Horsepower Sampler Plate

Lee Shierts serves up another generous helping of power in three flavors: ***GSX-R1000****,* ***Hayabusa*** *and* ***turbo 'Busa***

by kent kunitsugu photography by tom riles

IT WAS THAT VOICE AGAIN. THE SAME VOICE THAT SPOKE HORSEPOWER IN BIG, RAW CHUNKS. The one that introduced me to my first hair-on-fire, eyeballs-to-the-faceshield eight-second quarter-mile run.

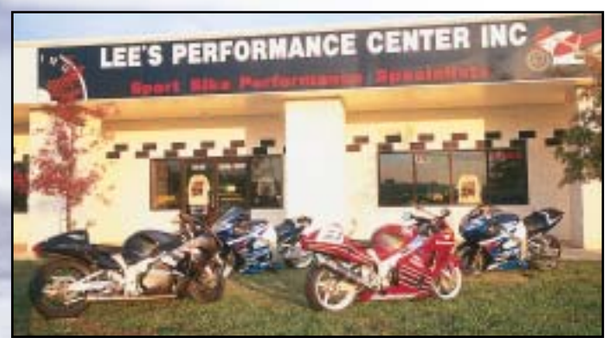
"Kent…this is Lee. Hey, I've got some more bikes you should ride." It was Lee Shierts on the phone, offering up more of his wares that live by the credo "Too much horsepower is not enough." If a new motorcycle is introduced that cranks out big power in stock form, you can be sure that Shierts is already tinkering with one in his shop, devising ways to extract even more speed out of its motor.

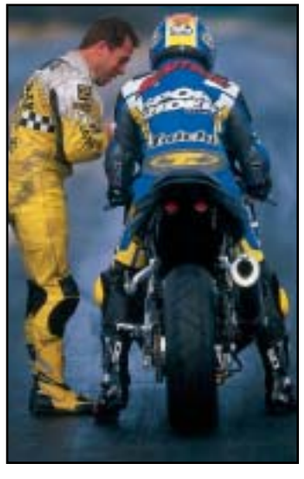
After creating a 220-horsepower, Hayabusa-motored Suzuki GSX-R600 monster ("Baby 'Busa," April 2000), Shierts was understandably interested in Suzuki's GSX-R1000 when it made its debut in 2001. Any motorcycle that cranks out 140-plus horsepower and 75 foot-pounds of torque in stock form, while weighing in less than some 600s, could be considered fresh meat for Shierts. But what really got my attention was when he claimed his latest GSX-R1000 punched out nearly 200 horsepower on the dyno—with no turbos, nitrous or foul-smelling rocket fuel.

This I had to see (and ride). But to make the trip out to Charlotte, North Carolina, really worth it, Shierts assembled a gaggle of machinery for me to try out that had seen his magic horsepower touch in one way or another. These included not only his own GSX-R1000, but a customer's GSX-R1000 as well; Shierts' personal Hayabusa dragbike, equipped (in its latest incarnation) with a near-1500cc, progressive-nitrous-injected motor pumping out 370 horsepower; and another friend's highly customized turbo Hayabusa that cranks out a very streetable 272 horsepower on pump gas.

Things had changed quite a bit since I'd last visited Shierts in Charlotte. The biggest difference was his new Lee's Performance Center shop that he'd had built from the ground up (www.leesperformance.com, 704/599-1507) complete with built-in dynos for both car and bike, large workstation areas staffed with full-time mechanics, an engine assembly room, a full machine shop with an on-staff machinist, and a very well-stocked parts department. This is most definitely not your basic disorganized little shop located in the back unit of an industrial complex. Lee's Performance does a major business in modified bikes, and has a few dozen bikes for sale on the showroom floor as well.

