



KAWASAKI KZ400

Proof That High-Volume, Low-Buck Mediocrity Is Still The Key To Success

■ COMMUTER BIKES ARE very difficult to evaluate properly within the time frame of a normal road test. Sure, we can tell you how they handle, what kind of mileage they get, and whether or not they vibrate, but we can only speculate as to reliability and related maintenance costs.

In order to overcome this shortcoming, CYCLE WORLD occasionally singles out a commuter bike and literally runs the wheels off it. Our first victim was a CB350 Honda, once the undisputed leader in its class. Our latest reliability contestant is Kawasaki's KZ400, the only mid-sized economy challenger released to date.

THE TEST

At the outset, we had decided to put 5000 miles on the KZ. At least 50 percent of that total was registered commuting

**Cycle
World
Road
Test**

back and forth to work. Everyone on the staff took his turn. Some day trips into the local mountains and a 2000-mile odyssey into Mexico gave us an indication of the machine's highway stamina. All maintenance was performed at Champion Motorcycles, a local Kawasaki dealer, at the intervals prescribed in the owner's manual. All operating expenditures have been categorized and are presented later in the test.

HANDLING AND PERFORMANCE

The KZ400 is not one of those motorcycles that you instantly fall in love with. In fact, it isn't even a bike that you feel totally at ease with right away. It runs along in a straight line all right, but it feels vague in turns regardless of the speed. If you go fast, you can't hold a line. Go slow in traffic and the bike feels like it wants to fall over. What all this means is constant steering correction...and that drives you nuts until you get used to it.

We've encountered these characteristics before, but with considerably more catastrophic results than with the KZ400. Most bikes that won't hold a line have severe enough chassis or



suspension problems to cause tank-slappers at speed. That's what's odd about the KZ. No matter how fast you go or how hard you push it, it feels the same. It wiggles and searches down the road. That's it.

The bike, then, definitely isn't dangerous. It just isn't right. When we first tested the 400, in July of 1974, we felt the problem lay with the suspension, not the frame. So this time we modified the suspension to see if that would help.

First off, we disassembled the forks up at Number One Products and put them on the dyno. That led us to the conclusion that there was too much compression damping. Drilling out both compression holes in the damper rod to 3/16 in. proved to be a partial cure. The bike rode smoother over Bots dots, holes in the pavement and the like, but it was still no BMW. And the steering still felt vague.

Not willing to give up, we installed a Kawasaki KX125 fork kit (kit number 144) that is marketed by Number One Products. The kit extends fork travel an inch by lengthening the stock damper rod. This in turn raises the front of the KZ400 an inch, and that slows down the steering. In order to >





Tire wear at the 3000-mi. mark.



Photography: Bob Atkinson, D. Randy Riggs





soften up the ride and make use of the extra travel, a pair of 26-lb. springs were fitted. (These are included in the kit).

When we got the bike back out on the highway, we were really amazed that it didn't handle anything like it had before we began. All of a sudden the vagueness and wandering were gone. Straight-line stability had increased, and the KZ would now, at most speeds hold a line in turns. The trade-off is heavy steering at low speed. Additionally, to get the bike to turn at 50 mph or so, you must pull it down to the proper angle of lean, because it wants to run straight.

For normal riding or commuting, the front-end modification took away most of our objections. But on the trip to Mexico, running along on bumpy roads, the rear shocks turned to junk. By *junk*, we mean the damping disappeared, causing

the machine to wiggle all over again. The cure is shock replacement. A set of Konis with the damping set a turn or a turn and a half from soft, and a pair of 88-lb. springs, work well for solo riding. If you like to pack double, 100-lb. springs would be a better choice.

With the Konis in place, the KZ400 becomes an ideal commuter bike. It's stable. It has a plush ride and it corners well enough to keep a rider on two wheels if he enters a turn too hot. With a claimed 35 bhp on tap, that's all you need.

