

# V30 MAGNA™

# 1985





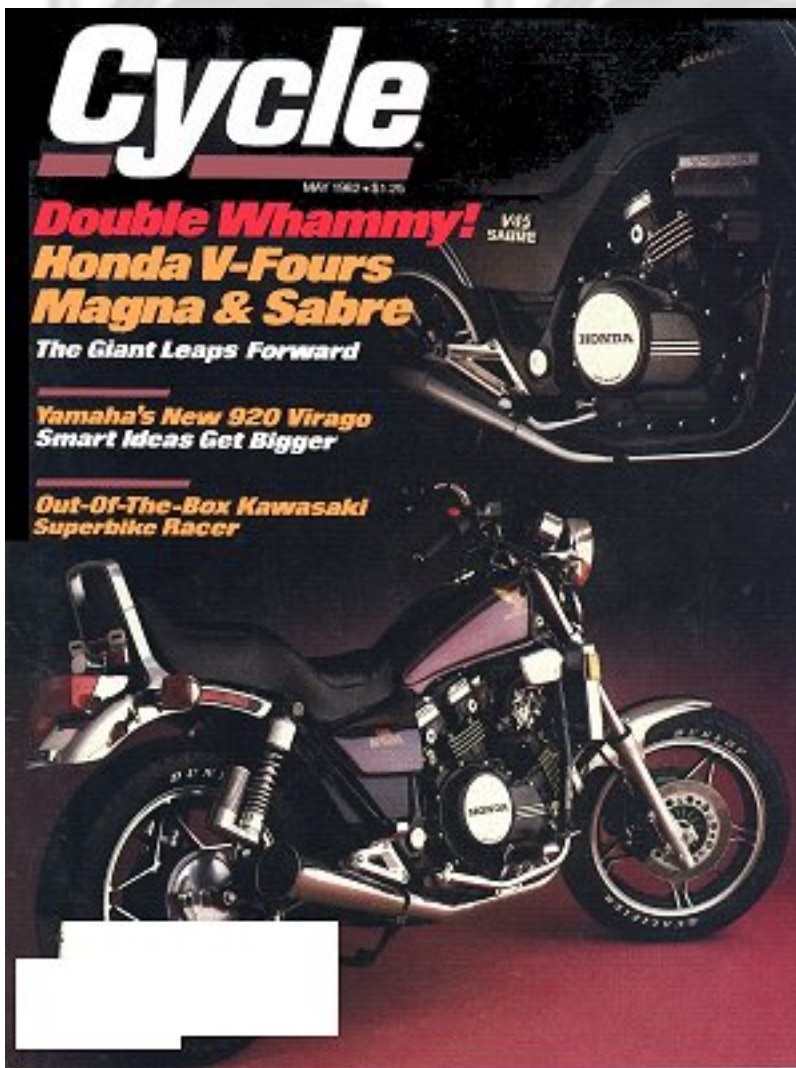






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# V45 Magna, Cycle May 1982



## HONDA V45 Magna

This is the motorcycle everybody else was afraid Honda might build someday. Those who weren't worried should have been, and probably are now. Honda would not have built this motorcycle do five years ago, nor given it a proper name. Welcome to 1982. Honda's new 750. or V45 it you



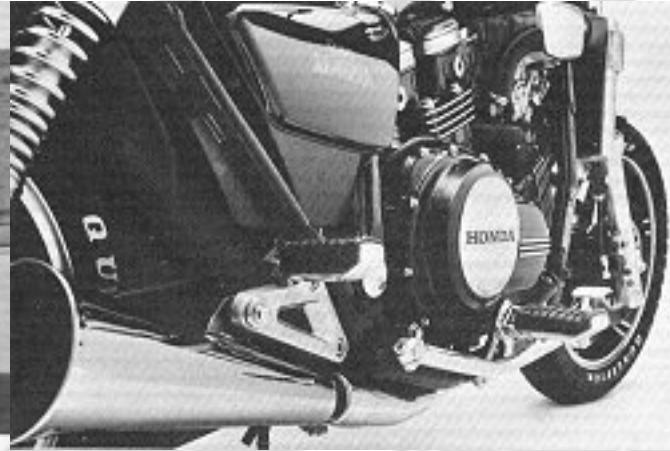
*Honda has cut its V-four two ways. The Magna is the New four with*

