
Speedometer error, 30 mph indicated, actual 30.68
60 mph indicated, actual 60.24

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