cycle guide

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EXCLUSIVE! KAWASAKI'S NEW KZ750

A NO-HOLDS-BARRED COMPARISON OF MECHANICS TRAINING SCHOOLS

AIR FORKS: HOW, WHY—AND WHY NOT

SON OF ELSINORE: HONDA'S RED FRAME CR250M

HARRY EVERTS: PORTRAIT OF A WORLD MX CHAMP

PHOTOGRAPHY: ART FRIEDMAN

KAWASAKI KZ750

The Commuter Special grows up

Once it became certain that Kawasaki would stop selling the explosive, asphalt-shriveling H-2 750 triple, people started speculating about what kind of bike the company would replace it with.

The H-2 was guaranteed to be a tough act to follow. It was the most awesomely powerful two-stroke ever to blister the streets of America. However, its back was eventually broken by changing tastes—and by its own shortcomings. Motorcyclists began seeking smoother, quieter, more tractable, and more reliable street machinery, but the H-2 was locked into its smoking-rubber-and-wheelies temperament, despite numerous attempts by Kawasaki to mellow the big triple. Riders became increasingly reluctant to accept the H-2's noise, vibration, toggle-switch power, reputed hinge-in-the-middle handling, outrageous thirst, and dubious reliability just to experience the occasional rush provided by the engine.

Rumor had it that the Z-2, a 750cc, for-Japan-only version of the potent four-cylinder Z-1, would succeed the two-stroke H-2. That seemed logical at the time, considering the immense popularity of multi-cylindered four-strokes. Other people forecasted that Kawasaki would build an all-new 750 four which would be smaller and lighter than the Z-1 or Z-2. Neither of those rumors was true, for Kawasaki decided to make its next 750 a four-stroke twin—the KZ750 B1.

The first question people ask when they hear of the KZ750 is "Why a vertical twin?" Surely the names of some 650 or 750cc vertical twins that have disappeared or floundered are legion: Matchless, BSA, Royal Enfield, Yamaha, Norton, and Triumph. And maybe that's the answer. Kawasaki believes the bikes in that category became extinct for one reason or another, but the market for those motorcycles didn't die. Considering the large quantities it takes to get the Japanese interested in building any motorcycle, Kawasaki must feel that the market for a bike like the KZ750 is considerably larger than generally acknowledged. Whatever the case, big twins have a lot of good things to offer if they can be rid of the few nagging drawbacks that have plagued them throughout their existence.

THE BIKE: The KZ750 B1's lower end is much like that of its little brother, the KZ400, but the top end is almost identical to what you'd find on the Z-1—minus two cylinders, of course. The dual overhead cams pop the valves open by banging directly on the ends of the valves instead of using rocker-type cam followers, and the valve clearance is adjusted by adding or subtracting shim washers in cups at the tops of the valve stems.

Because it offers better low-end power characteristics than a 180-degree layout, Kawasaki's engineers chose a 360-degree crankshaft. This means the pistons move up and down together, each cylinder firing alternately on every other revolution. To deal with the big twin's vibration, which has been the most conspicuous shortcoming of vertical twins, the KZ750 employs a pair of counterweights, one fore and one aft of the crankshaft. Driven by a chain from the middle of the four-main-bearing crank, the counterweights are intended to cancel engine vibrations by causing their own vibes that are equal in intensity but opposite in direction from those of the crankshaft and pistons.

A second chain in the crankcase drives the dual overhead cams and a third, located on the right end of the crankshaft, is a Morse Hy-vo primary drive chain. A chain-type primary drive was necessary because putting a rather large balancer behind the crankshaft meant the transmission had to be placed unusually far from the crank. A long crankshaft-to-mainshaft distance doesn't allow for reasonably-sized primary gears, so the wide, strong Hy-vo chain was the best alternate solution. This situation has caused the KZ750 to have two peculiarities: The far-out location of the five-speed gearbox causes the engine cases to be unusually long, and the chained primary requires the crankshaft to turn "backward" (clockwise as viewed from the left) to get the countershaft sprocket to rotate in the right direction.

The KZ750's lower end also includes

creepingly low nor abruptly high, but is still low enough to let you turtle along at a crawling pace with the clutch lever released.

The gearbox shifts easily, positively, and with an average-length lever throw. Although the "neutral finding" device used on some Kawasakis isn't included in the KZ750's shifting mechanism, locating neutral was always easy. The clutch is positive and progressive, but requires a moderately hard pull to disengage it.