prefer, proves that the era of the Universal Japanese Motorcycle, given formal

*an appearance bias; the Sabre The one faithful to function. The Magna adheres to the shape that most of all sells.*

definition in this magazine years ago, is an era in passing. Honda could have built a third generation UJM, a successor to the first CB750 series (1969-1978) and the second (1979-to whenever), but did not. To be successful in the 1980s, a manufacturer must produce something that is new and is perceived as new. Yamaha understood this proposition first: designers dressed up an old motorcycle in new and different clothes, the Yamaha XS650 twin, and finally created a new motorcycle in different clothes, the 750 Virago.

Honda engineers started with empty drafting tables and blood in their eye; the result is new, staggeringly new. You want a freshly



minted engine, a copy of nothing and similar to nothing before? Well, have this Vee-four with four overhead camshafts, 16 valves, water cooling six speeds and shaft drive. You'd have to be blind and deaf to miss the newness of this motorcycle. You want a styling motif in cruiser mode, Milwaukee esque, something with a dense, industrial look in the engine compartment, something that looks like it could repel sledge-hammer blows?

At one time Honda might have blushed, hesitating to pursue glitz and fashion and the vagaries thereof. Today Honda invites you to try the route to the Midwest via Asaka, Japan. Now the Motorcycle Engineering Company has even found a toughie-boy name for this mean-ish, Vee-four Mo'Sickle: Magna It takes a hidden, auxiliary fuel tank and a fuel pump to have both reasonable gas capacity and a main gas tank in the cruiser style and size. So be it: then the Magna has two tanks and one fuel pump. Eeeek: Form dictating function, right? Not entirely. Did anyone ever complain that the Gold Wing has a fuel pump and tank buried in the "wrong" place, and a falsie-tank in front of the saddle? The point is this: when the engineering department begins by tossing out the UJM concept and designs a completely new engine and motorcycle, then form becomes just another set of engineering issues that the department deals with.

The



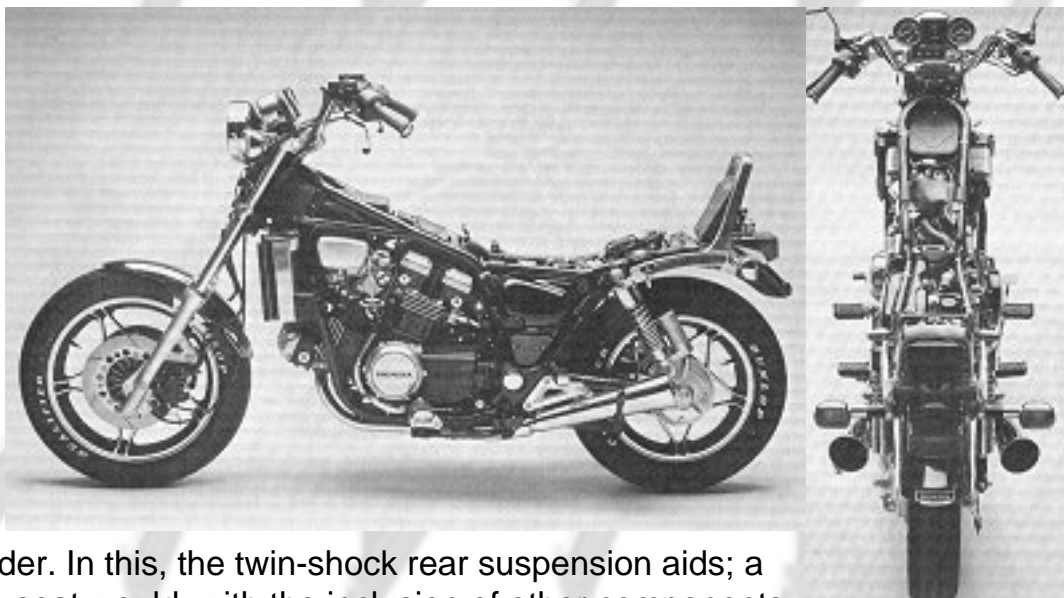
Magna is Honda's ultimate weapon in market warfare. Here's a motorcycle that retails for \$3298, barely more expensive than premium 550s. Potentially these V45s~Magna and Sabre could cut a broad swath through motorcycling, from the 550 level upward. The Sabre offers *new* with a functional bias, and the Magna new with an appearance bias. If the functional purist didn't have the Sabre option, he'd be tempted to buy a Magna for the engine alone, and then remake the rest of the motorcycle to suit.

