



The Sabre practically begged to be ridden hard, and that was an invitation we accepted gladly, and again and again.

HONDA V45 SABRE

allowed this strong lightweight material to be used in highly automated assembly plants. This steel alloy weighs 16 percent less than earlier frame pipes.

Road-racing frame designers have long understood the need for a sturdy chassis and the importance of tying the steering head and swing-arm pivot together as stoutly as possible. As engines have become more powerful and tires supply more grip, frames have grown much wider just behind the steering head, with the backbones splayed at wide angles before straightening and heading back toward the swing-arm area. This helps the frame resist side-to-side twisting at the steering head, and is an important step forward. All front-line grand prix machines use such a design.

As street bike design moves rapidly ahead, manufacturers confront problems similar to those faced by race-bike designers. The Sabre, a powerful motorcycle by 750 standards, has very wide tires. The Sabre's frame shows grand prix influence. The backbone frame tubes are widely spaced and well braced, much more so than any other current Honda road bike we've seen. For a road bike, the Sabre is monstrously strong in the neck. The rest of the chassis is a standard full-cradle frame with a tube and box-section swing arm.

The front suspension follows the 1982 Honda 750 Nighthawk by having TRAC, Honda's anti-dive fork; the left slider has a four-position screw-slot selector by which the rider can choose a degree of anti-dive. TRAC, or Torque Reactive Anti-Dive Control, differs from Suzuki's and

Yamaha's systems, which are controlled via pressure in the hydraulic brake system. Instead, Honda relies on the rotation of the left brake rotor to energize the anti-dive fork. As the front brake is applied, the left caliper grips the rotor and rotates forward, thus pushing a plunger and closing part of the compression-damping circuitry, effectively slowing fork dive during braking. The advantage of the TRAC system lies in its mechanical activation: brake feel is completely unaffected. (A full explanation of TRAC can be found in the Honda 750 Nighthawk test in the April 1982 issue.)

The Sabre fork has a feature not found on the CB750 Nighthawk: an integral fork brace tying the 37mm fork tubes together directly above the chromed-steel front fender. This strengthens the front-end assembly, giving a positive feel to steering inputs with instant response at all times. There are many reasons—obvious and not so obvious—for incorporating a brace into the Sabre and Magna front ends, and we imagine Honda did so for all of them.

A motorcycle fork is subjected to high-stress loads from all directions. A head-on collision between the front tire and a sizable road irregularity can bend fork tubes back toward the motorcycle, resulting in a temporary misalignment of the fork, which creates stiction. Braking also imposes similar forces on the front end. Cornering loads push in all directions on the tubes. Fast, forceful steering inputs are another cause of temporary flex and misalignment, with stiction and its companion, slow fork response, instantly appearing. These problems, common to all motorcycles, arise when bikes

are ridden hard in sporting fashion. On top of these, however, the Sabre has its own special need for a fork brace.

The V-four has a very long wheelbase for a sporting motorcycle; measuring 61.5 inches, it's 1.5 inches longer than that of the stable-handling CB750F. Long wheelbase motorcycles, because of chassis dynamics, like to go straight, and offer considerable resistance to rapid steering correction, especially if the motorcycle has "conservative" rake and trail figures, which the Sabre does: 29.5 degrees of rake and 4.6 inches of trail. This tends to amplify the twisting-caused stiction when immediate response is sought through fast steering input.

There is yet another Sabre/Magna exclusive. Both bikes are equipped with massive front tires, mounted on rims 2.5 inches wide; this is much larger than the 1.85-inch rim that's the front-wheel norm for middle-to-heavyweight bikes. The big rim and tire puts down a large print, giving the tire more contact area and greater self-aligning torque than the norm.

Initial riding impressions taken from different riders hot off the Sabre's seat were of a motorcycle with a medium-to-long wheelbase and fairly steep geometry of about 28 degrees rake and four inches trail. The bike felt stable at high speed, but it steered fairly lightly—sensations in accord with our speculations about the bike's geometry. The Sabre's long wheelbase for a 750 and its Ducati-esque rake and trail surprised us. Figures on paper suggest that the Sabre would steer like a lumber truck, providing straight-line locomotive stability at the expense of quick and accurate steering. But the Sabre is, in fact, delightful to ride in a sporting environment, or anywhere.

The Sabre practically begs to be ridden hard. The engine is deceptively smooth, propelling the bike down the road with such apparent ease that, through the test period, riders were amazed to see the speedometer at 80 mph when they expected 60 mph. More than one staffer was shocked to see the gear indicator showing fourth after two or three miles on the freeway. The Sabre is *that* smooth. Riding at 70 mph with ear-plugs produces an eerie feeling; the engine—neither audible nor vibrating—seems to melt away and disappear. The rider feels as if he's floating down the road, detached from internal combustion. Only shocks transmitted through the suspension tell the rider's non-visual senses he's actually on the ground moving forward. The engine's smoothness makes highway travel seem absolutely effortless. The Sabre will cruise at *any* speed, including those off the speedo face, without a buzz.

Initial rides aboard the Sabre brought many comments about the clutch. The V45's hydraulic clutch has a less-linear engagement than conventional cable-and-linkage-operated clutches. Initial en-