Without a doubt, good brakes are an asset around town or out on the freeway in rush-hour traffic. The disc-brake-equipped version of the KZ (like our test bike) has plenty of stopping potential; and both the disc and the rear drum unit wear quite well. At 5000 miles, both the pucks and rear lining were in excellent condition.

Still, the KZ is not an excellent stopper. The reason is inexpensive tires. The rear one skids all too easily and the front is not that much better. But better tires cost money, one might reason, and commuters are reluctant spenders. Up front this is probably true, but the argument becomes somewhat invalid when you consider the fact that the stock tire only lasts 3 to 4000 miles. At 3000 miles, the original equipment on our machine was bald in the center. At 4000 miles, all of the center rib patterns had disappeared. We finally replaced the tire at 5000 miles (we couldn't find a suitable replacement while out of town just after the tire caused the only getoff we encountered with the machine). A set of Dunlops or Good-years, which last 6 to 10,000 miles on bikes this size, are far better investments.

Commuters will greet the engine with mixed emotions. From an overall reliability standpoint, they will love it. They'll love it because you just can't break it. We know. We tried. There are two 100-mi. straightaways between Ensenada and LaPaz. The KZ400 covered each stretch in approximately an hour's time. The temperature down South was well above 100 and the rpm never wavered below 9000. Nothing broke. Engine performance did not change. Only the exhaust pipes suffered. They turned violet and blue clear down to the lower bend.

For the remainder of that trip down Mexico way ("Just Passin' Through," September '75 CW), we averaged 75 or 80 mph, and that too proved no problem for the engine. Wet or dry, hot or cold, it simply runs. The only thing that varies with operating conditions is oil consumption. If you run the engine hard on a hot day, oil consumption will jump to as much as one quart every 400 miles. With 70 to 80-degree weather and 55-mph speeds, consumption is as low as one quart every 1500 miles. And this ratio has not changed much with mileage.

From a vibration standpoint, those who have ridden big Multis or enjoy riding fast, will be disappointed. The KZ vertical Twin, in spite of its contra-rotating weights, shakes above 5000 rpm. The higher the rpm, the worse the vibration. So, at 55 mph, everything is fine. At 60, images in the rearview mirror get blurry and discomfort sets in.

Any time engine idle is required, the KZ400 and the rider will be at a loss. Because of the constant velocity carburetors, the engine stalls frequently when the throttle is snapped shut. And if you let the engine idle very long, rpm will vary a lot... say as much as 1500 turns per minute. All we can say is, keep your battery charged, because you have to restart the KZ a lot during rush hour.

Now for the bummer. Most KZ400s manufactured in 1975 leak oil. Our test bike was no exception. At the 1500-mi. mark, oil started seeping out around the base gasket and the left rear cylinder stud. We decided to put up with the leak until the 2000-mi. inspection, at which point we had it >

PARTS PRICING

Warranty	6 mo.
Major Tuneup	\$28.00
Air Filter Element	10.90
Rear Tire (standard)	26.51
Drive Chain (standard)	18.00
Headlight Bulb or Sealed Beam	10.90
Taillight Bulb	.75
Turn Indicator Bulbs	.75
Battery	24.95
Clutch Cables	5.40
Throttle Cables	14.40
opening	7.20
closing	7.20
Brake Cables	10.50
Ignition Parts	
Points, ea.	5.40 (2 sets)
Condenser	5.30
High Tension Coil	21.30