That would be difficult. Because, while Honda used the same engine/drive train package for the Sabre and Magna, the motorcycles are very different machines. In the Magna, the cruiser seating position benefits from the narrow engine, a bit more than 16 inches wide at the pegs. This means the footpegs can be moved far forward; and, in fact, the Magna has the most radically forward-positioned pegs of any Honda. With most transverse four-cylinder engines, the rider would have his feet splayed out and his toes in the alternator cover. The Magna's rear-bank cylinder head (9.0 inches across) allows the tank to stay narrow and still cover the mechanicals below.

In both the Magna and Sabre, low saddle height was an important objective. The V-fours' rear-bank cam covers come apart in two sections; this is a consequence of dropping the upper frame rails as low as possible, running them along the top of the engine. And in the V-four frames, the left-side engine-cradles unbolt to permit side excavation of the engines.

With a saddle height under 30 inches, the Magna is a real low-rider. In this, the twin-shock rear suspension aids; a single shock positioned under the seat would, with the inclusion of other components, require more seat elevation to get everything in and under. Among these components is the under-saddle gas tank, which is the second part of an interconnected fuel system. An electric fuel pump draws from the bottom of the lower tank to feed the carburetors. Thus, styling considerations (such as tank shape) and engineering objectives (such as low saddle height) were served by building a twin-shocker.

From the broad, flat seat, the rider reaches out to the handlebar, the grips of which angle back, down and outward, positioning the rider's hands just forward of a vertical line rising from the footpegs. Now



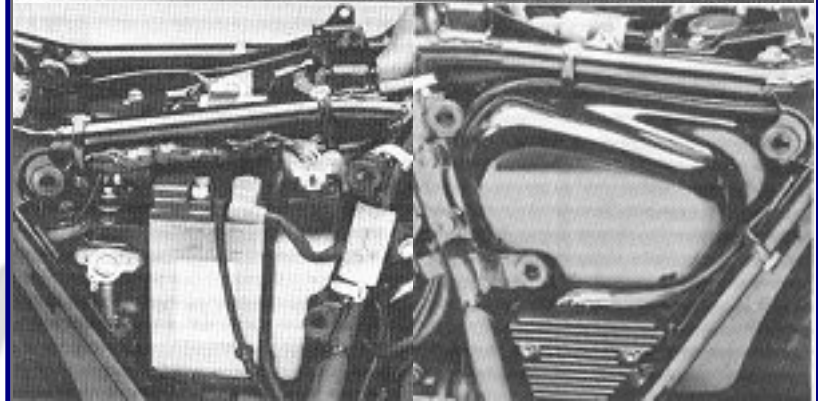
that's forward pegs. The Magna gas tank appears smaller and narrower than the Sabre's; smaller it is, because the air filter must, unlike the Sabre's, live under the tank. But, curiously, the

Magna tank is wider and lower than the Sabre's at knee-contact points.

