HONDA CB-350F Street Machine

A mini-four for medium-size people.

Your very own four-cylinder street machine for $1100 plus the standard plusses—that's what the CB-350F is all about.

The 350 Four has puzzled people; they can't understand why it exists. Nobody raised any doubts in 1969 when Honda first introduced the CB-750; many street riders considered that bike the absolute ultimate in a lot of ways. Then Honda trotted out the CB-500, and it confused some people.

The CB-500 seemed to be competing directly with the venerable CB-450 twin—a highly-successful motorcycle that Honda had spent a lot of time refining. Why tamper with a good thing? Why retire the CB-450 in favor of this new 500 Four when the 450 was holding its own? But Honda *didn't* retire the twin—they sold both models side by side.

The CB-350F surfaced, and that blew everybody's mind. Now Honda was monkeying around with the biggest-selling model in their line—the CB-350 twin (presently called the "G"). One magazine called the 350 Four an engineering exercise, done primarily to impress the competition: "See what we can toss off when we get bored?" Maybe.

Honda doesn't look at the business of selling motorcycles in quite the same way as most of the other manufacturers. The standard industry practice is to cover as much ground as possible with the fewest models. They try to design each new model to appeal to many different kinds of riders.

Not so Honda. They sell more bikes than anybody else, and they take full advantage of their vast size when designing the new models. Honda thinks of the market for motorcycles as a bunch of little markets, each one different. They realize that some people want to ride across the country, and other people want to ride around the block. Some riders are tall and stocky and need big motorcycles; others are small, and they want smaller bikes. Some people have a lot of money to spend for two wheels; others are just barely making it. So Honda juggles all these sizes and wants and budgets, comes up with a bunch of little categories of like-minded riders, and goes into full-scale production to satisfy their wants.

This is not to say that Honda hits the mark every time—it is very difficult for any multilayered corporation to try to sort out what's going on in another country that speaks a different language, so as to build precisely the right products that will turn on the people in that other country. But Honda, like one or two of the other manufacturers, is developing better communications with the riders in this country.

So Honda's approach is to make a lot of different models to appeal to a lot of different rider needs, and the CB-350F fits right into that approach. In price and size it lives in the gap between the 350 twin and the 450 twin.

The 350 twin is a general-purpose street motorcycle. The 350 Four is a touring machine. It doesn't have the top speed of the twin. It is bigger, heavier, has a more solid feel at speed, and it doesn't vibrate as much. The Four costs about $190 more than the 350 twin.

PHOTOGRAPHY BY LEE STANLEY

The CB-450 twin is a larger general-purpose street bike. It is bigger than the 350 Four, weighs 40 pounds more, goes faster, vibrates more, and costs about $130 more.

So the CB-350F is for small to medium-size riders who want a four-cylinder touring machine for medium-range trips, without the bulk and weight and price of the larger Fours.

THE BIKE: The CB-350F consists largely of an in-line four-cylinder four-stroke engine mounted transversely (sideways) in the frame. Each piston displaces 87cc, at a compression ratio of 9.3:1. The engine is slightly undersquare, with bores of 47mm, and a stroke of 50mm.

Each cylinder gets its charge from a 20mm slide/needle Keihin carburetor. The valves are opened by rocker arms, rocked by a single overhead cam chaindriven from the center of the crankshaft. The cam chain has an adjustable tensioner accessible from the outside of the engine.

The one-piece crankshaft is supported on five plain-metal main-bearings. A rugged primary chain, driven from the middle of the crankshaft, turns the primary shaft, which is geared to the clutch basket. The torque is shunted through a five-speed gearbox, and out through the countershaft sprocket.

The engine and gearbox share the same oil supply, a 3.7-quart wet sump at the bottom of the crankcase. The oil is sucked through a screen filter (removable from the bottom of the engine), forced through the pump, and then pushed through a paper-element filter (which unbolts from the front of the engine) before it is sent off to lubricate the engine and the gearbox.

