WIN A BRAND-NEW CR250!
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DIRT RIDER

Ultimate XR!

JANUARY '89 $2.25 £ 1.60

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Ultimate XR!

THE BIKE HRC *WISHES* THEY'D BUILT

I've never understood why the major manufacturers refuse to believe that the public would buy no-compromise four-strokes, even if they did wind up being a bit on the expensive side. I've been waiting five years for someone to build the bike you see on these pages. I started expecting good things from Honda in 1983 when rumors were flying about an enduro-ready chassis housing a high-tech XR250R four-valve single. The time was right; Honda was really coming on with giant technological coups that made their four-stroke street engines the state of the art. Plus, their motocrossers had risen to the head of the pack; clearly, they knew how to make a good chassis and suspension. A marriage of the CR chassis and Honda's four-stroke expertise would be awesome.

Then Honda released the XR250R and reality set in. We got a fairly trick motor with overheating trouble in a short, fat, ugly chassis. What hap-

Finish Line Racing's Doug Johns felt that an XR/CR marriage would produce the best of both worlds, and he wanted it badly enough to build his own! The bike is a flawless gem of four-stroke performance.

Ultimate XR!

pened? They'd started with a clean sheet of paper, so why did they get out the water pipe for the chassis, then support it with outdated suspension components? And what do you mean, it's 245 pounds dry?

I was bummed. I spent all year dialing in and playing with the XR, but on race mornings the XR stayed in the pits while I raced my Husky. I concluded that the XR motor was neat, but the chassis was hopeless for what I demand of my bikes. Honda called the XR an entry-level motorcycle. I guess they figured that if you aren't a proficient rider, then good handling and suspension aren't necessary. That seems an odd premise to me, but I guess beginners have to pay some kind of dues; we don't want to make initiation too easy for them.

I decided it was time to do the job myself, though I heard nothing but laughter when I said I was going to put an XR250R motor in a CR125R chassis. I guess I was partly to blame. I bought a CR125R in 1987 to get started, but it handled so well and was so much fun that I couldn't bear to cut it up. Then in '88 I got tired of the ribbing and bought a used CR125R raced by Rich Taylor. I was in business. After spending two weeks measuring and weighing parts, I was convinced I could make the swap work.

I put a couple of ads in *Cycle News* to sell off the CR's engine, pipe, radiators, tank and shrouds, and the XR's plastic, wheels, suspension and swingarm. The result was an XR250R motor and CR125R rolling chassis for $900.

While I was parting out the two bikes, I did some weighing and found that the CR motor with radiators weighed 45 pounds and the XR's 70 pounds, and the XR frame weighed two pounds less than the 125's! On the plus side, though, the two frames were nearly identical from the swingarm pivot forward, so I decided not to make up new frame tubes and motor mounts.

With help from several people, I used a frame jig to hold the steering head, swingarm pivot and upper and lower shock mounts on the CR. After the frame was jigged up, the lower cradle of the frame was cut away so that only the backbone, steering head, upper portion of the downtube and upper shock mount remained. The same portion of the XR frame was cut away and the backbone discarded. After splitting the downtube of the CR at the bottom of the steering head gussets, I slid the XR downtube up inside it and welded them together. Next, the swingarm pivot area and lower shock mount were fabricated, then the pivot area was bored to accept the CR swingarm bolt. The lower shock mount and swingarm pivot were jigged before any tubes were welded. The rest of the cradle was welded up, and I boxed the swingarm pivot like the ones on the '88 CR250Rs and '89 YZs.

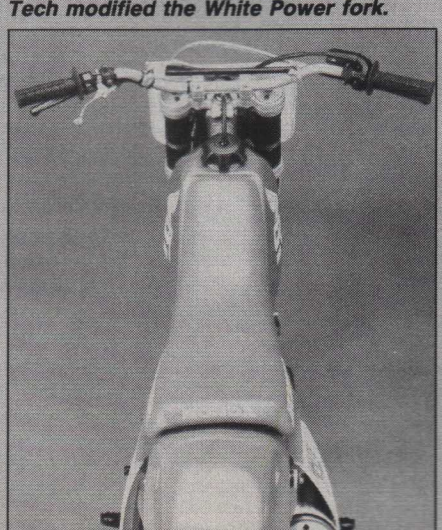
The Ultimate XR is more competent at speed than a standard XR, and the suspension makes it better in the bumps. None of the trail handling was sacrificed either.

ALMOST HOME

At that point the bike could have been bolted together and ridden, but I wanted it to handle like a CR125R! The footpegs needed to be relocated directly under the swingarm pivot as the CR's are, so I bolted the hybrid frame into a mill and bored holes where threaded sections of bar stock would be welded, becoming the new footpeg mounts. The footpeg forgings also had to be cut and reshaped, and, while I was at it, I lowered the pegs half an inch.

As expected, the engine bolted right in, but spacers had to be machined to make the CR's swingarm fit the XR's lower frame. Also, the CR uses the rear of the engine cases as part of the swingarm pivot, while the XR motor is slightly in front of the pivot. An aluminum spacer was fabricated to keep the

The bike is super slim thanks to the skinny aluminum tank, one of the largest single-item expenses. Race Tech modified the White Power fork.