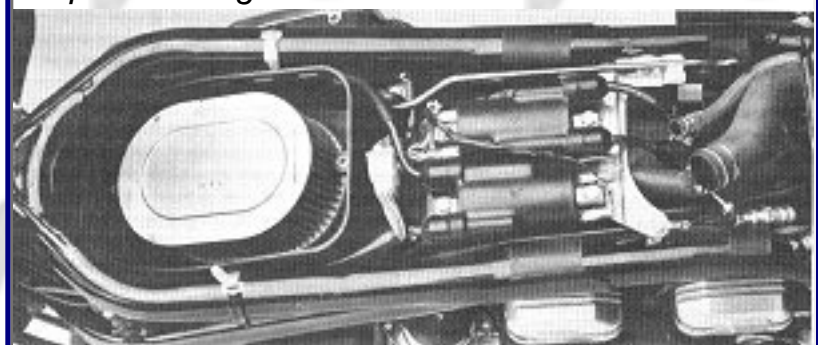
The low saddle, forward pegs and erect riding position allow short riders to get both feet planted flat on the ground at stops, where their legs will be behind the pegs. That's terrific for stoplight trollers on the avenue; the ergonomics are less splendid outside city limits.

The forward pegs and the resulting riding position conspire to make the Magna a short-hop motorcycle, regardless of how cushy the suspension might be. Fifty miles of freeway riding is acceptable; 150 miles of varied riding in a single sitting tested our riders' limits. One tester always wore his Gold Belt when he rode the Magna. Peg location is the most objectionable single feature because it strains the back by forcing the spine to support upper-body weight; arms, shoulders and hands bear no stationary load at all. Wind speed aggravates the problem by making the rider pull into the bar. Because they are less ergonomically successful than standard motorcycles, cruiser style bikes actually fit a narrow range of riders. Parked in a showroom, at rest, they feel reasonably comfortable to everyone. In actual road use, however, an individual rider's physical characteristics explain much of his reaction to the motorcycle's comfort. Riders who are large and overweight, or who are well over six feet tall, or who have relatively long legs and short torsos, or who have back problems from age or injury are, in general, not good candidates for the sit-straight school of ergonomics. But shorter riders, riders with relatively long torsos and short legs and with backs in good condition show less sensitivity to the riding position of motorcycles like the Magna. Bringing back real test rides

(don't you wish) would probably help an enormous number of riders decide whether a particular motorcycle style is well suited to their physical characteristics and emotional preferences. Honda matched the Magna's suspension to its riding position; compared with the Sabre's, both are mediocre. They're a match in another way The sit-up riding position cries out for a soft rear suspension to minimize road shocks administered to the rider's spine. That Honda has done, but the choices aren't easy here. There are trade-offs. The low saddle height means that the rear suspension can't have



*Lower, 1-gallon fuel tank interconnects with main upper tank. Fuel pump draws from lower tanks bottom. Fuel system has straight on-off petcock: no reserve position. Under seat compactness keeps seat height low.*



*Magna's air cleaner fits under the tank between the frame tubes. Undressed bike shows all available space occupied.*

much travel, and the ever-popular shaft drive guarantees lots of rear wheel sprung weight, which is always difficult to control; matters are complicated by a final-drive system that tries to extend the suspension under power and settles down on trailing throttle. Makers have therefore produced shaft-drive motorcycles that cluster around two poles. At one pole are bikes with firm to harsh rear suspensions that behave well under hard riding that tests handling; at the other pole are bikes that have soft, pleasant rides on the freeway, and get unruly under backroad pressure. Honda engineers seem to have concluded that the Magna should be boulevard and freeway cushy: soft springs and light damping, and nothing further. The rear suspension units, while trick-looking with their remote reservoirs, have no damping adjustment. Five-position spring preload sums up the shock absorbers' adjustability.

