

Tests: BMW R80 ST, Yamaha IT250
Honda CR125R and Nighthawk 550
24 best tools to fix your bike

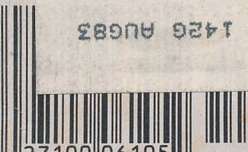
CYCLE WORLD

OCTOBER 1983

\$1.50 £1.15

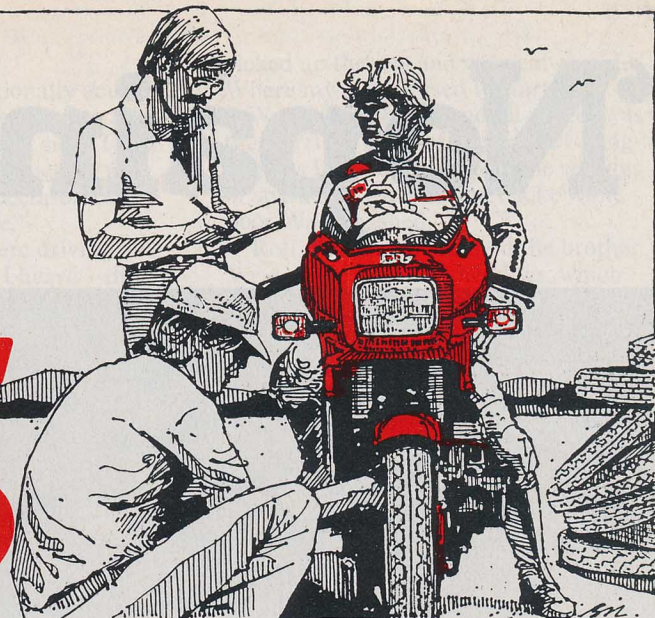
**SPORT
TIRES:
PICKING
THE
BEST**

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27100-06105

At the end of a week of testing, four test riders independently found two sets of tires that worked better than the rest.



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VOL. 22 NO. 10

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COVER

The best tires in the world compared.

Photographed by Jeffrey Zwart

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Everybody likes power, whether they prefer their handlebars wide and tall or narrow and low, and some of the biggest skirmishes in the horsepower war are being fought in the 550 class.

Which introduces the Nighthawk 550, Honda's horsepower entry in the non-low-bar 550 market, a bike with cruiser styling and high performance.

There's no mistaking the styling. There's chrome everywhere, a short chrome front fender on long, leading-axle forks; chrome headlight, carburetor

mary gears, hydraulic multi-plate wet clutch, six-speed transmission, shaft final drive. This is the smaller version of Honda's newest inline Four, introduced in the Nighthawk 650 and Nighthawk 550 for 1983. The engines share crankcase castings, clutch, transmission and cylinder head. The 572cc 550 has lower primary gearing and the same 60mm bore as the 650; stroke is shorter; 50.6mm to 58mm. To work with the 50.6mm stroke, the 550 has shorter connecting rods, crankshaft throws and cylinders. The crankshaft, designed for the 572cc version, is lighter with 1mm smaller diameter journals; the cases are machined to fit.



CYCLE WORLD TEST: HONDA NIGHTHAWK 550

SPEED WITH STYLE

caps, rear shocks, turn signals, instrument covers and pullback handlebars; chrome exhaust with rakish, diagonal-cut mufflers. What isn't chrome is likely to be polished aluminum, like the headlight mounts, the instrument panel, the grab bar outlining the stepped seat, the cam cover, the fork sliders, the footpeg bases, the rear footpeg-and-muffler hangers, the engine covers.

If there's still any doubt, it's displaced by the tiny teardrop gas tank, the stubby tail section, the cut-back sidecovers and the fat, 16-in. rear wheel.

This is a cruiser. What about performance? Look at the horsepower and torque figures, 64 bhp at 9500 rpm, 36.5 lb.-ft. at 8000 rpm. Potent stuff for a 550 Four, and the reasons for that power output lie in the engine's genealogy.

Air-cooled, dohc, link-plate cam chain, four valves per cylinder, offset rocker arms with hydraulic lash adjusters, plain bearing crankshaft, helical pri-

This engine is designed to be compact. It is narrow, the alternator mounted behind the cylinders, overdriven off the crankshaft by a link-plate chain. It is short, the transmission shafts staggered vertically instead of laying one behind the other.

