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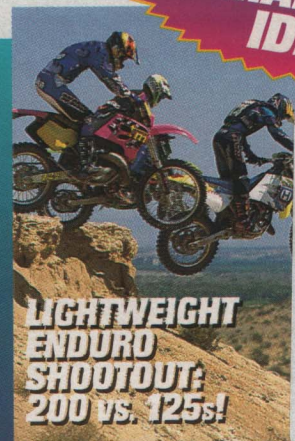
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SEYMOUR



By Ron Lawson

It's amazing how the human brain works. No, let me modify that: It's amazing how *my* brain works. Just try to follow the logic path that put me on the world's fastest XR400 (an XR460, actually) at the Trail Riders of Houston's Two-Day ISDE Qualifier. I started off knowing these facts:

1. I am getting old and worn out and have proven to myself that I don't need to go to the ISDE anymore.

2. I like the Honda XR400 because it has mild power. Perfect for old, worn-out riders who don't want to go to the ISDE anymore.

3. In fact, I don't need to go to *any* really difficult enduros any more, especially not the kind thrown by the Trail Riders of Houston—they are most famous for making Terry Cunningham pass out from heat exhaustion every year.

So given those three facts, why did I think it was a good idea to ride the XR460 in Houston? Beats me—but it turned out great. So much for logic.

BUILDING THE PERFECT BEAST

Dave, Gary and Russell, *a.k.a.* the guys at Thumper Racing, were in a very small minority. They didn't like the XR400R when it arrived. They had been building their own middleweight thumpers out of

figured out how to get 440cc out of the XR by pushing the bore 4mm, which is about as far as it will go. Then the Thumper crew started looking at the crank. Sure enough, there was enough room to offset the crank pin by 1.5mm, resulting in a 3mm increase in the stroke. So the stocker has a bore and stroke of 84mm by 70mm, and the 460 (actually 456cc) measures 89.2mm by 73mm. Remember the original XR500R? It measured 92mm by 75mm. If we go much further, we might arrive in 1981!

They decided to stay with a stock cam. Once you regrind the cam for more overlap, you create several problems. Generally, the motor revs higher, which can cause valve float. That means you have to use

Honda didn't really design the XR400R to be punched out—XR600 sales might be affected otherwise. However, some companies like Thumper Racing have figured out how to do it without turning the bike into a time bomb. ▶

◀ Gary Hazel did much of the development for the 460 kit. Here he is in his laboratory. Work, work, work.

HONDA

XR460

*Thumper Racing closes the gap
between the XRs*

XR250s and DR350s for years, so they didn't see anything really new in the XR. All they saw was a poorly carbureted little four-stroke with unbalanced suspension and a weak clutch. In outright horsepower, a stock 400 wasn't that much faster than the XR300s they built for customers. They did, however, see potential. With a little work, the 400 could produce as much power as an XR600, but with 20 pounds less weight and a much narrower motor.

The problem was that Honda didn't really want the XR400 to infringe on XR600 sales. Accordingly, it's very difficult to increase the displacement of the 400. Several companies, including White Bros., IMS and then Thumper Racing,

stiffer valve springs, which, in turn, means that the reground cam gets worn out more quickly. Besides all that, you really don't want the XR400 to rev any higher. It already goes to 9200 rpm and then hits an electronic rev limiter.

Much more important than more revs was making the XR carburetor smoothly. In stock form, there are lean and rich spots that seem almost impossible to jet out. A 34mm flat-slide Mikuni might not be a high-tech-sounding resolution in the age of the computer chip, but it still gets the job done. It took some work to get the carb in place, because it isn't quite the same shape as the stocker. A kit is in the works right now. The carb eliminates the double, push-pull cable setup. Thumper



XR460

also installs heavy clutch springs and extended the clutch actuation arm on the engine to make disengagement easier on the arm.

Suspension was the next big hurdle. Thumper worked out the specs, then contracted Scott's Performance to do the work. Stock, the front of the Honda is much softer than the rear, and both ends are overdamped. New springs in the front and some revalving make the XR a better-balanced package.

That was all the hard stuff. Then it was a matter of bolting goodies into place. The XR needs different bars (Alumilites, CR high bend) stronger footpegs (Thumper Burlly Pegs), a stiffer shifter (Thumper) and a taller seat (one-inch seat foam). A steering stabilizer isn't an absolute necessity on the Honda, but it sure can't hurt, so we installed a Scott's.