The KZ750 has a designed-in flaw that is particularly annoying during low-speed driving. Like many Japanese street bikes, the KZ has a lot of slack in the drive train, most likely in the spacing of the gear engaging dogs in the transmission. Unless you roll the throttle on or off verrrry slowly, this slop is taken up with a lurch. In the lower three gears, the lurch is often violent enough to give the rider and passenger a neck-snapping jerk. The lurching was less noticeable in the higher gears, so we used fifth gear in speed-up, slow-down situations whenever possible.

Using the specified unleaded gasoline, the bike's worst mileage, 36 miles per gallon, was obtained during a particularly hammering ride on a very tight mountain road. Under less trying circumstances its best figure was 48 mpg, and the average for the test was 45.3 mpg.

HANDLING: With a gallon of gas in the KZ750, it weighs exactly 500 pounds; but it doesn't feel that beefy, whether you're straddling it at a stop or snailing along in constipated traffic.

The effortless steering and generally-light feel of the bike are no doubt due in part to the steering geometry: 26.5 degrees of steering rake and 4.1 inches of trail. But some of the potential steering quickness is nullified by a longish 58-inch (average) wheelbase. The bike feels lighter than a multi of comparable weight because the narrower engine is mounted low where you don't have to fight its weight every time you lean the bike over.

The KZ750 not only feels like a smaller bike in traffic, it continues to steer easily the faster you go. It will veer through an ess-bend with comparatively little rider effort, and it doesn't have that sometimes-unsettling tendency to fall toward the inside of the turn when the throttle is shut. Although the steering isn't exceptionally precise and accurate, you can change lines in a turn without much difficulty.

The bike is quite stable on smooth turns, whether you're cruising or hurtling through with the stands dragging. The lengthy wheelbase is largely responsible for the smooth-turn cornering stability, along with the front end geometry.

The bike isn't stable in all corners, though. If the pavement is slightly bumpy, the under-dampened suspension—both front and rear—will let the bike wobble mildly. But charging WFO through a turn at high speed and encountering a bump or a dip, the bike will wobble in no uncertain manner. The suspension is the main cause of the bumpy-road twitching and high-speed wobbling, but the chassis seems to contribute its two cents' worth.

The KZ feels more at home in slower, tighter bends and in around-the-city, street-corner-type turns, where its agility and light feel are most useful and where its unsophisticated suspension isn't taxed too greatly.

At a walking pace the bike is literally amazing. You can ride along trials style, barely moving, with your feet up and the steering steady. And it isn't difficult to make a circle slowly with the front fork turned to the stops and your boots on the pegs.

The traction department is looked after by two Bridgestones which work well on dry road surfaces and acceptably on wet. The ribbed front tire and front wheel are the same as those found on other big bore Kaws this year. The block-pattern 4.00H-18 at the rear is made of a fairly soft, sticky rubber. The tires work well enough to enable braver riders to drag the stands frequently in left-handers, and occasionally tick the footpeg in right-handers.

The suspension inadequacies don't keep the bike from feeling reassuring and stable at any speed in a straight line. You feel the bumps, but they don't deflect the bike from its course, and the weight keeps it from being bothered by side-drafts or slipstreams from nearby cars and trucks.

COMFORT AND RIDE: Vibration, long the bane of big vertical twins, is still present in the KZ750, but is kept to an acceptable degree. At 55 mph (about 4000 rpm) vibration will blur the mirrors a little, but not enough to cause any discomfort. Our testers complained that their hands got tired after a few hours of continuous riding at more-or-less-legal highway speeds, which is longer than most riders' hands would hold out on a non-

dynamic-balanced twin. At 6000 rpm and beyond, the engine buzzes in earnest, and the vibration becomes downright uncomfortable through the handlebars, despite their rubber mounts.

The seat is wide, long, and flat, providing a comfortable perch for the rider and passenger. Long distances and lots of hours will pass before your butt goes numb and begins to make you squirm, but when at a stop, short-legged riders like our five-foot-two Managing Editor will have to stretch to hold the bike up comfortably.

Although the grips are a tad small and hard, the handlebars are comfortable for most riders, particularly in traffic, where their length makes them a lever to further lighten the steering feel. However, the bars are just a smidgen too high to endear themselves to tourers who don't use windshields because they will have to poke up into the windstream too far. Otherwise, the bars combine handily with the seat and pegs to comfortably accommodate riders of most sizes. The bike feels taller, longer, and wider than most other vertical twins, but no aspect of this bigness makes the bike less comfortable.