It's also designed for low maintenance. The hydraulic lash adjusters automatically take up clearance between valve stems and rocker arms—meaning no valve adjustment is necessary—and pump down if the engine is over-revved, increasing clearance and reducing the chances of a mis-shift bending the valves. The transistorized electronic ignition is not adjustable, and has electronic advance. The hydraulic clutch, like hydraulic disc brakes, is self-adjusting.

Low maintenance doesn't mean low performance. The 550 has the same cams as the 650, and, used with the smaller engine, those cams are closer to the high-performance grinds sold by

aftermarket engine builders than are most stock camshafts. The four Keihin CV carbs have oval throats, 26.8mm at the venturi, 30mm at the throttle plate, with lightweight throttle slides and thin diaphragms for instant throttle response. Combine the cams and the carbs with the lighter crankshaft and you've got a quick-revving, free-winding 550 that feels faster than anything in the class.

It feels fast because it has a big jump in horsepower and acceleration at 7000 rpm, gaining engine speed from there at an astonishing rate right up to the 10,000 rpm redline. It pulls well from 4000 rpm, well enough to leave lights quickly and have fun gaining speed, but then there's

sec. and 102.27 mph. That's about as fast as a 1982 GPz550 and not as fast as a 1983 Suzuki GS550, even though the Nighthawk feels quicker than both.

The caveat here is that the Honda may *be* quicker than the Suzuki or the Kawasaki, or at least may have the potential to be quicker. The problem is that the 550's clutch is like other hydraulically-activated clutches—using a master and slave cylinder connected by an easy-to-route hydraulic hose—from Honda: grabby and imprecise. Add a grabby clutch and a peaky engine without the torque of, say, a VF750F, and you've got a handful at the dragstrip. Ridden by the same rider, the Suzuki is quicker than (and the



that kick at 7000 when the Nighthawk comes on the cams, and off it goes.

There's nothing to distract the rider from that magic rush of the tach needle toward redline, since the rubber-mounted engine is one of the smoothest ever put in a motorcycle. That glass-smoothness adds an eerie quality to the soaring tach and the kick-in-the-pants acceleration.

Slam the 550 into second gear at redline and the front wheel comes up and floats a foot or two off the ground, slowly settling as the bike continues to gain speed. Keep the Nighthawk near the redline, shifting quickly, and a rider on anything short of a sporting 1100 will have to work to keep up or pass. Street impressions send a strong message, that this is the most potent, quickest, fastest 550 around.

A trip to the dragstrip brought some surprises. The Honda Nighthawk isn't the fastest 550, with a best pass of 12.64

Kawasaki about the same as) the Honda. Both the Suzuki and the Kawasaki have cable-operated clutches with broad engagement points and easy-to-modulate release.

As for top speed, the 550 reached 116 mph in the running half mile, eight mph slower than the GS550.

That's as fast as the Nighthawk will go, since 116 mph equals 10,000 rpm (redline) in fifth gear. It won't go any faster in its extra-tall sixth gear (Honda calls it Overdrive), and it will only go that fast in sixth if the Honda is first run to the redline in fifth. Start accelerating at 60 mph in sixth and the Nighthawk struggles to top 100 mph under the best conditions.

What we have in the Nighthawk is a typical 550's five-speed transmission with an additional, taller cruising top gear added. Look at the GS550—it's also geared for 116 in fifth (top), happily revs past redline to 124 mph in the half-

High performance motorcycles don't have to be styled like racebikes. Honda's Nighthawk 550 is clearly out of the Custom mold, but with lots of horsepower.

