

Honda mechanic Eric Crippa swung open the rear doors of the red, white and blue team transporter, allowing a shaft of midday sun to illuminate the interior. There, shoehorned between the workbenches, welding bottles and racks of spares was the motorcycle of a thousand riders' dreams. A slender silhouette, it looked surprisingly small next to its 1986 stable mate. Marty Smith stared intently, then began shuffling around near the back of the truck, trying to get a better view—a glimpse of the forks, the tiny aluminum tank, the shocks, the swingarm, the engine that carried him to one stunning victory after another, to a level of motocross stardom enjoyed by few riders in the history of the sport. After a few moments, Marty began looking at the Honda more hesitantly, the way someone gazes uncertainly at an old friend during a high school reunion. Was this really the same machine? His only verbal response was an elongated "Wow!" not unlike that of the awestruck spectators who first stole a glimpse of the bike at its 1975 Hangtown National debut. Micky Dymond carefully scanned the RC as Eric rolled it out of the truck and lifted it slowly onto its stand.

"I used to have one of these," quipped Micky, "for my G.I. Joe."

TEN YEARS AFTER

A look at the legendary 1975 RC125 & how it stacks up against the 1986 works/production hybrid

By Fran Kuhn

COMIC RELIEF

In 1975 the RC125 Honda works machine was a technological wonder that represented the pinnacle of the mighty Japanese motocross effort—the product of HRC's most gifted mechanical artisans. The bike and its rider carted off almost every National win, as well as the 125 title. Along with its 250 and Open class brothers, it established a mystical aura that surrounds Honda's works machines, even today. When Honda goes racing, they do it to win, and their commitment is as evident and uncompromising now as it was in 1975. Their strategy is simple: Hire the best riders and build them the best equipment. One thing, however, has changed, and that's the degree of secrecy surrounding the high-tech works wonders. Of course, there still aren't bus tours of the company's R & D facilities. In this age of production-based racing, however, the Red Giant seems a bit more tolerant of journalistic types who like to pry and snoop with

Marty Smith jumped off his Kawasaki KX250 to take a few laps aboard the RC125 works Honda. Marty rode the machine to the 1975 125 National Championship; Micky Dymond (43) is on his way to claiming the '86 crown with the latest CR125 works Honda. ►





"Marty always gave it 100 percent," said former Honda factory mechanic Jon Rosenstiel. "He'd just gas it everywhere and be hanging on with one hand over a jump." Here's Marty demonstrating complete control of the RC at the 1975 Mid-Ohio USGP.

Jim Gianatsis



Marty easily cleared a 40-foot road jump aboard the 1986 works/production CR125. "The bike makes good power," said Smitty, "but in the suspension is where the new bikes are really different. It's almost unbelievable how far they've come in ten years. I don't really feel any older, but one ride on that old bike gives me second thoughts."



With seven inches of suspension travel on the RC, Marty wasn't anxious to practice any doubles. Both Smith and Micky Dymond thought the 1975 bike made good power but was held back by the archaic suspenders.

loaded cameras and tape recorders, even going so far as to offer test rides aboard the coveted works equipment. Back in the old days, the veil of secrecy was drawn and arc-welded shut. Precious little information was available about the goings-on inside the factory, and even less was known about the bikes. Now, ten years after the RC125 was

rolled into mothballs, a closer look is in order. Just how much have things changed, not only with the machines, but with the riders and the sport itself?