The suspension's damping limitations affect the ride quality, which is just a little better than average. Although the suspension responds to most bumps and has enough travel to deal with large road surface irregularities, the suspension rebounds too quickly after reacting to a bump. You often feel the rebound more than the bump itself.

We've already mentioned the discomforting lurch that occurs when the throttle is opened or shut in the lower gears. This isn't as big an annoyance to the rider as it is to the passenger, who can't brace himself for the jerk. And the centerstand lug, sticking out to the side four inches past the left muffler, protrudes even farther than the footpeg. It can catch the back of your leg as you begin to roll away from a stop. And that hurts.

BRAKING: The KZ750's front and rear discs are both powerful and fade-free, and they provide comfortable stopping. However, the rear brake is a little insensitive, so you occasionally lock the rear wheel unintentionally at low speeds. The front brake is better. It is powerful, sensitive, and progressive enough to be easily controlled. We heard an occasional squeal from each brake during light use, but the noise never affected their operation.

RELIABILITY DURING TEST: *Cycle Guide's* KZ750 test machine was only the fifth one off the assembly line, which may partially explain its lack of oil-tightness. The engine developed about a half-dozen dirty spots where oil had seeped past the gaskets, and a leak around the crankcase breather was big enough to occasionally leave a small oil spot beneath the bike. However, the bike didn't leak enough to require the addition of oil.

We did have to add fluid to the front brake system reservoir because it was leaking around the cap when we got the bike. Filling the reservoir and properly re-tightening the cap solved that problem.

The only other failure of any sort was minor—a burned-out high-beam indicator bulb. The clutch needed adjusting one time after a lot of stop-and-go driving, but the maintenance we gave the bike was otherwise normal.

Since the valves use shims of different thicknesses for adjustment, you need a shim of the right thickness to get the desired clearance. That could mean a trip to your Kawasaki dealer every time you adjust the valves. However, if the 750 is anything like the Z-1—which uses the same system—the valves won't need adjusting very often.

Another service drawback is the oil filter: You must remove the left footpeg, the shift lever, and the countersprocket cover before you can get to it. On the other hand, the air filter element can be removed without tools, and the single set of points simplifies ignition timing. Cam chain adjustment is straightforward too.

SUMMARY: The KZ750—a twin-cylinder, four-stroke in a class composed mostly of multi-cylinder motorcycles—is obviously designed to please a different kind of motorcyclist. The KZ750 produces

THE TWIN IS DEAD; LONG LIVE THE TWIN

Supposedly, the big four-stroke vertical twin is virtually obsolete, having been replaced by electric-motor-smooth threes and fours. Only the middle-displacement twins linger, playing out little-brother roles as servile commuter workhorses or inexpensive entry-level machines.

Multi-cylinder motorcycles are now the most popular models of almost every company that makes them. The 750 Four is Honda's number one seller, the 900 Z-1 was Kawasaki's biggest mover until the low-buck, commuter-oriented KZ400 twin came along, and the Suzuki triples are the mainstay of that company's street line. Yamaha has not yet sold a multi street bike, but its dealers and customers are anxiously awaiting the introduction of the XS-750, an all-new, dual overhead cam, four-stroke triple.

So why has Kawasaki apparently gone against the grain and developed a 750 four-stroke two-cylinder motorcycle? Why didn't it sell the Z-2, a 750cc version of the Z-1 that has been available in Japan for years? The reasons are not as far-fetched as one might think.

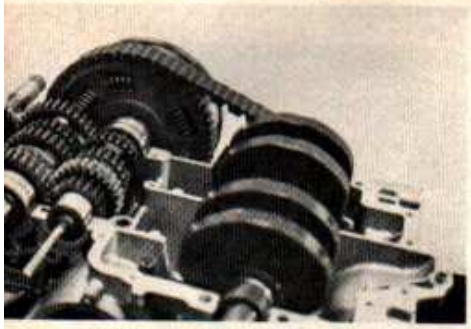
When Honda unleashed the 750 Four in 1969, most people's first-ride reaction was the same. They'd throw a leg over it, ride around the block, and come back smiling to comment, "Well . . . that's the end of the twin!" And indeed it nearly was. Honda followed the 750 with 500 and 350 Fours, Triumph did its 750 triple act, Kawasaki turned loose the 500 two-stroke triple, and Suzuki offered the 750 two-stroke water-cooled triple. Multi-mania was on the rampage. Soon there were more Kawasaki and Suzuki triples, and were it not for Yamaha, Norton, and Triumph, the big-bore twin would have been ancient history right then and there.