The engine, which weighs 139 pounds, accounts for about 40% of the weight of the motorcycle.

The semi-cradle frame is of tube-and-pressed-metal construction. A single front-downtube drops from the steering head and spreads into cradle tubes that run beneath the engine and then curve upward to meet the top rails at the upper shock-absorber mounts. There is no center-rear downtube. A pressed-metal topmember starts at the steering head and runs back toward the rear of the gas tank, where it splits into top rails. Two side rails drop to meet the cradle tubes behind the engine. There is much pressed-metal gusseting, to hang parts firmly without cracking the mounts.

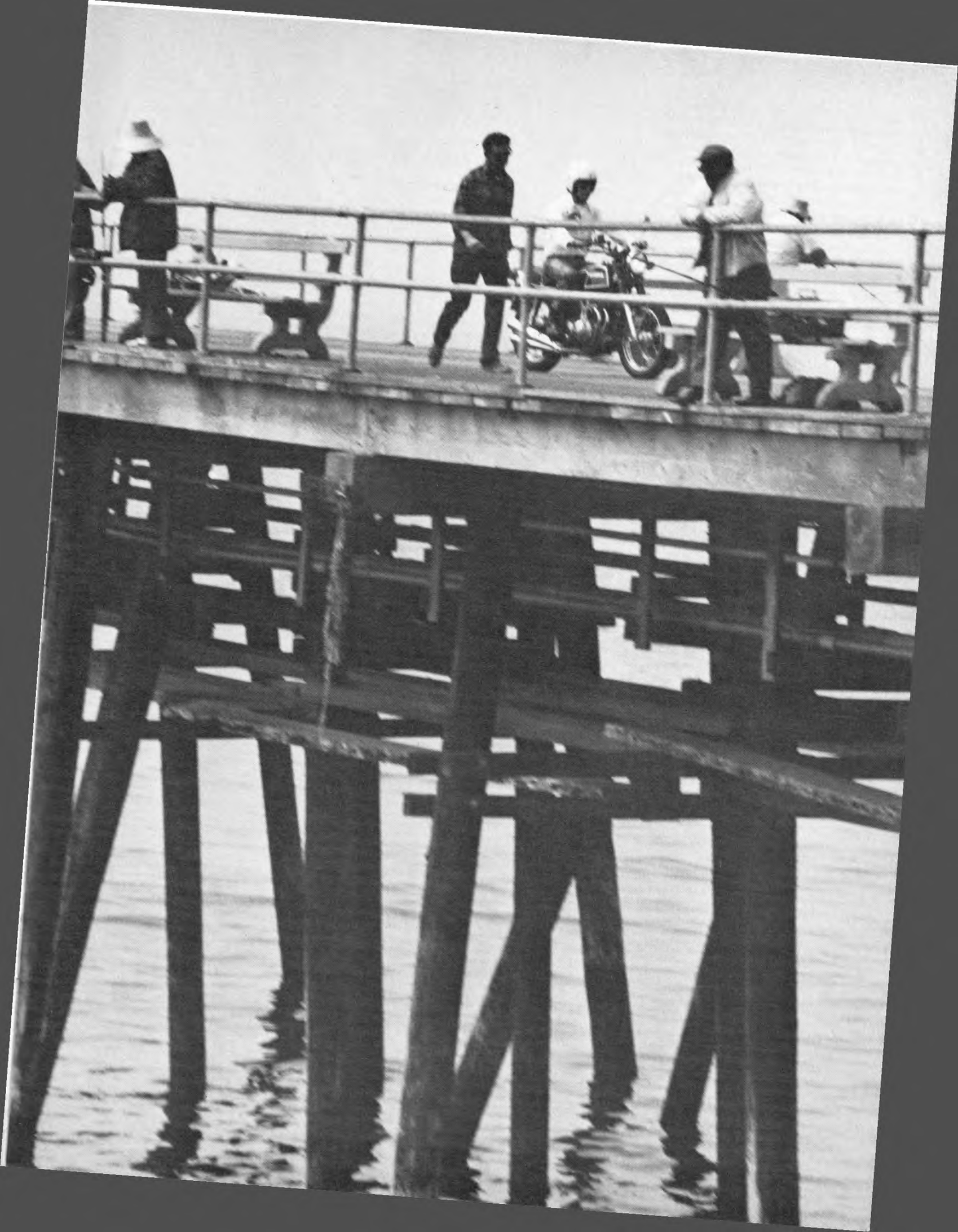
The machine looks topheavy; the engine is mounted high, with the center of the crankshaft located about two inches above the centers of the wheel axles.