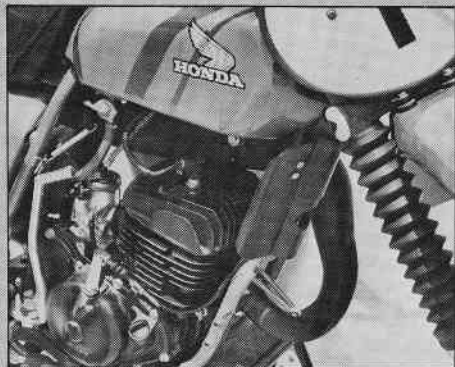
THE FACTORY CONNECTION

Honda of Japan built no more than five RC125s for the 1975 racing season, and three of the machines eventually found their way

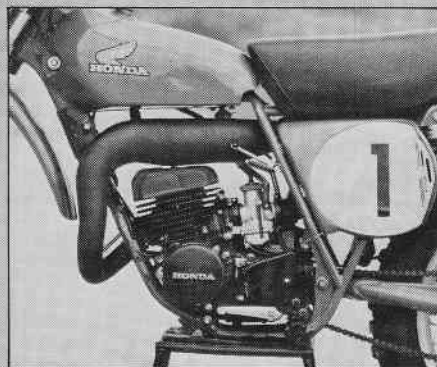
into American Honda's racing stable. All of the bikes had hand-built, chromoly frames and thick-walled oval-section aluminum swingarms. The lightweight items found on nearly all of today's production motocrossers were, at the time, reserved for the works arsenal only. Saving weight (not money) was Honda's prime consideration, and the total ballast of the RC, as delivered from Japan, was just 168 pounds—eight pounds under the AMA/FIM minimum for 125 class equipment. This minor dilemma was conveniently solved by casting a new cylinder head in solid copper, boosting the total package to just a hairsbreadth above the then-required 176-pound minimum.

Even now, Honda's penchant for saving weight is startlingly evident in all the RC's major components. Both triple clamps are fabricated in the flyweight mold: The lower unit is carved from billet aluminum; the upper one is sand-cast magnesium, and the riders were able to choose between three different fork bridges, each offering varying amounts of steering leverage. Depending on track conditions and rider preference, either a high or low seat/bar combination could be fitted. The "high" combination is now permanently in place. The bars are chrome-plated Bates models, and the overstuffed seat's base is the only stock component on the entire machine, except for the shift lever and a few nuts and bolts.

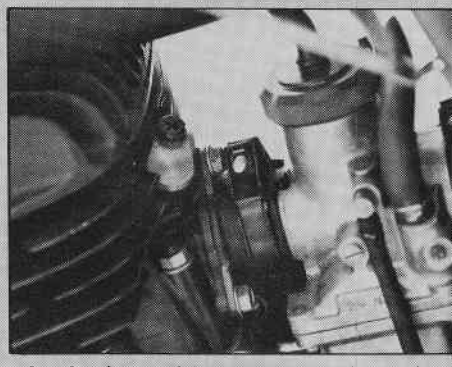
The RC's wheels, hubs and brake backing plates are sand-cast magnesium; the hubs are laced to gold-anodized DID rims with heavy-duty spokes, and a set of vintage 1975 Bridgestone knobbies wrap around the lightweight wheel assemblies. The front fender is plastic, and the rear is hand-laid fiberglass, as are the red-and-white side-



A black plastic guard is bolted to the RC125's front downtube to prevent mud buildup on the copper cylinder head. The bike uses a standard CR250 Elsinore clutch, and a large idler gear housed above the kickstarter was intended to drive a proposed fuel injection system.



Donny Emier of FMF built the RC's up-and-over pipe to give the engine a broader power spread. The standard CR125 Elsinore chamber actually delivered more horsepower, but the spread was unacceptably narrow. Factory riders Marty Smith and Tommy Croft had a choice of three ignition systems, each one with a different flywheel weight to control wheelspin.



An aluminum plate covers a casting at the rear of the cylinder for a fuel-injection nozzle. The original RC carburetor, a 29mm Keihin, is sand-cast aluminum. The total cost of the RC125 in 1975 dollars is estimated at \$18,000.



◀How much have things changed? Back in '75, the RC125's aluminum swingarm, air/oil/spring Showa shocks, and single-leading brakes were the best that money could buy. In comparison, the 1986 production machine uses a modified aluminum swingarm and a powerful disc brake, which is not only better, but considerably cheaper.