PHOTOS: LYNN McCREADY

swingarm bearings working freely.

The choice of the '85 twin-carb XR motor was a deliberate one. Its top-end power is unequalled by later-model XR250R motors, and it has better oiling and a superior ignition to the otherwise identical '84 engine. I built this bike specifically for the area and trails I ride. If this bike wouldn't go where my buddies' bikes go, I'd never hear the end of it. I wanted the handling of a CR125 and the power of a four-stroke, but the bike had to be able to climb huge sand hills, too.

The XR350's 26mm carbs are slightly larger than the 250's, so they were used, but that wasn't the only change necessary to make the engine breathe better. XR airboxes and air boots are notoriously small, so I used larger XR500R air boots and a CR125R airbox with a KTM air filter element on a homemade cage. I had the front of the airbox closed off completely by a company that does plastic welding; then the XR500R air boots were attached. The primary carb received a velocity stack inside the air horn to improve low-rpm response.

Inside the motor are a White Brothers 10.5:1 high-compression piston, one of their valve spring kits and a 1491 camshaft. The cam really woke the engine up! The exhaust had to be hand-built to fit the chassis using short header pipes into a 1⅝-inch collector. The collector fits into a cut-to-fit Megalloy with a SuperTrapp muffler/spark arrestor.

The clutch slippage problem typical of early XRs was solved by using '88 XR plates and stiffer clutch springs. The actuating arm on the clutch case was lengthened, and a CR125 clutch perch and lever ease the pull. The final change was to an Answer Roost Boost; I don't like them on two-strokes, but I'm happy with the results on the thumper. Overall, I'm more than pleased with this motor setup, though it was a nightmare getting the pipe to fit and stay nicely tucked in.

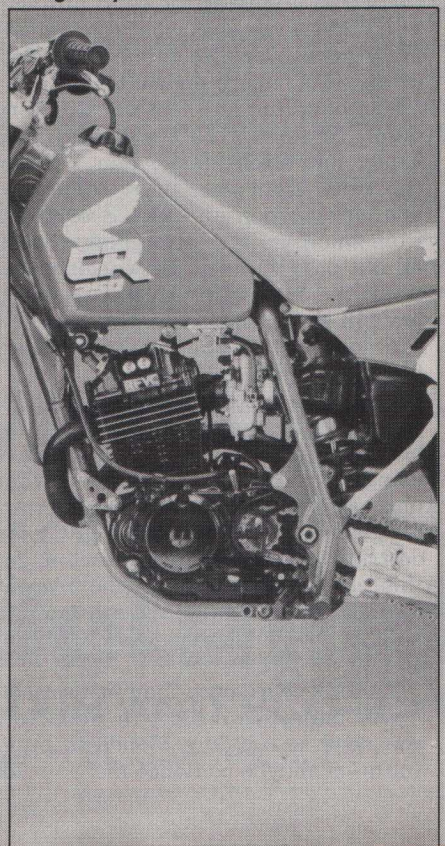
A FUELISH DECISION

Once the frame and engine were together, it became obvious that no ready-made fuel tank was going to fit. As long as I had to have a tank made, I decided that a trick aluminum model in the lowboy '88 CR250R fashion was the way to go. I talked Steve Pittman, an aluminum hammerman, into doing the actual work. The instructions I gave him were: no wider than the seat in the rear, no wider than the fork in the front and no taller than the steering head at the front. The 2.1-gallon container that resulted looks sano! Unfortunately, the price of a tank like this runs one-quarter to one-third the total cost of the bike!

With the stock CR suspension, my hybrid was already better suspended than any XR in history, but I had already gone through too much work not to make it perfect. That's where Paul

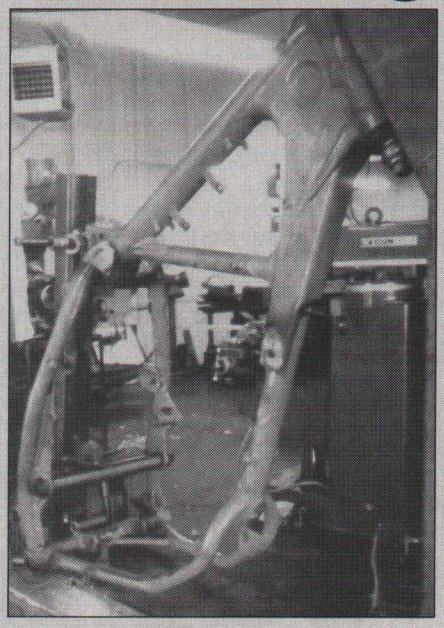
The fuel tank and Finish Line stand are among the few non-Honda parts. The WP fork is a personal preference.

Using the lower XR frame cradle made the engine fit sano. The footpegs and swingarm pivot have been relocated.



Making the pipe fit was difficult, but using a different airbox would have helped simplify matters.

Ultimate XR!