After getting a tour of the new shop, Shierts immediately put both his and his customer's GSX-R1000s on the dyno to demonstrate that





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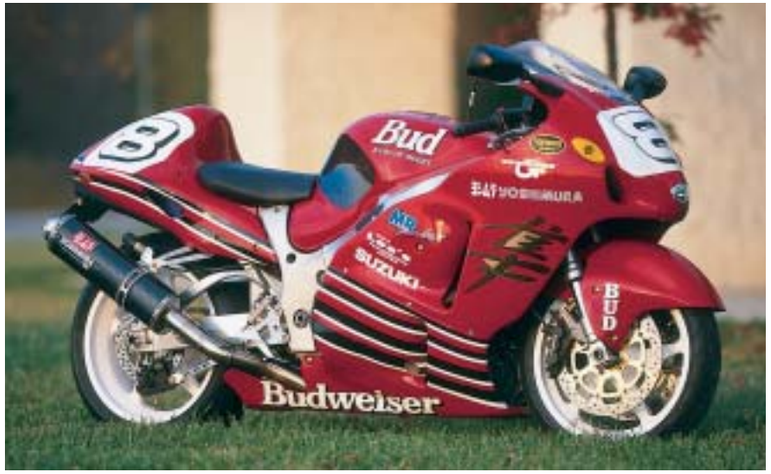

Rich Yancy's turbo Hayabusa may look like a standard Hayabusa with a paint job, but a closer inspection reveals a highly modified motorcycle with a lot of attention to detail. Not only has the Mr. Turbo kit been completely revamped, Yancy's bike has undergone an extensive weight-loss regimen—including a carbon fiber fuel tank and Dymag wheels—that dropped an impressive 65 pounds off the stocker. A complete RacePak data acquisition system records all vital information so that tuning is made much easier. The bike has gone 212 mph at Maxton ECTA speed runs, and cranks out 272 horsepower.

The fabricated aluminum intake plenum is a work of art; note the strap to keep the plenum in place under high boost (top). Yancy completely reconconstructed the intake and exhaust system of the Mr. Turbo kit, including installation of a trick air-to-water intercooler with custom-built water tank located on the right fairing panel (above).

he wasn't blowing smoke with his near-200 horsepower claims over the phone. "You know me, and know that I don't talk BS, but this way you definitely know for sure what these motors are putting out," he stated confidently as he strapped down the first GSX-R to the dyno.

So what was he doing to get this kind of power out of a normally aspirated GSX-R? Punching out the cylinders until they're paper-thin, and stroking the crankshaft to the moon? "Nope, no monster bores and cranks, if that's what you're thinkin'. Just my usual hotrod stuff, with a couple of extra little tricks; the biggest displacement change is the 2mm overbore—that's it." That brings the GSX-R out to 1042cc; hardly a huge displacement change, considering the power produced.

When I mentioned that it would be difficult to stroke the crankshaft anyway, since it was already pretty long (the GSX-R1000 is basically a stroked 750), Shierts mentioned that he does have a 4mm stroker crank available, but it wasn't in either of the GSX-R motors. "They don't really add any horsepower up top—the stroker crank mostly adds a little torque in the midrange, and I'm not all that convinced of their reliability yet," related Shierts. He offered to pull out a plug so I could measure the stroke for myself, but we never got around to it; I've known Shierts long enough to know that he doesn't BS about his motors. He has a long-standing policy that if someone doesn't believe that the parts in the motor are what he says they are, they can bet $1000, and he'll tear down the motor in front of them.

The motors in the GSX-Rs were what Shierts called "Stage 4" kits, but he also has lesser stages for those who don't have as much money to spend. The first step—Stage 2—puts out 165 horsepower, according to Shierts. It involves replacing the exhaust cam with his own grind and adjustable cam sprocket, a manual cam chain tensioner (for reliability), modifying the air injection smog pump to work as a crankcase evacuator (worth three to four horsepower), different airbox stacks, plus labor costs for degreeing the cams and dyno tuning the Power Commander ECU unit. For a total of $1070 (not including exhaust, although most customers already have this), we figure it's a great deal for that kind of power. The Stage 3 kit ups that figure to 175 horsepower, and adds an additional adjustable cam sprocket for the stock intake cam, plus cylinder head porting and valve work along with a complete top end refresh/rebuild, for an additional $1625.