The wheelbase is a bit short, at 53″; the steering-head angle is relatively steep, at 26½ degrees; and 3.3 inches of trail isn't much. But the way a steering geometry looks on paper and the way it shapes up on the motorcycle are often two different things.

The front forks have 4½ inches of travel, and the three-way-adjustable rear shocks can compress and extend 3.6 inches.

The CB-350F sits you low, with a seat height of about 30½ inches.

Part of the bike's appeal is that all the pieces seem to be well-proportioned to one another. The paint job is a maroon



metalflake, done reasonably well. The fork-tube covers—as well as the gas tank and the side covers—carry this maroon paint. The 3-D Honda badges on the tank and the side covers seem a bit overdone. The white and yellow applique-tape styling stripes on the sides of the tank also detract from the neat lines of the bike.

There are enough instruments—a tach (redlined at 10,000 rpm); speedo with trip-reset odometer in addition to the cumulative odometer; and a panel with four labeled indicator lights (oil pressure, turn signal, neutral, and high-beam). The controls (except for the starter button and the horn) are well marked.

ENGINE & GEARBOX PERFORMANCE: The 350 Four's engine is happiest when it's howling. If you like to turn lots of revs while you're making it down the street, you'll be at home on this machine. But those 350ccs have to propel 381 pounds of motorcycle, and you; so you have to wind it up to get the performance out. If you prefer a motorcycle that just sounds as if it's idling along while it does it work, you'll probably want something with more cubes.

The 350 Four gives you the choice of pushbutton starts or kickstarting. You turn on the single fuel tap, turn on the ignition key (on the front downtube), put the gearbox in neutral, pull back the choke lever, and touch the starter button. As soon as the engine catches (which was almost instantaneously on our test bike, which had about 6500 miles on it), you turn the choke lever halfway off. After about a minute of warmup, you can turn off the choke and ride away.

Riding away is easy. Low gear comes in low enough so that you don't have to worry about stalling the engine when you want to make the wheels start turning. And low will get you up to about 38 mph before you hit the redline at 10,000 rpm. If you gas it hard, it'll get you there pretty quick. We didn't have any trouble leaving the cars behind us at traffic-light starts, not even when tangling with late-to-work cars in the morning.

The bike is working hard when running with 30-mph traffic in low gear. It's at ease, yet eager and alert, at that speed in second, and it's sluggish running that slow in third (the CB-350F will hit 70 on the speedo in third gear).

To make smooth shifts with the 350 Four, you need to use either the roadracer's twitch or a fine-tuned throttle hand. The clutch works smoothly; the gearshift lever (on the left—down for low) has a very positive one-inch throw; and the bike is equipped with a quarter-turn throttle. But there is almost no flywheel effect. When you shut off the throttle, the engine slows down right then. You want to make an upshift, so you shut off the throttle, yank the clutch, pop the shift lever, dump the clutch, and gas it again, and that wasn't quick enough. The revs will have fallen off so far by the time you get the clutch out again that even though you're turning on the throttle, there will be a mismatch between engine and gearbox speeds, and the bike will lurch.