The rear suspension delivers a smooth and compliant ride around town with little preload (one or two). On straight highways at speed, preload to the third or fourth level is required to cancel out a floaty sensation over bumps, reminiscent of traditional American luxury cars. Still, the soft, short-travel rear suspension bottoms out over medium potholes, or by adding a passenger. While it has reasonable ground clearance, the Magna resists sporty-type riding over backroads. With little preload, the bike feels rubbery and vague in corners over bumps and on trailing throttle: a lot of preload helps, but you're working against the basic suspension decisions made in Japan, there's just too little spring, not much travel, not enough damping, and all that sprung weight. The Magna needs less flash and more substance in the rear suspension units - Fully adjustable damping, both rebound and compression, and maybe air-assisted springing, would give owners some latitude to make their own suspension trade-offs.

The 37mm front fork is likewise calibrated to the Magna's cruiser role. It's air-assisted fork caps have individual valves in them, and we experimented with air pressures between 12 and 22 psi. Twelve pounds let the fork soak up road imperfections; though it didn't quite intercept less severe pavement irregularities such as slight pavement breaks as well as the fork on our last test CB1100F. At 12 psi the fork could be bottomed on driveway entrances. Increased air pressure obviated this bottoming problem without disturbing the fork's compliance over lane-divider dots.

The Magna's built-in fork brace should help keep the tubes from twisting under decisive input from hard riders at high speeds, making the steering feel very positive and instantaneous. Both the Sabre and Magna have a greater distance between their lower triple clamps and axles than the current motorcycle norm. If tying the sliders together top and bottom reduces any flex-induced stiction, then Honda has been successful because the front fork is very active. Furthermore, the Magna and Sabre forks have their dual Syntallic bushings both located in the sliders, rather than one on the tubes and one in the sliders. The new system keeps the bushings the same distance apart and thus the fork may be a little more responsive when operating at near full extension. Both bushings bear (and slide) against steel tubing.

The front fork is TRAC-equipped, Honda's version of anti-dive, explained in detail in the CB750 Nighthawk test (April, 1982). Functionally, we like this system on two counts: Since it does not work off the master cylinder, the front brake lever never feels spongy; and TRAC produces more anti-dive effect, we think, than in other contemporary systems.

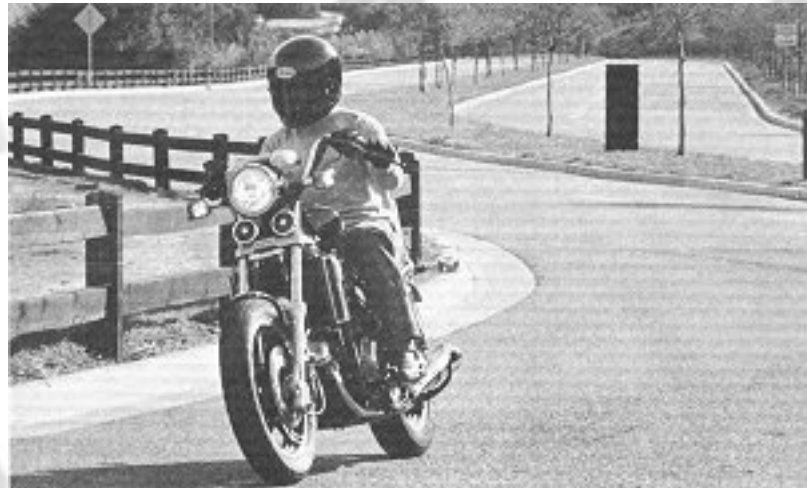
The diminished front-end dive encouraged our test riders to use the front double disc brake harder than normal, thus provoking tire howl. You wouldn't want to do this unless the brakes were progressive and readable. Honda's are. The Magna employs the now familiar Honda double-piston calipers, elongated pads and slotted discs. On the Magna the non-adjustable front brake lever seemingly has little free play, causing small-handed riders to pull against master-cylinder pressure with their fingertips, an annoying niggle when wearing winter riding gloves. Actually the hand position on the Magna bar grip creates this impression by putting the lever at a greater reach than standard bars do;

the amount of lever free play is just fine. In any event two or three fingers can howl the wide-footprint 110-90 x 18 Dunlop Qualifier tire. The rear drum brake, built into the cast rear wheel, is small but works fine. Motorcycling seems over its compulsion to fit 10 inch discs to rear wheels.