The Stage 4 takes that to the next level by replacing both cams with Shierts' special grind, 1mm oversize valves with matching spring assemblies (plus porting to work with those valves), a set of 2mm oversize JE pistons machined to Shierts' specs with matched cylinder assembly, plus a thorough R&R of the complete motor to ensure that everything goes and works together smoothly.

No nitrous, no turbos, no foul-smelling rocket fuel—just your basic 193 horsepower GSX-R1000. And no big displacement, either; Shierts' GSX-R has just a 2mm overbore. The rest is an extensive array of his own hotrod tricks that transform what was already a bike that should be respected into a bike to be feared.

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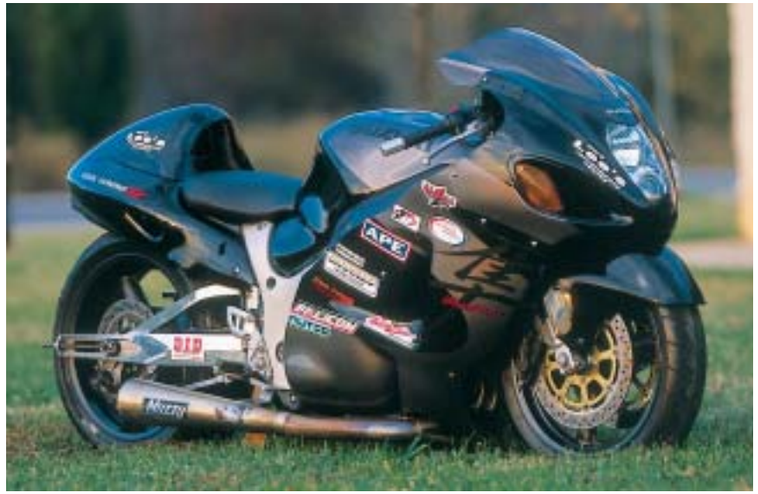


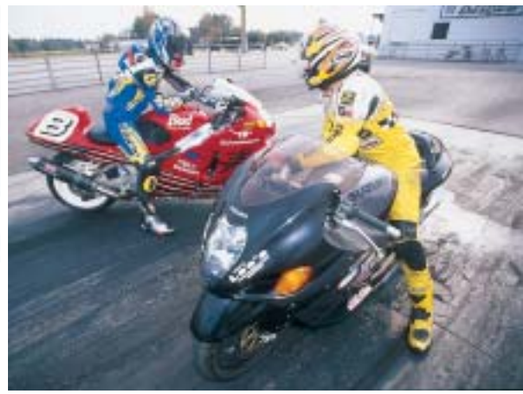
Shierts' fire-breathing Hayabusa dragbike has too many mods to list, so we'll just list his parts sponsors: APE (American Performance Engineering), Dynojet, Falicon Crankshafts, JE Pistons, Millenium Technologies, Orient Express, Webcams Inc., Performance Cryogenics, Nutec Racing Fuels, Trackside Racing Supply of Canton, Gold Star Lazer Chain Guards and Zero Gravity. Shierts was planning on getting me into the 8.5-second quarter-mile range with this bike, but a fried clutch and lack of time killed those plans.

And how much horsepower do you get for your $5545? I watched as Shierts' own GSX-R cranked out 193 horsepower, with a nice, linear power curve. Then I watched in amazement as his customer's bike (belonging to Joe Bidwell) was strapped to the dyno, then promptly proceeded to pump out 197 horsepower at 11,250 rpm, with 100 ft./lbs. of torque! Definitely impressive for a pair of normally aspirated GSX-R1000s.