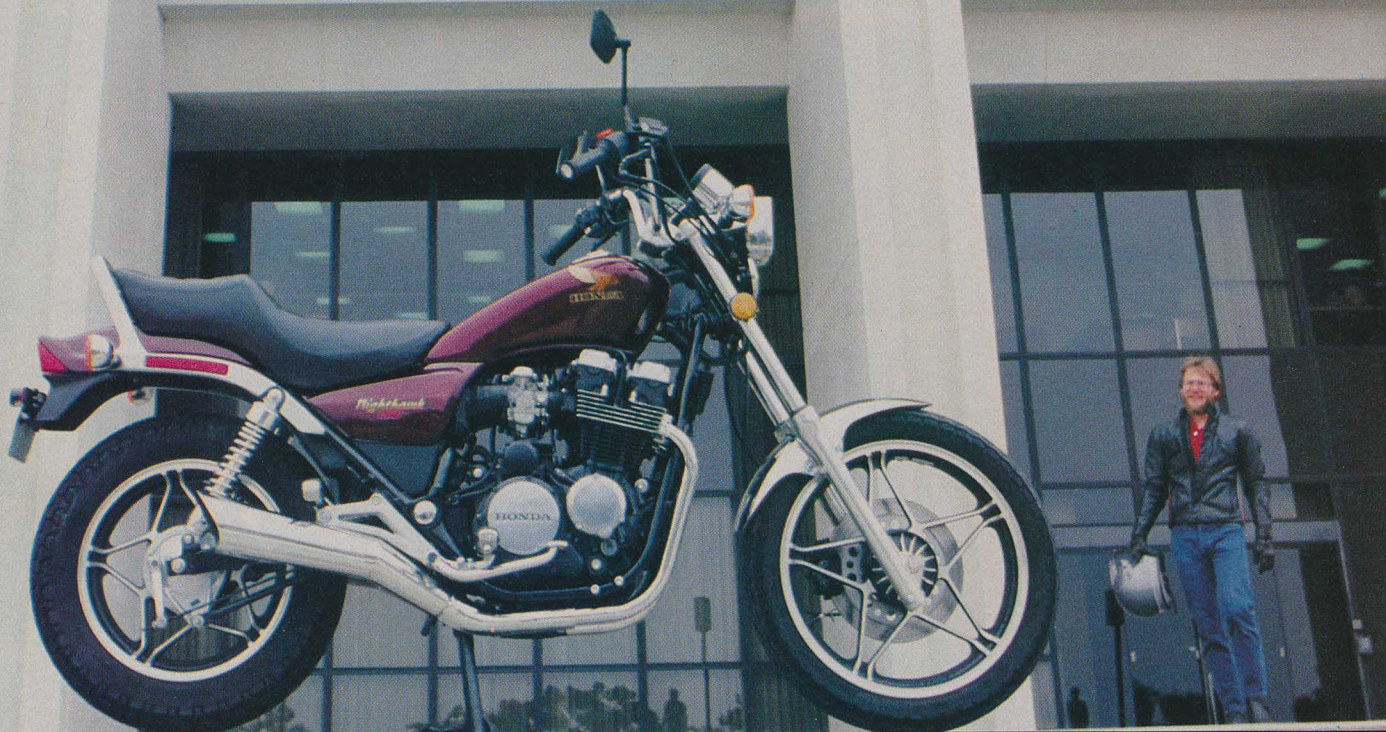
mile, and turns 5200 rpm at 60 mph. The Nighthawk's tall sixth gear, on the other hand, is made for highway cruising at a leisurely pace, bringing engine rpm at 60 mph down to 4400 rpm from fifth gear's 5200 rpm.

Which makes it easy to understand why the Honda's top-gear acceleration times are much slower than the competition. The Nighthawk needs 6.6 sec. to accelerate from 40 to 60 mph in top gear (the GS550 takes 4.7 sec.) and 10.8 sec. to run from 60 to 80 mph in top (the GS550 needs 5.6 sec.)

At 60 in sixth, the Nighthawk is relaxed on the highway but accelerating

tank sucked dry in just 73 mi.

The steel frame is conventional, built to be inexpensive, a single large backbone tube tied into the steering head with gusset plates, and twin downtubes cradling the engine. The steering stem uses ball bearings. The steel swing arm pivots on tapered roller bearings and uses two shock absorbers, which have spring preload adjustments only. The leading-axle, air-adjustable front forks have a forged aluminum alloy brace between the sliders, and there's a single hydraulic disc brake. TRAC anti-dive is not used. Wheels are cast aluminum, a 2.15 x 19 in. front and a 3.00 x 16 in. rear, and the



Most of the 550 Nighthawk parts are shared with the super-speedy 650 Nighthawk. The smaller model gets more extreme styling and less speed.

quickly around slower traffic demands at least two downshifts, and headwinds or upgrades often require fifth gear. Cruising above 70 mph usually means spending more time in fifth than sixth gear, which, despite the 550 having a lower primary ratio than the 650 Nighthawk, is close to being too tall for the engine.

The carburetors, which work very well at most engine speeds, have a lean spot right at 4500-5000 rpm, the engine just a bit reluctant to pull, hesitating when the throttle is rolled on in that range. It takes full choke to get started in the morning, and at least half choke for a mile or two before the engine warms up, even in the summer.

That stylish, sleek gas tank makes the rider pay for its looks with a small, 3.2-gal. capacity. Under the best conditions, the tank holds enough fuel for 153 mi. before reserve. Typical riding demands reserve after 120 or 130 mi., and the hardest open-road running saw the main

rear wheel houses a mechanical drum brake.