Honda has kissed good-bye to the composite wheels in favor of cast alloy- primarily a concession to styling rather than engineering. As a style leader, the Magna must have state-of-fashion cast wheels. The rim widths (2.50 front: 3.00 rear) indicate that the V-fours have reached 1982 tire requirements and are prepared for future developments. Indeed, rim width is a more significant advance here than wheel construction.

After nudging the choke lever up, turn-lag the key and hitting the starter button, you'll not question where the greatest technological leap forward lies in the Magna: the engine. It has a throaty, gutsy flat sound, something like two Honda 400T twins revving in unison. More amazing is the sheer volume of this sound. Is it legal? Yes. Decibel meters can't distinguish between exhaust notes and mechanical noise emanating from engine cases; human ears can. Quiet the engine with water cooling, silent timing chains and anti-backlash gears and, presto, you can step up the good sounds, which are clear and present to the rider at stops, not at speed.

While the Sabre treats its rider to a display-panel light show, the Magna has traditional dial face mechanical drive tachometer and speedometer, indicator lights and a water-temperature gauge. These lights reside under dark window panels, and indicators light up the appropriate leg ends marked on the dark window panels. In shade, readability is fine; in strong, direct sunlight the lights are almost invisible. A rider might miss the fuel level warning light during a fast cruise on a sunny day. The light generally winks on at 110 to 120 miles, presumably when the main tank runs dry (2.6 gallons); but should you miss it for 30 miles, you'll be about 10 miles away from pushing. The Magna has no reserve tap, only an on off fuel valve located behind the right side-cover. Another surprise; Filling the gas tank to the brim causes the cap to seep.



The Magna, a hundred greenbacks cheaper than the Sabre, lacks two important features of its mate. First, no self-canceling turn signals; second, no fiber-optic safety cable. We didn't miss the self extinguishing signals; for our tastes the Sabre signals cycled far too short a time and distance. On the Magna, we would have preferred the turn-signal indicator lights at the top rather than the bottom of the instrument panel.

By virtue of the Magna's looks, we think it's more likely than the Sabre to be ripped off, but the Magna has only the protection of an ignition key fork lock combination. The Sabre has a key activated, self contained and independently powered alarm system, into which plugs the male end of a sheathed cable, normally stowed in its place above the tool kit. The cable has a closed loop-eye on one end; the rider can lasso a lightpost and plug the male end into the receptacle beneath the left sidecover. The sheathed cable has fiber-optic material in its center; if the cable is cut, a piercing little beeper sounds. The system can't be circumvented. The anti theft system is neat but the Magna doesn't have it. For Magna owners its an accessory alarm, lock, and chain, garage or hard to hand combat

Wet weather riding is no treat with the Magna or the Sabre. The front fenders are useless for water protection; in all probability they are better than nothing. The Magna's rear fender is so short if seemingly does little to keep the rear wheel spray from being pulled up and forward. Our advice to

Magna riders who see a storm ahead, head for shelter.

Day or night, rain or shine, the effortless way the Magna operates on the far distant side of Legal-Speed is a tribute to the engine, its mounting system and the sixth overdrive gear. Since the V-four has perfect primary balance, the only concern might be some secondary vibration at high engine speeds. Yet this is inconsequential because the engine attaches to the frame (both Magna and Sabre) with six rubber mounts. four on the crankcases and two on the rear cylinder head; the mounting system is identical to that on CB900F bikes, with two kinds of rubber in a collar, the first controlling radial and the second lateral vibrations. In this way high-frequency vibrations fail to penetrate to the rolling chassis and rider. Finally, the engine turns about 4500 rpm at 55 mph in fifth, and sixth drops the revs below an indicated 4000 rpm.