KZ750

KZ900 (Z-1)

its power in a much more pleasant manner than the multis for more casual riding like commuting or trips around the neighborhood. Since you don't need to wind the bejeesus out of it to get good, usable power, it also gets good gas mileage.

Although lacking some of the ingredients needed to make a good back-road play racer—notably suspension damping—the KZ750 is at least as easy-handling in heavy traffic as any other 750. Short rides won't buzz you, beat you, or tire you, and long rides will tire you no more than most machines. Two sets of disc brakes make it state-of-the-art in that department, providing straight, comfortable stops. Our machine, one of the first off the assembly line, was soiled by small oil leaks, but was otherwise quite reliable.



Using a chain primary drive with the clutch on one transmission shaft and the final drive sprocket on the other means the KZ750's crankshaft turns "backwards" from most other motorcycle engines.

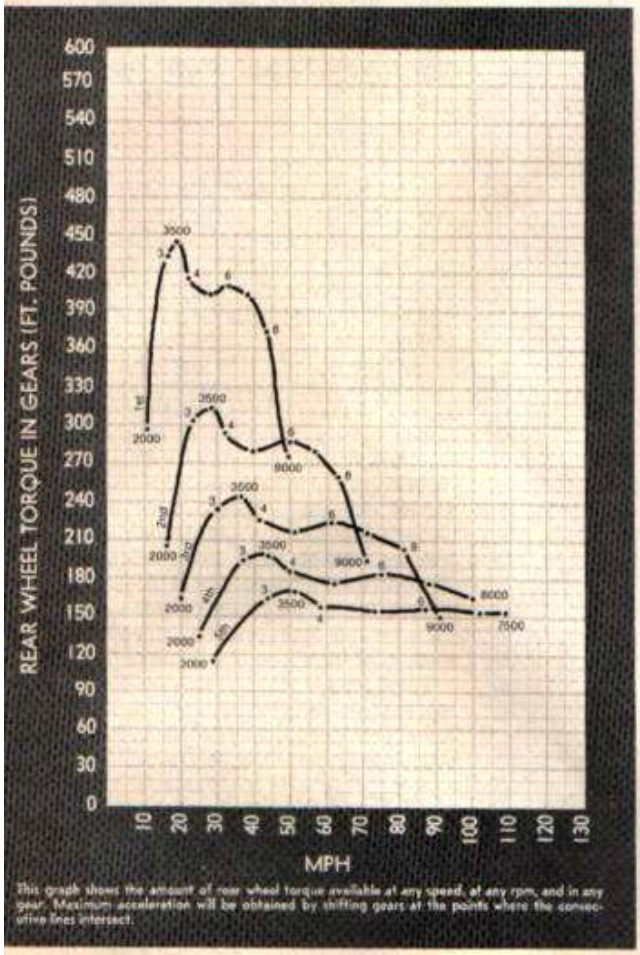
CONCLUSION: Not for the roadracer or the hard-bitten tourer, the Kawasaki KZ750 is aimed at the rider who takes motorcycling seriously enough to ride his machine daily and enjoys the power of a big engine. It's for the commuter who wants more motorcycle than he can get with the 250 to 500cc machines usually labeled "commuter bikes." And it's for the biker who rides a lot in the city, and makes few excursions down winding roads or across the country—a rider who's smart enough to know that a big multi-cylinder bike would only be added work in city riding. And it's for the rider with limited experience and ambition who wants a machine that's easy to ride, economical, and powerful enough not to be scoffed at by more experienced riders.

If you can't understand why someone would want something less than a four-star tire-smoker or if heavy footpeg-dragging sessions figure prominently in the plans for your next street bike, the KZ750 isn't for you. On the other hand, if you're puzzled by why anyone would want a big, heavy, 130-mph motorcycle when the speed limit is 55 mph, than maybe the KZ750 is just what you need. Its tractability, torque, easy handling, and civilized approach make it, in its own way, every bit as outstanding as the Z-1.