The 550 is essentially a version of the 650. It is a little smaller, the wheelbase measuring 56.7 in. to the 650's 57.5 in., thanks to a shorter swing arm. The 550 has 29° of rake (the 650 has 28.5°) and 4.2 in. of trail (the 650 has 3.9 in.). The 550 is lighter, 440 lb. with half a tank of gas, compared with the 650's 465 lb. with half a tank.

The 550's shorter swing arm has a couple of noteworthy effects. Because the rider and the engine are closer to the rear wheel, the 550 is more liable to wheelie under hard acceleration than the 650. Because the swing arm is shorter, stiffer shock springs and damping must be used to control jacking of the drive-shaft rear end under power, and the stiffer suspension is choppy over repetitive bumps.

The 550 has noticeable driveline snatch, especially at moderate speeds

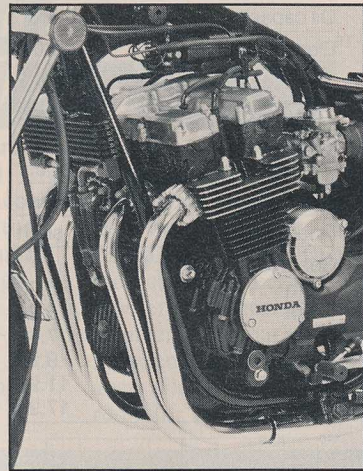
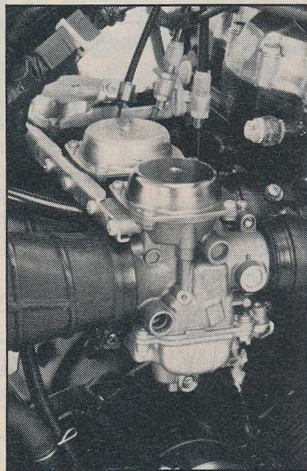
around town. The light carburetor diaphragms, which do so much for crisp, snappy response, are partially to blame here. The slightest movement of the twist grip has an immediate action at the carburetors, and any slack in the driveline is taken up instantly. There's a spring-loaded, ramp-and-cam damper built into the driveshaft. The damper helps isolate the transmission from road shocks but also contributes to the slop in the driveline.

Anybody taking the 550 farther than the corner grocery will find that the seat is hard enough to attract the rider's attention after 20 or 30 min. The seating

though they are prone to outrageous optimism. The speedometer reads 60 mph at an actual 53 mph. All the usual lights are provided, the headlight doing a fine job of illuminating the road, the manually-cancelling turn signals maintaining a constant tempo in the face of changing engine rpm. The choke control is on the left handlebar, right at thumb's reach, rotating up and down. The control buttons, such as the one for the reasonably-loud horn, are chromed plastic, as are the screw-on covers for the fork air caps.

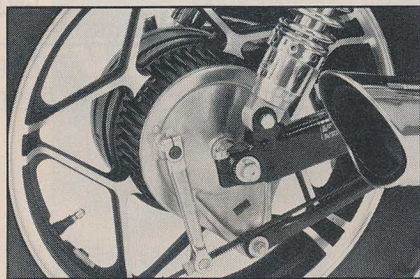
On the other hand, the helmet locks are nothing more than hooks under the

Instrument-obscuring glare is a problem when the Nighthawk's polished aluminum panel reflects low-angle sun into the rider's eyes. Chrome headlight and fork covers don't help.



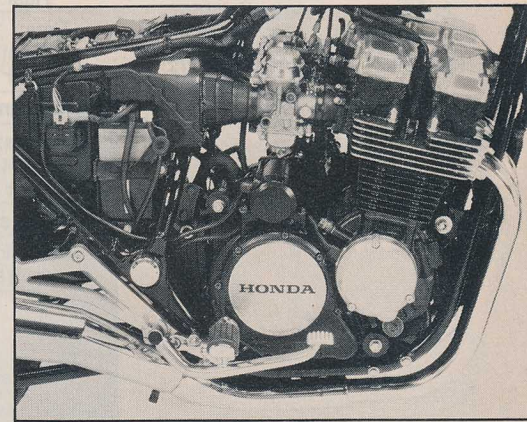
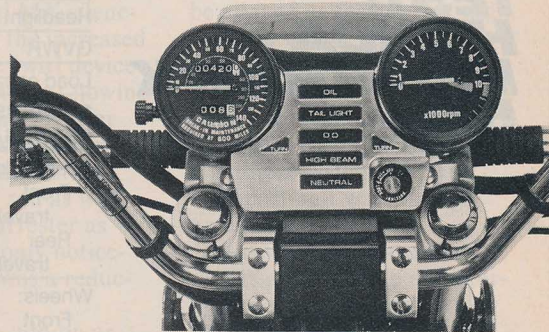
Ultra-light diaphragms in the Keihin CV carbs give the 550 Nighthawk excellent response.