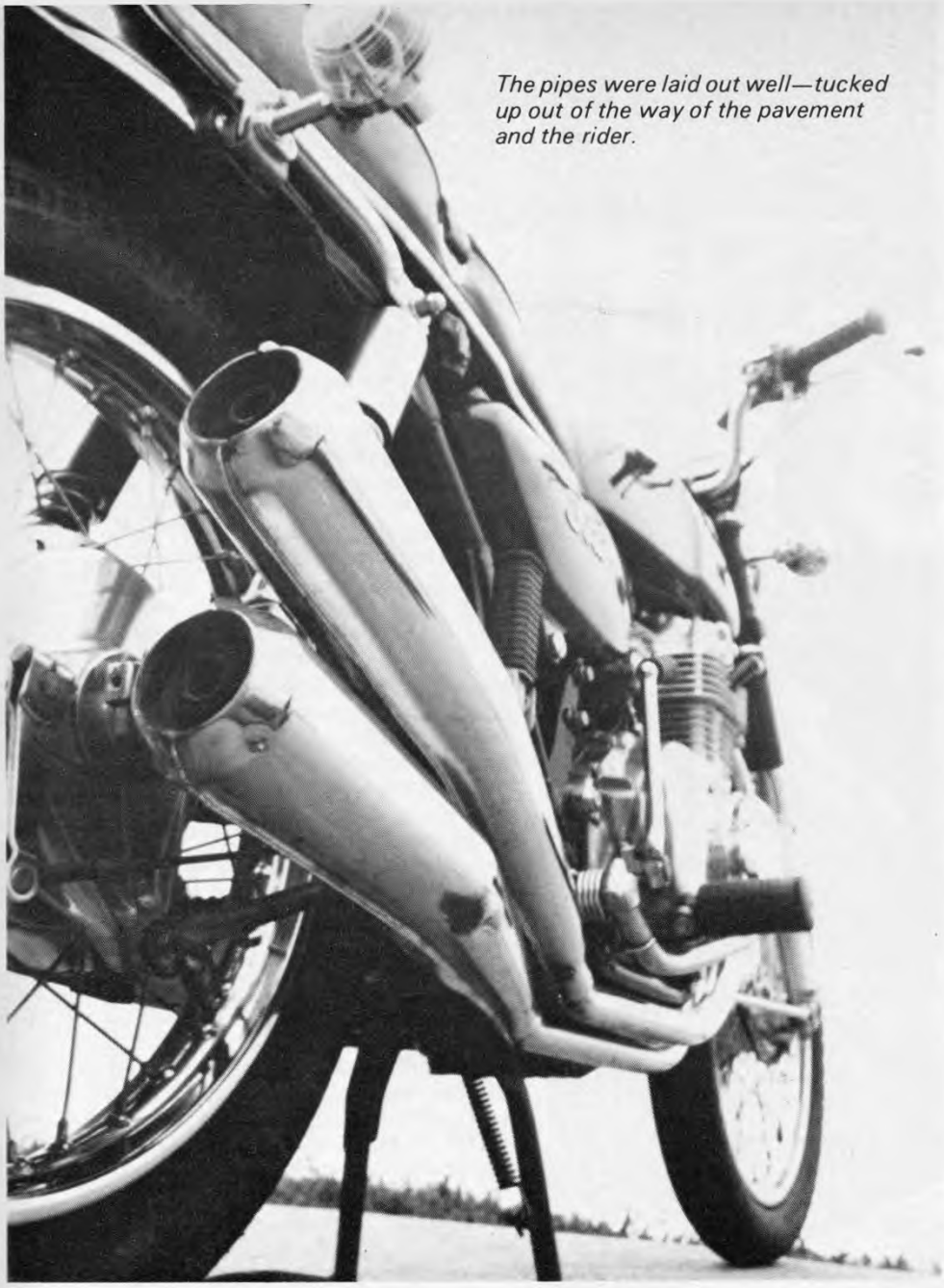
The centerstand works fine—if you muscle it hard enough.