PERIODIC MAINTENANCE CHART

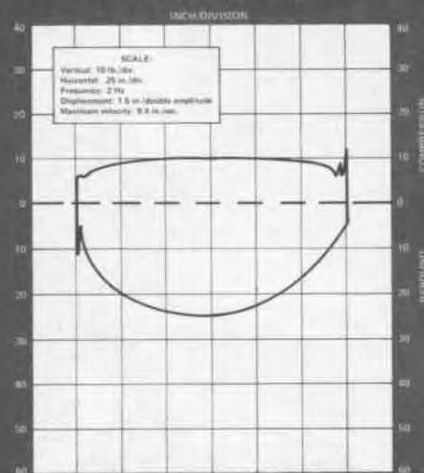
Operation	Frequency	After initial 500 mi.	After initial 2000 mi.	Every 2000 mi.	Every 4000 mi.
Change engine oil		•	•	•	
Replace oil filter		•	•		•
Adjust brakes		•	•	•	
Adjust drive chain		•	•	•	
Check, adjust clutch mech.		•	•	•	
Check, adjust carburetors		•	•	•	
Check spoke tightness and wheel runout		•	•	•	
Tighten nuts and bolts		•	•	•	
Clean fuel tap		•	•	•	
Clean, set spark plug gap		•	•	•	
Adjust cam chain		•	•	•	
Check steering play		•	•		•
Check valve clearance		•	•		•
Carry out general lube			•	•	
Clean air cleaner element			•	•	
Adjust points, check timing		•	•	•	
Check tire wear			•	•	
Check drive chain wear			•	•	
Lubricate swing arm			•	•	
Lubricate cables			•	•	
Lubricate drive chain		Every 200 mi.			
Check brake wear		Every 4000 mi.			
Check front fork oil level		Every 4000 mi.			
Change air cleaner element		Every 6000 mi.			
Change front fork oil		Every 6000 mi.			
Change brake fluid		Every year or 6000 mi.			
Regrease wheel bearings		Every 2 years or 12,000 mi.			
Regrease speedo gear box		Every 2 years or 12,000 mi.			
Regrease brake camshaft		Every 2 years or 12,000 mi.			
Lube steering stem bearings		Every 2 years or 12,000 mi.			

repaired. The fix consisted of removing the stud and filling the stud hole with silicone seal. With the silicone seal in place to keep oil from running up the threads, the stud was replaced, the head was retorqued, and the leak was temporarily fixed.

A thousand miles farther down the road, the oil leak reappeared. This time we called Kawasaki Motors and discovered the reason for the leak was that the rear cylinder studs often broke through to nearby oil galleries when the head was torqued down. They said the silicone seal should have worked, but that they were trying to come up with a more permanent cure.

Well, on October 24th, that cure arrived and—although a bit late—it works quite well. Basically, the fix consists of replacing gaskets and O-rings with redesigned sealing components at nine locations in the top end of the engine. Time required is estimated at three and a half hours. Cost to the owner is zero, and that certainly makes the problem easier to live with.

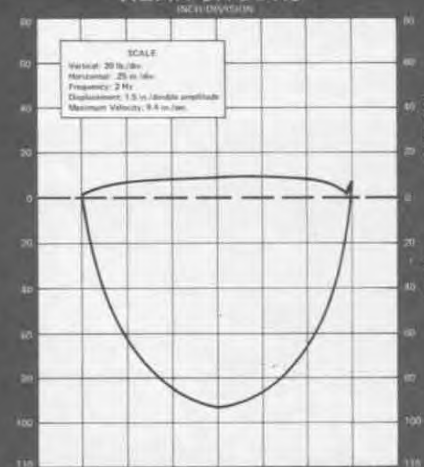
SUSPENSION DYNO TEST FRONT FORKS



Description: Kawasaki KZ400 fork
Fork travel, in.: 5.0
Spring rate, lb./in.: 43
Compression damping force, lb.: 10
Rebound damping force, lb.: 24
Static seal friction, lb.: 4

REMARKS: Compression damping is too high. Drilling out both compression holes in the damper rod to 3/16 in. will improve the ride, because this allows the forks to react to small bumps and seams in the road. There is not enough rebound damping for the standard spring. We wanted a softer ride up front, however, so we went to a 26-lb. spring and left rebound damping alone.

REAR SHOCKS



Description: Kawasaki KZ400 shock
Shock travel, in.: 3.0
Wheel travel, in.: 3.5
Spring rate, lb./in.: 115
Compression damping force, lb.: 8
Rebound damping force, lb.: 92

REMARKS: The ratio of compression to rebound damping is good, but the damping rates are too light. Both compression and rebound should be 5 to 6 lb. higher. The spring rate is a little high, but that is necessary to compensate for the low compression damping. Construction of this shock is marginal and damping is inconsistent because the oil reservoir is too small to prevent rapid heat buildup. Replacement is the best solution.