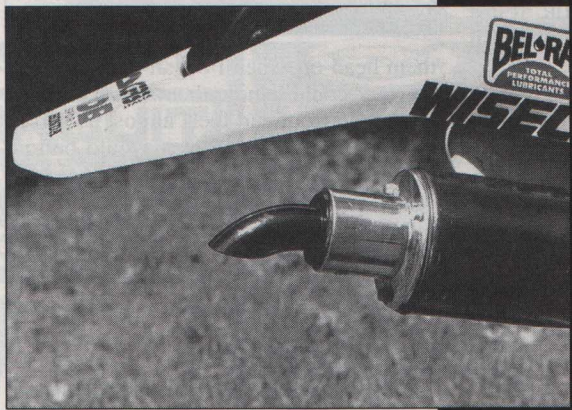
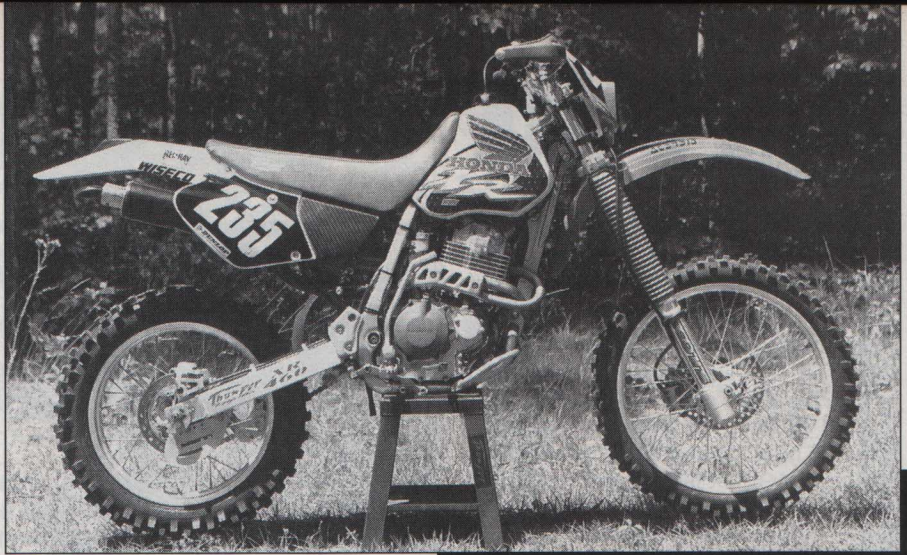
So, basically, the Thumper guys had built the ultimate XR400, and they wanted someone to ride it at the opening Qualifier. Could you turn down an offer like that?

TEXAS TEA

Round one of the National Reliability Enduro Series (otherwise known as the Qualifier series) was in New Waverly, Texas, not far from Houston. When I picture Texas, I basically see Southern California with lots of cowboy hats. New Waverly couldn't be more different from SoCal. For one thing, that end of Texas has surprisingly tight woods. The trails consist of short straights and sharp turns. You never get more than two shifts out of the bike, then you have to throw it into a silty 180-degree turn. Also, between any two turns, there are always 617 exposed roots. Texas roots are different from California roots. California roots are usually the diameter and consistency of string. Texas roots are Texas-size. Then there's the air, which is 95% liquid. That has a way of making 90 degrees feel like 130 degrees.

My first reaction to Texas was just like my first reaction to anything strange, new and scary. I clutched it. I would shift up until I found a gear that the 460 couldn't possibly pull, then make up the difference by slipping the clutch. The 460 felt like a fast 600. It truly did make more power, but not everywhere. A 600 makes much more right off idle, and then the 460 catches up and pulls away. So my abuse-the-clutch-until-it-begs-for-mercy technique would work to a certain point, but often I would find myself in *too* high a gear. The solution: abuse the clutch even more. I probably spent more time in fourth gear than in first during the early miles of the race.