At the drag strip the Magna recorded an impressive 12.29-second quarter-mile, running through at 109.62 mph; the Sabre cut through in 12.23 seconds at 108.56 mph. These V-fours surround the Kawasaki KZ750E3 (December 1981), which posted a 12.276-second, 109.22-mph pass at the drag strip. To date, the Magna is the fastest 750 we've put on the strip, by about 0.4 mph, and the Sabre is the quickest arriving at the quarter's end a 0.046-second nano-blink sooner than the KZ750.

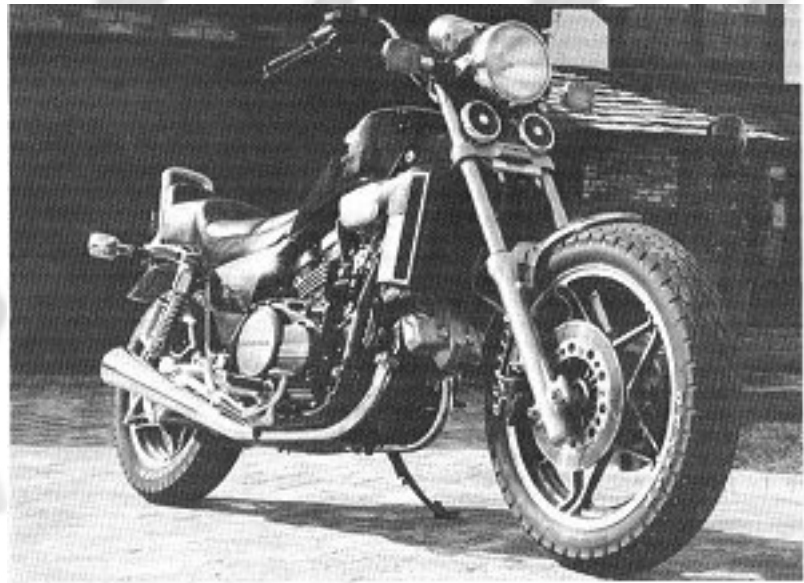
Normally, we'd bubble over about the raw numbers; the V-fours, however, impress the rider in a completely different way: the nonchalant almost detached way they make this performance. No fuss, no busyness, just here's a 12.23 and it wasn't much of a bother --let's be on our way.

We decided the V-four should be on its way to the dyno, despite the difficulties created by mating a shaft drive motorcycle to the dyno. Because the Honda V fours were so radically new and we were so curious about their power output, we had a special fixture built at the dyno so the V-four could be put on the pump. We knew that despite differences in the air cleaners and pipes, both V fours had nearly identical outputs. The Sabre went to the dyno. With the rear wheel removed, the Sabre's drive shaft turned a special rear axle carrying a sprocket, which in turn linked to the dyno sprocket by means of a chain. Bear in mind that the method introduces one more stage between engine and dyno. Though not tentative, the figures reflect our first experience: only further experience will demonstrate how completely numbers taken this way can be compared with others from chain-driven bikes. The V-four's horsepower and torque figures may be slightly higher than indicated by our charts. Although the Magna and Sabre are about 20 and 30 pounds heavier, respectively, than the Kawasaki Kz750. the dragstrip times for all three bikes were practically the same

The V-four makes a bit more peak horsepower than the K7750 (65.05 vs. 62.10), but it's the VF750 power spread that's compelling. Where the Kawasaki makes more than 59 horsepower over a 1000-rpm band, the V-four does so over a 2000-rpm spread. Upstairs, there's more horsepower under the curve, which helps to explain why the heavier V-fours could run with the Kawasaki at the strip. The Kawasaki, however, has marginally better horsepower figures, in general, from 2500 rpm to 6000 rpm. The quickest and fastest Honda CH750F in our record books ran a 12.57 105.01 mph quarter mile, it made the same kind of upper end dyno power as the V-four, was about as strong down-range, and weighed about 30 more pounds than the Magna. Figures aside, the Magna and Sabre are strong. The V-four impresses riders as having a broad, flat and high torque curve and a lot of pull-away power in sixth gear.