Like the 650, the Nighthawk 550 has its alternator positioned behind the cylinders to reduce engine width. An aluminum oil cooler is standard.



Cast aluminum rear wheel incorporates a mechanical drum brake.

Nighthawk's rear shocks have no adjustments other than spring preload, produce a choppy ride over repetitive bumps.



Nighthawk 550 engine shares most parts with the Nighthawk 650, but has shorter stroke and lower primary ratio.

position is much better than we've come to expect of cruisers, the relationship between the pullback bars, the forward footpegs and the stepped seat reasonably comfortable for most riders.

Despite being decked out as a cruiser, the 550's handling is as good as its engine. It is stable, turns easily, and has good cornering clearance—the footpegs touch first as an early warning system, and then only during the most spirited riding. Pushed beyond that, the 550 wallops slightly in sweepers with a 150-lb. rider, the result of over-sprung, under-damped rear shocks.

Remember all those chromed and polished parts, such as the headlight and its brackets and the instrument panel? Ride the 550 east during late afternoon and all those polished parts reflect the sun into the rider's eye, producing a terrific glare and making it almost impossible to read the instruments. Under other conditions, the instruments are easy to read, al-

seat. To secure a helmet the rider must remove the seat, slip the helmet's D-rings over a hook, and replace the seat. The battery must be removed from its niche under the airbox before water can be added, the air filter is hidden behind a cover secured by three screws, which is in turn hidden under the right-hand plastic sidecover.

On the plus side, the rear wheel axle clears the mufflers and removing the rear wheel isn't a major chore. And the Nighthawk's light steering, narrowness and engine response earned it several weeks duty as the commuter-of-choice for one man known to split lanes in bumper-to-bumper freeway traffic.

This 550 Nighthawk, then, is a combination of glitter and glitz and solid function, providing a base of performance under all that style and chromed plastic. It's proof that motorcyclists can have it both ways, not giving up power for the cruiser look. □

SPECIFICATIONS

GENERAL

List Price	\$2548
Importer	American Honda Motor Co. 100 W. Alondra Blvd. Gardena, Calif. 90247
Customer service phone	(213) 327-8280 x2430
Warranty	12 mo./12,000 mi.

CHASSIS

Test weight (w/half-tank fuel)	440 lb.
Weight distribution front/rear, percent	47/53
Fuel capacity	3.2 gal.
Wheelbase	56.7 in.
Rake/trail	29°/4.2 in.
Handlebar width	30.5 in.
Seat height	31.9 in.
Seat width	10.5 in.
Footpeg height	14.2 in.
Ground clearance	6.3 in.
Headlight	12v 55/60w
GVWR	815 lb.
Load capacity	375 lb.

SUSPENSION/ BRAKES/TIRES

Suspension:	
Front	telescopic fork travel 6.3 in.
Rear	swing arm, dual shocks travel 4.1 in.
Wheels:	
Front	MT 2.15 x 19 in.
Rear	MT 3.00 x 16 in.
Tires:	
Front	100/90-19 Dunlop K11
Rear	130/90-16 Dunlop K627
Rear tire rev. per mi.	821
Brakes:	
Front	12.6 in. disc
Rear	6.3 in. drum
Brake swept area	120 sq. in.
Brake loading (160 lb. rider)	5.0 lb./sq. in.

ENGINE/GEARBOX

Engine	dohc air-cooled inline Four
Bore x stroke	60 x 50.6mm
Displacement	572cc
Compression ratio	9.5:1
Carburetion	(4) 30mm Keihin CV
Air filter	pleated paper
Ignition	transistorized inductive
Claimed power	64 bhp @ 9500 rpm
Claimed torque	36.5 lb.-ft. @ 8000 rpm
Lubrication	wet sump
Oil capacity	3.4 qt.
Electrical power	280w @ 6000 rpm
Starter	electric
Battery	12v 12ah
Primary drive	gear
Clutch	multi-plate, wet, hydraulic
Final drive	shaft
Gear ratios, overall:1	
6th	5.32
5th	6.26
4th	7.48
3rd	9.26
2nd	11.98
1st	17.94