One solution is to make the shift in one coordinated, convulsive spasm, the way roadracers do. Another solution is not to turn the throttle all the way off when you're ready to make the shift. If you use either of those solutions, you'll find that you can make neat, precise shifts with the 350 Four. The other way around the problem is to cheat and use the throttle-tensioner screw located on the twistgrip mount. If you increase the drag on the twistgrip, everything happens more slowly when you try to rotate the throttle, and the result is a little bit like adding flywheel effect to the engine.

In third, fourth, and fifth, the engine works best above 5000 rpm. It'll run okay below that—you can lug it way down—but it won't accelerate rapidly. We found that if we rode along without paying any attention to rpm or speed, the engine always seemed to end up running at about 7000 rpm. That's around 75 mph on the speedo in fifth gear.

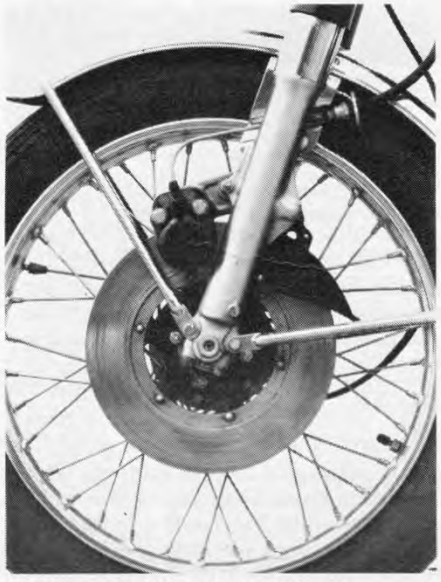
The engine feels happiest up to about 8500 rpm; above that it sounds a little grim, as if it's really working hard.

If you're riding along between 50 and 65



The pipes were laid out well—tucked up out of the way of the pavement and the rider.

When you push the button, the engine whips into life almost instantly.



The single-action hydraulic disc brake has excellent feel and no fade.

mph in fifth gear and you want to pass a car, you can snatch it down into fourth and gas it, and the bike will move out smartly.

The gearbox ratios were laid out well—there are no gaps.

THE HANDLING: The handling characteristics of the 350 Four are a puzzlement. The bike shouldn't work as well as it does.

We expected the CB-350F touring machine to deliver a soft, cushiony, wallowy ride. But it didn't. The springing was stiff, and there wasn't much damping. With a single lightweight rider aboard, the bike bounced over the bumps at low and medium speeds, even with the shocks on their softest settings. Carrying two passengers—or one heavy rider—the machine gave a smoother ride at the slower speeds.

Even with its top heaviness and its stiff suspension and its (seemingly) skimpy amount of trail, the bike would swoop precisely around corners in town. Whether provoked with the handlebars or by a shift in body weight, the bike would lean gracefully, its front wheel turning smoothly with the lean. You could ride along at five or ten mph and keep turning the bars back and forth from lock to lock, and the bike would lean to one side and then the other, predictably.

At medium speeds on rough pavement or highway rain-grooves, the machine would hold a steady line, and it would respond solidly to steering commands. Yet while doing this the bike felt incredibly front-end light. It gave the illusion that the motorcycle was carrying no weight on the front wheel, and that there were no gyroscopic or self-centered effects in play. The feeling was that you could just flick the bars from lock to lock easily, without disturbing the motorcycle (we did not experiment with that, however). So at 50 mph the bike would run along just as stable as any well-designed 500, while sending out these weird illusions through the handlebars.

The machine behaved itself like a well-bred 500 in winds, too. Trucks and normal sidewinds failed to impress it. During the test, however, we ran into two or three days of what are locally named Santa Ana winds. They gust, and they can blow *very* hard, and one day they tossed the 350 Four and one of our test riders around on the freeway enough to scare the hell out of him.

Ridden solo, the 350 Four likes to run between 85 and 90 mph. At that speed the bumps smooth out, and the bike feels rock-solid; you get the impression that you're travelling much slower than you're actually going. With two on board, the same feeling comes along about 20 mph sooner.