Tests performed at Number One Products

KAWASAKI KZ400

SPECIFICATIONS

List price	\$1185
Suspension, front	telescopic fork
Suspension, rear	swinging arm
Tire, front	3.25-18
Tire, rear	3.50-18
Brake, front, diameter x width, in. (2)	10.91 x 1.5
Brake, rear, diameter x width, in.	7.09 x 1.18
Total brake swept area, sq. in.	122.06
Brake loading, lb./sq. in. (160-lb. rider)	4.53
Engine, type	four-stroke, vertical Twin
Bore x stroke, in., mm	2.52 x 2.44; 64 x 62
Piston displacement, cu. in., cc	24.28; 398
Compression ratio	9.0:1
Claimed bhp @ rpm	35 @ 8500
Claimed torque @ rpm, lb.-ft.	22.9 @ 7500
Carburetion	(2) Keihin CUB 36 mm
Ignition	battery and coil
Oil system	gear pump, wet sump
Oil capacity, pt.	6.4
Fuel capacity, U.S. gal.	3.7
Recommended fuel	premium
Starting system	kick, electric
Lighting system	12V generator
Air filtration	treated paper
Clutch	wet, multi-disc
Primary drive	Hy-Vo chain
Final drive	(3/8 x 5/8) single-row chain
Gear ratios, overall:1	
5th	6.49
4th	7.59
3rd	9.29
2nd	12.30
1st	18.78
Wheelbase, in.	53.3
Seat height, in.	31.75
Seat width, in.	9.5
Handlebar width, in.	31.5
Footpeg height, in.	11.0
Ground clearance, in.	5.1
Front fork rake angle, degrees	27
Trail, in.	3.9
Curb weight (w/half-tank fuel), lb.	393
Weight bias, front/rear, percent	46.3/53.7
Test weight (fuel and rider), lb.	553
Mileage at completion of test	5045

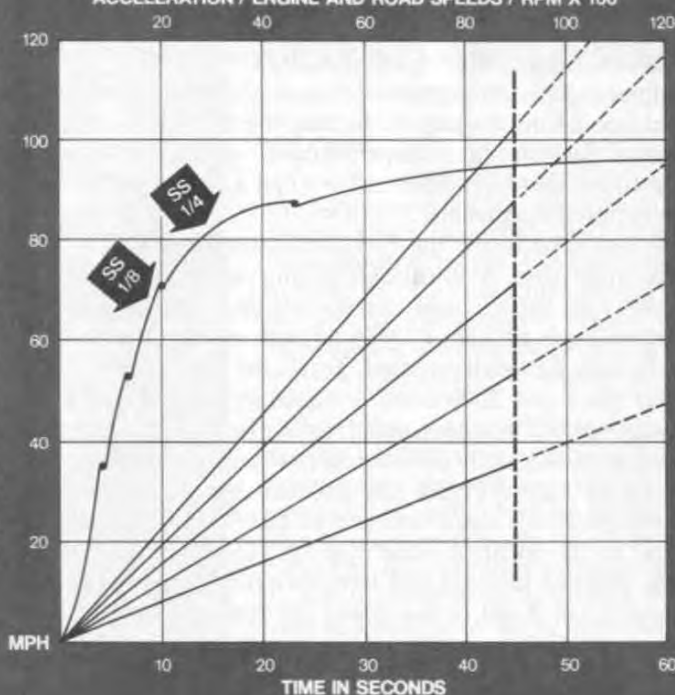
TEST CONDITIONS

Air temperature, degrees F	75
Humidity, percent	58
Barometric pressure, in. hg.	30.25
Altitude above mean sea level, ft.	383
Wind velocity, mph	4-6