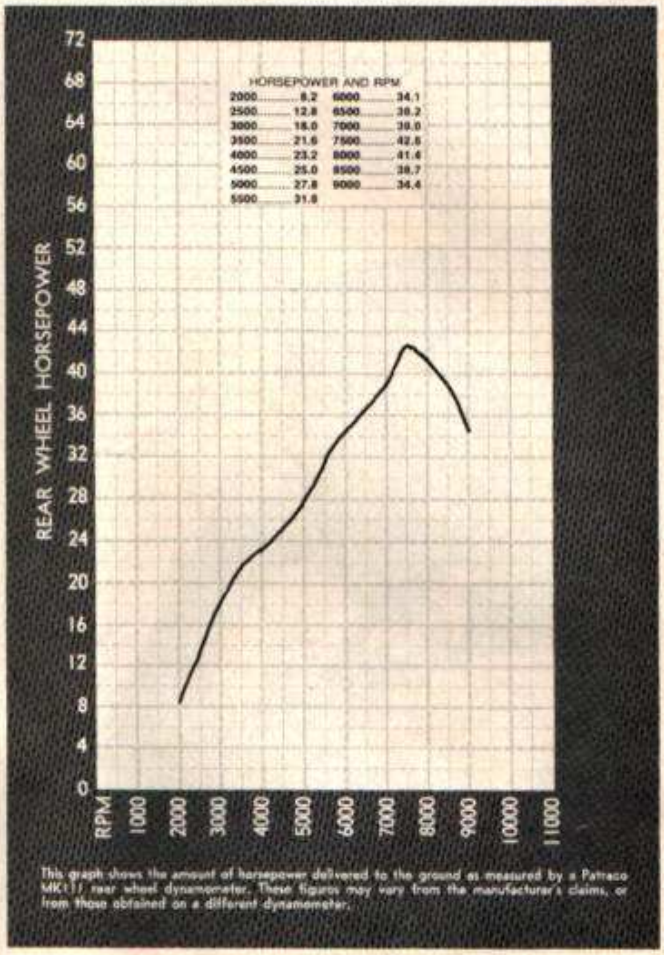
SPECIFICATIONS

Engine type	four-stroke
Cylinder arrangement	vertical twin
Valve arrangement	double overhead camshaft
Bore and stroke	78mm x 78mm
Displacement	745.3cc
Compression ratio	8.5:1
Ignition	battery/single point/single coil
Charging system	12-volt, AC generator, voltage regulator, rectifier
Carburetion	two 38mm Mikuni constant-velocity
Air filter	disposable paper element
Lubrication	wet sump, 4.2-qt. (4-L) sump capacity
Primary drive	Morse Hy-vo chain, 2.48:1 ratio
Clutch	wet, 8 drive plates, 7 driven plates
Starting system	electric and kick-in-neutral
Transmission	5-speed, left-foot shift
Overall drive ratios	(1) 13.73; (2) 9.59; (3) 7.49; (4) 6.12; (5) 5.23
Transmission sprocket	16-tooth
Rear wheel sprocket	38-tooth
Drive chain	⅝-in. pitch, ⅜-in. width (#530)
Front fork	4.4 in. (111.8mm) travel
Rear shocks	3-way adjustable, 3.9 in. (99.1mm) rear wheel travel
Front brake	11.7-in. (297.2mm) disc, single-action hydraulic caliper
Rear brake	11-in. (279.4mm) disc, single-action hydraulic caliper
Front tire	3.25H-19 Bridgestone rib
Rear tire	4.00H-18 Bridgestone universal
Frame	tubular mild steel, double front downtube
Steering head angle	26.5 degrees from vertical
Front wheel trail	4.13 in. (105mm)
Wheelbase	57.6 to 58.5 in. (146.3 to 148.6cm)
Length	84.5 in. (214.6cm)
Weight distribution	46.8% front, 53.2% rear
Ground clearance	6.4 in. (162.6mm), at muffler clamp
Seat height	32.6 in. (828mm), unladen
Handlebar width	30.5 in. (774.7mm)
Handlebar grip height	43.7 in. (111cm)
Footpeg height	11.8 in. (299.7mm)
Instrumentation	speedometer, tachometer, tripmeter resettable to zero
Speedometer error	30 mph indicated, 28 mph actual 60 mph indicated, 57 mph actual
Gas tank	steel, 3.8 gal. (14.4L)
Gas consumption	45.3 mpg (19.3 km/L)
Best ¼-mile acceleration	14.4 sec., 91.2 mph (146.7 kph)
Stopping distance from 30 mph	35 ft., 1 in. (10.7m)
Stopping distance from 60 mph	135 ft., 5 in. (41.3m)
Sound level per SAE XJ 331a	83.2 db(A)
Suggested retail price	$1990 East Coast, $1975 West Coast

KAWASAKI KZ750 B1



This graph shows the amount of rear wheel torque available at any speed, at any rpm, and in any gear. Maximum acceleration will be obtained by shifting gears at the points where the consecutive lines intersect.



This graph shows the amount of horsepower delivered to the ground as measured by a Petraco MK111 rear wheel dynamometer. These figures may vary from the manufacturer's claims, or from those obtained on a different dynamometer.