The 1975 RC125's forks feature sand-cast magnesium legs and hand-carved damper rods. Total travel: Just over seven inches. Even if they were made from cast iron, we'd still prefer the '86 forks to the old tubes. ▶



panel numberplates. The rear of each oval plate is flared to clear the wide upper body of the factory Showa shocks, and each panel has been given the Swiss cheese treatment with an exacto knife to improve the flow of cooling air around the damping units. The shocks feature a then-revolutionary air/oil/spring system and a set of unusual-looking "fork" gaiters on the lower half of the bodies. While the factory Showas looked state of the art in 1975, they were actually deficient in several critical performance categories.

"They were extremely heavy," recalled Jon Rosenstiel, Marty Smith's mechanic for that championship season. "We couldn't get them working right and eventually switched to a set of Gas Girlings, which Marty used for the majority of the season."

Jon, perhaps more than any other person, intimately understands the strengths and weaknesses of the RC125's formula. As the kingpin of Honda's elite factory mechanics in those glory years, Rosenstiel (now a factory wrench for Yamaha's Broc Glover) established a reputation for being both a meticulous craftsman and a highly imaginative technician. He took the base product carved in Japan and made the numerous mechanical adaptations necessary for suc-

cess in a highly competitive Stateside motocross environment. Nowhere was his handiwork more apparent than in the development of the RC125's engine.

IMPROVING THE FORMULA

Even a machine delivered direct from the womb of Honda of Japan's Racing Department is not perfect, and the 1975 RC125 was no exception. Much of the motorcycle's development work was done in the laboratory and on the dyno, far from the cutthroat rigors of real-world motocross competition. To further complicate the problem, riders in the U.S. motocross arena—particularly Marty Smith—were developing their talents at a rate considerably quicker than pilots elsewhere in the world. One pounding lap in the hands of a boy wonder like Smith could isolate more weaknesses in the machinery than a legion of white-coated technicians and a hundred hours of lab testing. As Marty's riding ability improved, Jon was faced with finding new ways to coax more firepower from the tiny 123cc mill. This was no easy task, as the engine was already quite revolutionary in its original configuration. The cylinder serves as a good example: The barrel offers the option of utilizing a conventionally aspirated induction system (carburetor) or mechanical fuel injection. The

rear of the cylinder casting carries a port for the proposed injection nozzle, the optional system to be powered by an idler gear running within the kickstart lever's housing. Because AMA rules restrict motocross machines to the realm of conventional aspiration, the system remained unused in the U.S., though it likely reached the prototype stage in Japan. In 1975, mechanics had the option of running either an iron-lined or chrome-bore cylinder. While the plated cylinder offered both lighter weight and better performance, problems with chrome flaking and seizures forced the team to switch to the iron counterparts early in the season. Both the piston and rings are slightly modified off-the-shelf production parts, and the clutch is a straight-cut 250 Elsinore item. The close-ratio transmission is a factory one-off cluster that sports hand-cut gears.

The carburetor originally supplied by Japan and fitted to the bike today is a 29mm Keihin—a sand-cast machine-shop special that mechanic Crippa says would likely have cost thousands to make, even in 1975 dollars. (Eric spent hours scraping layers of hardened white crust from the precious blender before the machine could be started for our test.) Back in '75, when the need for more



Micky Dymond's ride aboard the RC was a revelation. "I can't even imagine trying to ride a Supercross on that bike," said Micky. "About the only thing that's really good about it is the weight."

power became obvious, mechanic Rosenstiel switched to a 34mm Mikuni, a far more effective choice for the smooth, fast American circuits of the day.

The search for more power also produced revised port configurations and an up-and-over expansion chamber developed by FMF's Donny Emler at Rosenstiel's request.

"The new pipe actually didn't hit as hard on top as the stocker," said Jon, "but it did give the bike a broader spread. Marty and Tommy Croft (Smith's 1975 teammate) liked that a lot better."