That quality about the V four makes one wonder whether Honda has a touring Magna on the drawing boards. Look how the pegs, gearshift linkage and brake pedal are laid out, and then think about it. Honda could easily make an alternative tank, seat, bar and footpegs for the Magna, then upgrade the rear suspension, and create an instant tourer.

The Magna's seat, a his and her split level number, corresponds to the riding position and rear suspension. The riding position drives long-legged riders back, putting their rumps against or on the rise pocket; it's better for smaller people. The saddle is broad, flat and soft in the rider's pocket. If it feels cushy enough, and with a short rear suspension travel the seat must assume rider suspension duties. Yet after 100 miles or so, a rider feels as if he's compressed the foam even though he hasn't; it's just that fatigue and burn make him aware of the saddle's flatness and the stepped ride. For any one rider, the ergonomic relationships and the saddle construction dictate a single seating position. From that pocket, the rider can get little fore-aft movement, and the rear footpegs are too far rearward to give the rider any alternate positioning. Like the Sabre, the Magna could use some more seat work for those riders who want to ride more than a 100 miles in a stretch.



Again like the Sabre, the Magna throws some heat back on the rider from the radiator. California winter conditions were cool enough that we couldn't quite determine how objectionable the heat throw-off might be. A couple of 85 degree days indicated that the outside temperature combined with radiator throw-off and radiant heat from the rear cylinder head would warm the Sabre rider's legs and thighs to tolerable limits. Clipping along on the Sabre on a 90-degree after noon might be unpleasant. The Magna, with its wider gas tank and different riding position, doesn't have the problem to the same degree as the Sabre. In part, the rider's legs are farther away from the engine; also, the Magna's riding position encourages lower highway speeds. We'd fake a fair amount of heat to get this engine; it's that much a functional marvel in other ways. In functional terms the Magna is compromised compared with the Sabre. Pure-blood sporting riders will proceed directly to the Sabre without so much as a look at the Magna. But guys who want that engine in a motorcycle with styling bias will gravitate to the Magna. Honda figures the Magna customers will outnumber Sabre-types three or four to one. These V-fours signal a giant step forward; they represent a breath-stopping escalation of techno warfare in the motorcycle market; they portend the arrival of a whole new generation of Honda street motorcycles; and the Magna, especially, announces that in the future everyone will have to sell style and super tech together.









# BAD NEWS TRAVELS FAST.

We've got some very bad news for the competition and some very good news for you.

It's called the V65 Magna™

Like the V45 Magna™ it's a liquid-cooled, shaft-driven, custom-styled motorcycle powered by our revolutionary 90° V-4 engine.

But unlike the V45 Magna, it's not an incredibly powerful 750. It's an outrageously powerful 1100.

And if the thought of all those cc's makes you want to head for the nearest dragstrip, we've already beaten you to it.

On October 3rd, 1982 we took a brand new V65 Magna to Orange County International Raceway in Southern California to see what it could do in the quarter mile.

It did something incredible.  
10.92 seconds.

If you're not one of those people who memorizes quarter mile times like batting averages, we'd be more than happy to tell you what this means.

It means that the V65 Magna is the fastest production motorcycle we have ever made.

Not one of the fastest.

Not almost the fastest.

The fastest.

But since you probably won't be doing your riding on a dragstrip, we'll also tell you what all this power means out in the real world.

It means effortless cruising at highway speeds.

It means you don't have to shift up and down searching for the powerband. Because the power is always there.

It means that passing nearly anything is just a matter of flicking your wrist.

As for the competition, it means just one thing.  
Trouble.



**HONDA**

FOLLOW THE LEADER  
CIRCLE NO. 35 ON READER  
SERVICE PAGE.



**0 TO 55 FASTER THAN YOU CAN READ THIS.**

**HONDA**  
PUSH THE LEADER