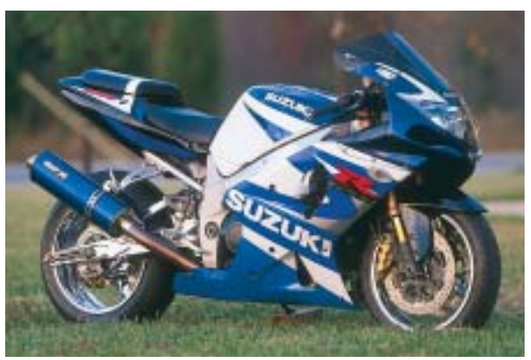
A customer's bike more powerful than the shop owner's machine? One difference was the new carbon airbox that Shierts is now marketing. The comparatively small stock airbox is jettisoned, and Shierts' piece basically form fits around the entire area underneath the fuel tank just above the throttle bodies, and uses a rubber seal against the tank to form the airbox "lid." "I used his bike to mold the new prototype, so I didn't have a chance to make a production unit for mine," explained Shierts. "It really doesn't do anything on top, but there are really big gains in the midrange—at least 10 to 13 horsepower."

What was even more impressive was riding the GSX-Rs on the street. Although both bikes were fitted with Coby Adams swingarms that allow length adjustability to 65-inch wheelbases for dragracing, Bidwell's bike was at near-stock wheelbase, so it handled practically like a stocker. And that allowed me to enjoy what was probably the most incredibly fun powerplant I've ever had the chance to play with on the street. Throttle response just off idle was a bit fluffy, but anything above 2500 rpm, and the GSX-R was as crisp as stock. And once the tach needle swung past 4000 rpm, there was so much power and torque available that you felt as if there was a supercharger attached to the motor. Smooth, linear, controllable power that made third gear, 100 mph wheelies just a roll-on away, transforming into a fearsome top-end rush that immediately made me wish there was a roadrace track nearby.

We immediately segued to the quarter-mile strip at Darlington Dragway in South Carolina the next morning to see what these bikes could do. As usual, scheduling and other logistical problems meant that I had a limited amount of time to sample all four bikes and try to get some decent runs out of them. The fact that each bike was a power monster with its own distinct personality made things that much tougher.



It was somewhat difficult switching from bike to bike during my dragstrip runs. Here Shierts gives me some tips to help out on the turbo 'Busa (right). Shierts' carbon-fiber airbox provides huge improvements to a highly-modified GSX-R1000's power curve, with at least 10–13 horsepower in the midrange (above).



Shierts even arranged for me to ride one of his customers' GSX-Rs to show that he sells what he races. There's no doubt that Joe Bidwell probably has the strongest GSX-R in all of Kansas; with 197 horsepower, his bike even bested Shierts' personal GSX-R.

After a few tries on Bidwell's GSX-R with the stock setup (not lowered, near-stock wheelbase), I realized that it would be practically impossible to get it anywhere near low nine-second times; the bike's short wheelbase and high center of gravity conspired to have the front end pointing out cloud formations at nearly anything over half-throttle in the first two gears, killing the first 60 feet of the run. With my best run way up in the 9.78 second range, Shierts took Bidwell's bike and lowered the suspension, while I acquainted myself with Shierts' own GSX-R.

It was interesting to note the slight difference in personalities between the two bikes, even though their modifications were identical—save for the carbon airbox on Bidwell's bike, which is what made his GSX-R feel just a tad snappier than Shierts' machine. Still, with the chassis lowered, and wheelbase lengthened a bit (but nowhere near the full 63-plus inch extension possible), Shierts' bike launched much better off

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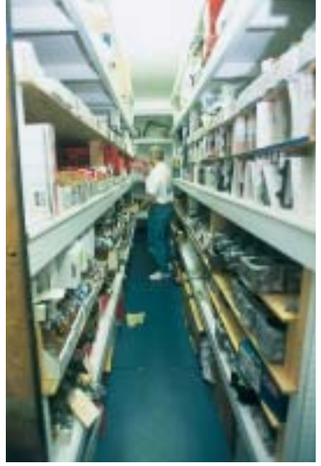

Shierts' new shop has a very well-stocked parts department (better than most dealerships we've seen) that ensures a quick turnaround when a customer brings his bike in for performance modifications. There's also a ton of bikes for sale on the expansive showroom floor.

the line. I immediately dropped my times down to low nines, with a best of 9.25 at 154.12 mph.