To corner the bike at medium and high speeds, you find that the response is a nice compromise between quick and ponderous; you never seem to notice whether or not you are putting much effort into steering the machine. Our light (135-

pound) rider found himself using reverse lock on the handlebars for cornering, rather than body lean.

The 350 Four will get over to a respectable lean angle before the centerstand scrapes (on the left); even a light rider gets the feeling that he is giving the orders and gravity is carrying them out while he has the bike heeled over in a corner.

THE RIDE: The CB-350F felt comfortable to a variety of riders ranging in size from 5′6″ up to about six feet tall. The bike sits low, with that saddle height of 30½ inches, and the footpegs are high—almost a foot off the ground. So your thighs ride high, almost parallel to the gas tank. But the footpegs are positioned pretty far forward, so the bend in your knees isn't too extreme.

Our short (5′8″) rider found that the handlebars didn't have enough rise; therefore he was unable to adjust them back toward him, and so he had to ride scrunched up on the front part of the saddle to reach the handlebar grips without locking his elbows.

The saddle was not up to CB-750 standards. For short rides it was fine. But for anything longer than a two-hour ride, the front part of the saddle was too hard, and your tailbone would get sore. The seat was shaped correctly—it was just a matter of not enough padding of the right density.

The motorcycle felt more like a thick twin than a Four. The inner ends of the 3½ inch springloaded folding footpegs were 16½ inches apart. The gas tank was wide, but not too wide. You could grip the tank cutouts with your knees, and your legs had a straight shot down to the footpegs, without any obstructions to get in your way.

Our test bike did vibrate; the vibes were strongest from 5000 to 6300 rpm. The cars would get blurry in the mirror in that rpm range, although you could still sort out the cars from the trucks. At the worst vibration level, you could ride along holding both handlebar grips between thumb and forefinger, and the grips didn't feel as if they were getting any thicker.

The worst vibrations showed up in the right footpeg; then the left peg; then the handlebar grips; and at one point you could feel a few tingles through the saddle. But the vibrations from the 350 Four didn't begin to compare with the bad shakes you get from most twins.

The controls were shaped right and were easy to use, except for the twistgrip. Its return spring is way too stiff. We had to ride cocked on the bike just to get leverage on the throttle. Even though the bike has a quick throttle, we'd have to reposition the right hand on the twistgrip frequently when riding in heavy, fast-moving traffic, just to be able to get a good pull on the throttle when we wanted to turn it on.

The alternative is to screw in the throttle tensioner, but that is a poor solution for riders who don't like sluggish engine response.

The sidestand is handy, and it works well. The centerstand hits the ground at the wrong angle, and requires too much effort to lift a 381-pound motorcycle.

As mentioned under "Handling," the suspension is too stiff at low and medium speeds. On bad bumps, it gives the rider a quick, snapping jolt. We would like the best of all possible worlds, but given a choice between that stiff ride and a wallowy one, we'll settle for the stiff one. At high speeds it is really nice.

THE BRAKES: The 350 Four has a hydraulic-disc front brake with a single-action caliper. The feel was so good that we quickly forgot that it was a disc brake. We used it hard, never fading it even after repeated panic stops (planned and unplanned). The drum brake in the rear worked okay during unplanned traffic emergencies, but it began to fade when jammed on during repeated panic stops.

RELIABILITY: The machine had about 6500 miles on it when we picked it up. It blew out the oil-pressure switch when we ran the bike on the dyno, coating the rear wheel and sending the bike into strange gyrations. We installed a new switch, and the bike didn't give any other problems.