The final combination of Rosenstiel's mechanical expertise and Marty Smith's riding ability easily snared Honda its second number one plate in two years, and the championship 1975 RC was quickly retired to HRC's California warehouse. To the best of anyone's knowledge, it's never been run since—until now.

THE RIDER'S VIEWPOINT

After more than half a season aboard his Chris Haines-tuned CR125 works/production machine, it's not hard to imagine Micky Dymond's reaction to his first ride aboard Smith's 1975 RC racer.

"It feels like it's pretty fast," said Dymond, "but you're pretty much limited as to how fast you can go by the suspension. I can't even imagine trying to hit a double jump with it."

After several laps around Marty's hillside practice track, Micky had tasted enough 1975 technology and was ready to jump back aboard his '86 machine. Was there anything good about the old bike?

"Well," reflected Dymond, "it is light, and it's really low to the ground. In some places it's almost too low... a few times I

almost fell over just from leaning into a turn. I tried to put my foot down for a corner, and it would drag on the ground. I can't imagine trying to go through a set of stadium whoops!" Marty quickly commented on Dymond's observations.

"They really didn't have stuff like that back then," said Smith. "At the most, they had maybe one double at a time—two doubles, that was unheard of... they would have laughed at you if you had even mentioned something like that." Marty's evaluation of the RC's motor was surprisingly good, even if it has been ten years since he last rode the machine.

"It has a lot of potential; it feels pretty fast, but the suspension holds it back," he said. "The bike doesn't go anywhere when you gas it. It just sits there and bounces around on all two inches of travel."

Marty's brief spin on the '86 works machine wasn't really a revelation. He's been active in riding and local racing since retiring from Team Suzuki back in 1982, and since then, has won several not-so-minor events, including three "King of the Desert" titles and the "Champs of the Past" crown at the recent Magoo Invitational. He's a fast rider who knows what a motocross machine is supposed to do. Still, he thought Honda's latest-generation works weapon was superb.

"It's awesome," said Marty. "The back end works great, and it has good horsepower. The brakes are really strong, especially the front... the whole thing works perfectly."

And how did it compare to the 1975 machine? Marty's reply came without as much as a moment's reflection.

"You could probably compare those two bikes the way you'd compare a '56 Volkswagen Bug and a brand-new Porsche 940. The difference is unbelievable."

SOME THINGS NEVER CHANGE

Given the intensity of competition among the Japanese factories, the level of techno-

Even with an additional 30 pounds of weight, the '86 works machine holds every possible advantage over the '75 bike. Marty wasn't willing to try anything radical on the old RC; Micky wouldn't even think of it.

logical advances made over the last decade isn't surprising. Of course, the very nature of the sport has been radically altered by the passage of time. It has changed from a more-or-less casual and friendly affair to something closely resembling a hard-line business venture. This transition has had its effect on the rider/mechanic relationship as much as any other aspect of professional competition.

"Nowadays, the riders come in from practice saying, 'This doesn't work,' and 'that doesn't work,' and 'change this,'" said Smith. "Back then, we'd come in and maybe say, 'The chain's a little loose,' or 'Put a little air in the shocks.' Now, the bikes are so technical. Back then, we were only concerned with having a little more horsepower than the other guy." Micky Dymond listened carefully as Marty continued, dividing his attention between the ex-champ's comments and some race photos of Smith from the '75 season.

"Nowadays, the equipment is so important," offered Marty, "in 1975 everything was new. The sport was so new that we were just taking each track and each bike and each year in stride. I had a lot of other things to concentrate on besides the bike." Smith paused for a moment as Micky, shaking his head in utter disbelief, held up one of the photos showing Smith airborne on the old RC, perhaps 20 feet above the surface of the track.

"What about this?" gasped Dymond. "I can hardly believe you did *this* on *that* bike! What were you thinking?" Marty reflected only briefly before delivering his reply.

"I guess I just *didn't* think," said Smith. "If I had, I never would have done it." □