PERFORMANCE

ACCELERATION

Time to distance:	
1/4 mi.	12.64 sec. @ 102.27 mph
Time to speed, sec.	
0-30 mph	1.9
0-40 mph	2.8
0-50 mph	3.9
0-60 mph	4.8
0-70 mph	5.9
0-80 mph	7.1
0-90 mph	9.1
0-100 mph	11.6
Top gear time to speed, sec.	
40-60 mph	4.7
60-80 mph	10.8

SPEED IN GEARS

Measured top speed in 1/2 mi.	
	116 mph
Calculated at 10,000 rpm redline:	
1st gear	41 mph
2nd	61 mph
3rd	79 mph
4th	97 mph
5th	116 mph
6th	137 mph

Engine speed at 60 mph	4380 rpm
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FUEL CONSUMPTION

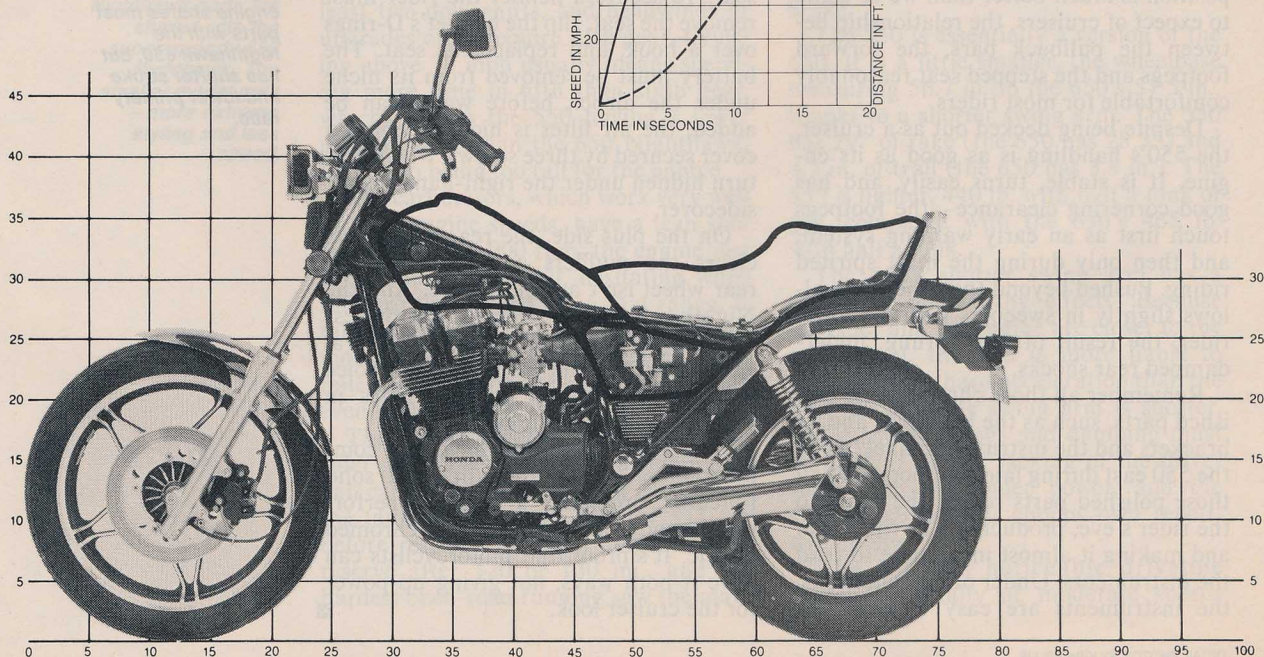
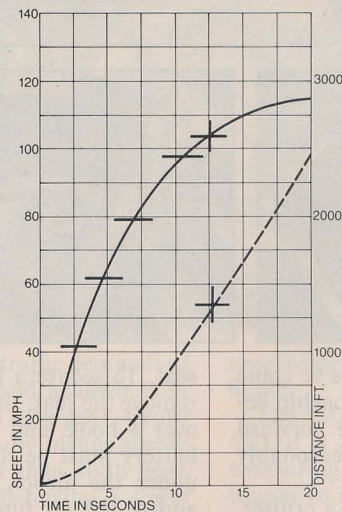
Test loop	61 mp
Range (to reserve)	153 mi.

BRAKING DISTANCE

from 30 mph	30 ft.
from 60 mph	130 ft.

SPEEDOMETER ERROR

30 mph indicated	27 mph
60 mph indicated	53 mph



**CYCLE
WORLD
TEST:
HONDA
NIGHTHAWK
550**