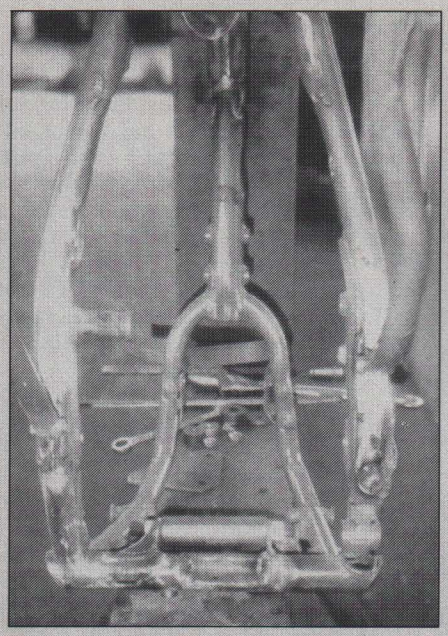


The semifinished product looks production except for the welding burns on the paint.

This is all that was left of the basic CR frame, though its subframe and some brackets were also used.

Thede and Race Tech came in. Race Tech already had the suspension on my CR125R working perfectly; the shock on that machine is the best thing I have ever ridden with. In fact, everyone who has ridden the bike has sent their suspension to Race Tech immediately. 'Nuf said.

I started out with a 1985 Showa fork with a Mugen kit inside providing adjustable compression and rebound damping. I've used the same fork on two CR250Rs and my CR125R, and I didn't ever think any fork would equal its smoothness and damping action. Then Race Tech built me a White Power 4054 upside-down fork that is pure magic. It equals the Mugen Showa's fork performance, is more rigid and has no slider underhang! The same settings were used for my CR125R, but I added three millimeters more preload front and rear and raised the oil level 10mm in front. This is one smooth-riding scooter that doesn't bottom out.



The rear of the XR subframe was ground clean and the subframe brackets and lower shock mount added.

HAPPY TRAILS

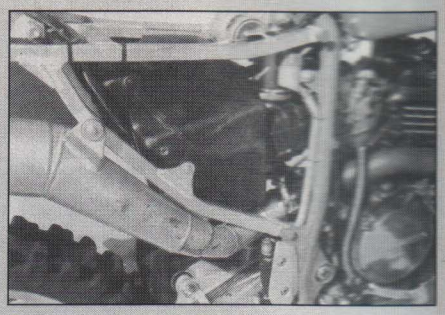
After the bike was completed I headed directly to the Colorado 500 trail ride. There I found that my four-stroke CR had everything I'd hoped for: four-valve thumper power in a light package (three pounds heavier than an '88 CR250R), 12 inches of travel, a seat height and handling suitable for trail riding, and disc brakes front and rear. Oh, and the lights work, too.

I have over 1000 miles on the bike at this point. I gave it the sand hill acid test, and it even does what other small four-strokes won't do: climb hills. Naturally, it is superb on the trails.

The handling and feel are still very much like a CR125R's. There is no heavy four-stroke feel when I throw the bike from one tight corner to another or when jumping. Everything from small trail chop to giant whoops all but passes under the wheels unnoticed, and the seating position is excellent. In short, there is nothing an XR can do that this bike can't do better, faster and with less effort.

Now that I've built one, it's still beyond me why Honda doesn't build this bike. The thing nearly bolts together using stock Honda parts! I somewhat understand why the XR has no cartridge fork and why it comes with a pedestrian shock, but why didn't it get this chassis? Sections of the two fit right together. It can't cost any more to build a CR-type chassis than to build one for an XR.

This bike was more than just satisfying to build; it's a blast to ride. Now you need to convince Honda to build yours—or maybe convince me. **DR**



Getting clearance for the pipe was tough. Note that the airbox provides clearance for a pipe on top, but the chassis is too crowded to get the pipe up there.

THANKS TO:

ACERBIS PLASTICA USA—
Lights, fenders
10911-H Wheatlands Ave.
Santee, CA 92071
619/562-1440

JESUS GUTIERREZ—TIG welding

INTERLINK DIST.—
Tomaselli bars
2335 D Gold River Rd.
Rancho Cordova, CA 95670-4434
916/635-8000

STEVE PITTMAN—Gas tank

PRO CIRCUIT—
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WHITE BROTHERS—
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XR's ONLY—Carburetor
6944 Santa Fe Ave.
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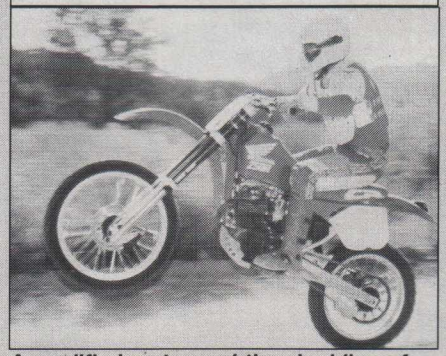
619/244-2626

Doug Johns is the owner of Finish Line Racing in Yorba Linda, California. He has been involved with motorcycles in general and trick thumpers in particular for many years. Doug has no interest in selling his bike, but enough sincere interest may persuade him to offer frames or complete replicas. Those interested can contact him at 714/528-1448.



A modified motor and the shedding of nearly 20 pounds have made the Ultimate XR a great performer.