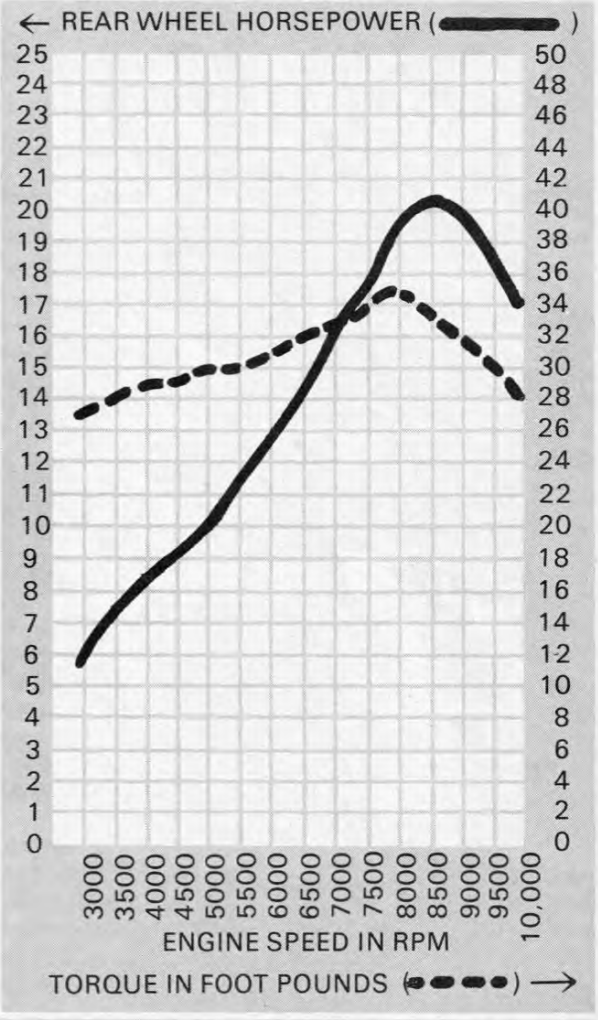
SUMMARY: We concluded our road-test with the conviction that the CB-350F is indeed a medium-size, medium-range touring machine—but it is also perfectly-suited to around-town riding. It is a machine for people who prefer good handling to a soft ride. It is not vibration-less, and the saddle leaves something to be desired, but the 350 Four is a lot of motorcycle for $1100. It has enough—though not startling—power, and heads still swing around when you turn it on and let those four pipes sing. ***CG***

HONDA CB-350F

Engine type	four cylinder, single overhead cam, four stroke
Bore & stroke	47mm x 50mm
Displacement	347cc
Compression ratio	9.3:1
Horsepower (advertised)	N/A
Ignition	battery / coil
Carburetion	four Keihin 20mm
Lubrication	wet sump
Length	81.1 inches
Wheelbase	53.3 inches
Ground Clearance	6.1 inches
Wet weight	381 pounds
Front tire	3.00 x 18 rib
Front brake	single hydraulic disc
Rear tire	3.50 x 18 universal
Rear brake	7" internal expanding
Transmission	five-speed constant-mesh
Clutch	wet, multi-plate
Overall drive ratios	(1) 20.91, (2) 14.15, (3) 10,83, (4) 8.73, (5) 7.38
Countershaft sprocket	17 tooth
Rear wheelsprocket	38 tooth
Air filter	disposable paper element
Fuel tank	steel, 3.2 gallons
Front suspension	telescopic, 4.5 inches travel
Rear suspension	3-way adjustable hydraulic, 3.6 inches travel
Frame	semi-cradle, tubular steel
Seat height	30½ inches
Swingarm length	18 inches
Handlebar width	29½ inches
Handlebar height	42 inches
Steering-head angle	26.7 degrees
Fork trail	3.3 inches
Best ¼ mile performance	15.60 seconds, 81.94 mph
Color	maroon metalflake, black frame, chrome trim
Price	$1091, West Coast

DISTRIBUTOR:
American Honda Motor Co.
100 West Alondra Blvd.
Gardena, Calif. 90247

Drag Strip tests conducted at Irwindale Raceway, Irwindale, Ca.



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