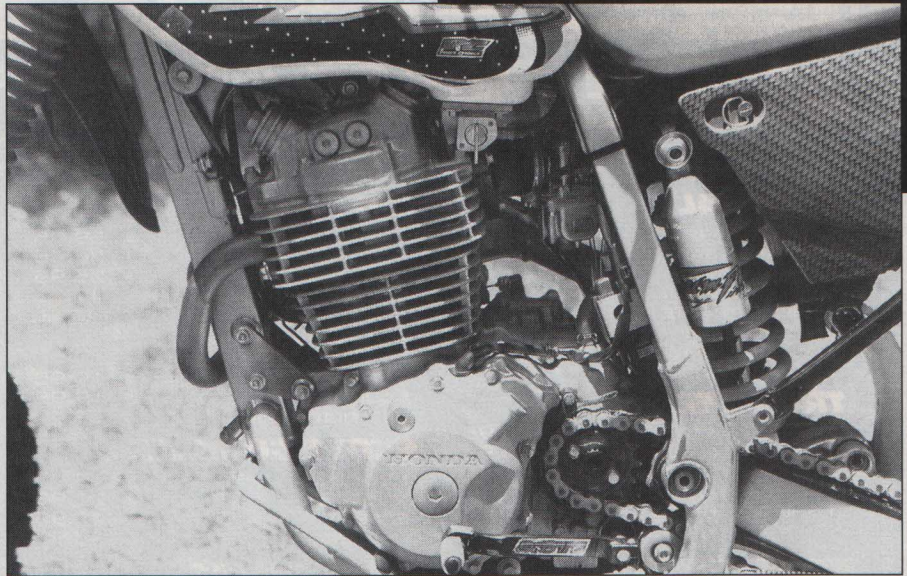
By the time I reached the first check, the clutch was smoked. I was afraid that



Thumper Racing has its own suspension specs, with the actual work done by Scott's Performance. It's perfect for back East, but a little soft for West Coast stuff.

◀ The stock XR muffler is too plugged up with the stock baffle and too loud without it. The Stealth insert is a compromise. Virtually everyone who races an XR needs it.

The piston is as big as she will go. The stroke is as long as she will go. So is the 460 a time bomb? Apparently not. ▼



would happen. Before the race even started, I knew that the XR clutch was weak, and this particular clutch was easy to abuse. They had extended the actuation arm a half-inch. That made it easy to pull, but it would start dragging as soon as it got hot. That, in turn, would make it get hot faster. We changed the arm extension from a half-inch to a quarter-inch, which made the lever harder to pull, but clutch action was much less mushy. With the more difficult pull, I figured I would be easier on the clutch anyway. So much for that theory. I installed another clutch at the first check (a four-minute job) and set

out, determined to learn some other technique for dealing with the tight woods.

OH, SO THAT'S HOW YOU DO IT

"Leave the clutch alone," I said to myself over and over. "This isn't a two-stroke." I thought about twisting some sheet metal screws through the clutch lever so that excessive use would draw blood. I decided against it; it was better to ruin the clutch than ruin my hand. As it turned out, such drastic measures weren't necessary. Somewhere between the second and third checks, it happened. Suddenly I realized that I hadn't touched the clutch for a long time. The 460 has a ton

XR460

You don't ride the 460 like a small thumper (wide open all the time) or like a 600 (always at low rpm). It's a midrange four-stroke, not quite like anything else out there. ▶



of midrange power. You don't have to scream it like a stocker and you don't have to lug it like a 600. You just twist the throttle and go. No one will get on the bike and be staggered by the power right off the bat—it doesn't hit hard enough—but it doesn't take long to realize that the bike is truly fast. In straight-line acceleration, it will hang with any 250 two-stroke, from a KTM to a full-MX CR250R. It just doesn't feel like it will, and that's why it invites you to hammer the clutch.

My special test times at Texas proved the point. In the early tests, when I was doing my best two-stroke imitation, the times were bad, even though I felt fast. Later they improved. I still wasn't scaring Guy Cooper, but the later tests where I rode smoother and stayed away from the clutch were about 5% faster, relative to other riders in my class.

I was also getting used to dealing with the roots later in the race. At first I was afraid of them. I would wheelie over them, go around them, do anything but hit

them head-on. Then I began to realize that the fork could handle them. With the fork mods, the front end feels almost as soft as stock, so I assumed that it would bottom horribly if I hit anything hard. It wasn't true. With the fork adjusted fairly stiff (about four clicks out), it would take a big root to make the front end bottom. There were big roots to be had, but in those cases, they were big enough to be seen and avoided.

SURVIVAL

Gary and Russell were disgusted with me when I had to change clutches only 20

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miles into the race. "I didn't bring six clutches, you know," Russell said. Rather than incur the wrath of Russell again, I managed to finish day one and all of day two with the same clutch. In fact, I think I could have gone an entire season on the same clutch, once I figured out how to ride the 460.

The bike truly is the perfect size for a four-stroke. Honda XR600s, and even Husky 610s, are too big and heavy, and normal 400s are too mild. With a 460 kit you get the best of both worlds. What about all that stuff I said about getting old and needing a mild little trail bike? The 460 has me thinking it might have been a little premature. Maybe I've got one ISDE left in me after all. □

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