PERFORMANCE

Top speed (actual @ 8125 rpm), mph	93
Computed top speed in gears (@ 9000 rpm), mph	
5th	103
4th	88
3rd	72
2nd	54
1st	36
Mph/100 rpm, top gear	11.44
Engine revolutions/mile, top gear	5255
Piston speed (@ 9000 rpm), ft./min.	3600
Lb./hp (160-lb. rider)	15.80
Fuel consumption, mpg	37-44
Speedometer error:	
50 mph indicated, actually	50.13
60 mph indicated, actually	59.32
70 mph indicated, actually	68.28
Braking distance:	
from 30 mph, ft.	42
from 60 mph, ft.	151
Acceleration, zero to:	
30 mph, sec.	3.1
40 mph, sec.	4.2
50 mph, sec.	5.8
60 mph, sec.	7.8
70 mph, sec.	9.6
80 mph, sec.	13.5
Standing one-eighth mile, sec.	9.47
terminal speed, mph	69.65
Standing one-quarter mile, sec.	15.27
terminal speed, mph	83.02

ACCELERATION / ENGINE AND ROAD SPEEDS / RPM X 100





KAWASAKI

ECONOMY AND COST OF OPERATION

Of paramount importance with any commuter bike is the cost of operation. Because bikes like the KZ are most often purchased by first-time buyers and/or people who aren't interested in matters mechanical, we had a dealer perform all of the required maintenance.

The first service (see the Periodic Maintenance Chart), is a 500-mi. inspection. At this point in time, our KZ was running fine, so the service was purely routine. Labor for the inspection came to \$28. Oil (\$3.45) and an oil filter (\$4.80) were the only materials required. Total cost was \$35.25.

After the initial 2000 miles, a second service is required. At this point the KZ was leaking oil, so our instructions included fixing that, along with performing the routine service. Labor again totaled \$28. Fixing the oil leak was handled under warranty. Materials again included oil (\$3.45) and an oil filter (\$4.80), for an identical total cost of \$35.25. Both of these services required one day and were no more troublesome than taking your car down to the corner gas station for a lube job.

After the first two checks, maintenance should be performed at 2000-mi. intervals. The closest we could come to the schedule was 3045 miles (we were on a trip), and at that point we returned the KZ to the dealer. The oil leak had returned but again there was no charge, and this time the dealer had the factory recommended cure in hand. So, no more problems with that. The rear tire needed replacing. Labor for that was \$12. The tire cost \$26.51. Two B8ES NGK

sparkplugs were also required, for a total cost of \$2. Add to that the standard service charge of \$28, the \$3.45 for oil and the \$4.80 for a filter, and the total came to \$76.76.

Total maintenance for 5045 miles, then, cost \$147.26. Ninety-six dollars of that could be saved if you did the work yourself...and that is not out of reach for anyone who is mechanically inclined!

Gasoline is the only remaining expenditure. During the 3000-mi. period that we commuted back and forth to work and used the machine for short weekend rides, the KZ averaged 44 miles per gallon. The Mexican trip accounts for the remaining 2000 miles. Running hard with luggage, the bike managed 37 mpg. Total fuel purchased for 5000 miles was 122.2 gallons. At an average cost of 60 cents per gallon, that comes to \$73.34.

Total operating cost was \$220.60, which figures out to 2.3 cents per mile for the first 5000 miles. Needless to say, the KZ400 is easy on your wallet.

We've been critical in our comments about the KZ400, but no more critical than any long-term owner would be. We've considered all the pros and cons and have come to some definite conclusions about the machine. First of all, if you're an enthusiast, if you favor unique design and won't settle for less than ultimate performance, don't waste your time here.

But if you're like that, realize that you are in the minority. Most motorcycle buyers can live with the KZ's vague handling. Some will not even notice it. The bike is definitely reliable, it has a good warranty, and it is economical to operate...all of which means precisely one thing: the KZ400 is exactly what Kawasaki claims it to be, a damn fine commuter bike. 