Then it was time to try Rich Yancy's turbo Hayabusa. Although Shierts has done most of the tuning on Yancy's bike, he didn't have a hand in its construction, and doesn't really deal with turbos that much. "They're extremely finicky, and take way more time and effort to get running right," he complained. This is most definitely not your average turbo 'Busa, however (well, if a turbo 'Busa could be called average). Yancy is the lead fabricator for Dale Earnhardt, Jr.'s NASCAR team, so his skills in creating and building custom components are pretty impressive. Yancy bought a Mr. Turbo kit, and then decided he wanted to improve upon its design for even more power; he basically ended up revamping nearly every component save for the turbo unit itself. The end result reflects Yancy's fabricating skills and attention to detail, with his 'Busa featuring numerous touches like a custom-built intake plenum sporting an air-to-water intercooler, custom wastegate, and a complete data acquisition system. Yancy also spent a lot of time cutting off as much weight as he could from the Suzuki, and was able to get his 'Busa down to 495 pounds fully fueled—65 pounds less than the stocker. Running a mild nine psi boost on stock engine components, Yancy's 272-horsepower 'Busa has been clocked at 212 mph during the East Coast Timing Association's Maxton top speed meets.

Yancy's bike has the stock swingarm, so although it was lowered a tad, the turbo 'Busa was still a handful to launch. But its mondo power and lighter weight paid off down the second half of the strip, as I was surprised to be able to run 9.45 seconds at 165.80 mph after three tries (Shierts subsequently was able to get it down to 9.28 seconds/164.86 mph). The top-end pull of this motorcycle has to be felt to be believed.

Shierts' drag Hayabusa launches ferociously off the line. With 370 horsepower and over 170 ft./lbs. of torque feeding through a lockup clutch, I was hoping to let this bike get me into the 8.5-second bracket (which Shierts has done easily). I'll be back for another shot at it.

I then jumped back on Bidwell's GSX-R after it had been lowered, and it was far easier to launch off the line. After about four runs, I was able to get my E.T. down to a somewhat more respectable 9.19 seconds at 155.54 mph. I'd hoped to be able to get back down into the eight-second bracket with either of the GSX-Rs, but I simply ran out of time, and it was a bit difficult switching back and forth between bikes during the few hours I had at the dragstrip (Again, Shierts' dragstrip experience enabled him to get the GSX-R into the eights with a 8.978 sec./154.74 mph pass).

I was sure about getting back into the eights, however, with Shierts' monster Hayabusa dragbike. This firebreathing beast's raucous roar rattles your teeth as you rev it at the start line, and with the near-1500cc motor (Shierts didn't want to divulge the actual displacement) spitting out 250 horsepower without nitrous—and 370 with—I was sure this land-based missile was going to be the ticket to my quickest quarter-mile run ever. I have to admit that I was a bit apprehensive after watching Shierts wrestle the big 'Busa down the strip for a couple of practice passes; the bike was churning the tire off the launch pad, making it seemingly want to head in every direction but straight.

One unique feature on Shierts' drag 'Busa is the MTC multi-stage "lockup" clutch. This unit utilizes weighted arms that progressively engage the clutch as the rpms rise (using centrifugal force); once you begin engagement manually, the lockup clutch takes over from there, and you let go of the clutch. Not only can the rate of engagement be adjusted, but the pressure of that engagement can be altered as well.

Unfortunately, as I made my first launch, the clutch plates decided to give up the ghost. And there wasn't enough time for me to stick around while Shierts replaced them. I was bummed, as my 60-foot time was my best ever; and then Shierts was able to run an 8.525 sec./169.65 mph blast after the clutch was fixed.

Although my time with Shierts' group of low-flying rocketships was cut short due to time considerations, I was able to at least sample some of their incredible performance. And I'll be returning in the future to get another crack at getting deep into the eight-second bracket aboard one of his creations. In the meantime, we're thinking of sending him a motor to build for the ultimate project GSX-R1000….

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