

A Gathering of Gammas

Sport Rider

spots a flock of
Suzuki RG500s at
Willow Springs



THE MID-'80S WAS CERTAINLY A HEADY ERA for dedicated sportbike fanatics—especially for those outside the United States. The two-stroke sportbike may have been dying a quick death in the States (due to ever-improving four-stroke performance and the tightening EPA chokehold), but it was flourishing everywhere else. Increased scrutiny of exhaust effluents had yet to make its presence felt in foreign markets, and enthusiasm for Grand Prix road racing was experiencing a meteoric rise. This led to the birth of some of sportbiking's most memorable machines—street-legal, production two-stroke GP replicas like the V-three Honda NS400R, the V-four Yamaha RZ500 and the square-four Suzuki RG500 Gamma.

by kent kunitsugu

photography by fran kuhn

The Gamma was arguably the most potent of the three. Sporting a disc-valve induction, 498cc, square-four powerplant (basically two parallel-twin 250s working in tandem) cranking out approximately 82 horsepower, the Suzuki also featured an all-aluminum chassis (a production rarity back then) and a weight of 406 pounds when topped off with fuel.

Soul-stirring performance was the obvious result, with a sharp, lithe feel no four-stroke could match. Since the RG500 was legally sold in Canada, stateside sportbike fanatics didn't want to feel locked out of the party, so quite a few of these bikes surreptitiously found their way south of the border.

During a visit to a local Willow Springs race, we found a group of Suzuki Gamma owners who had made contact with each other through the Internet and had scheduled a meeting/track ride. Willow's rather remote location and the owners' busy lifestyles prevented larger numbers from showing up, but those who made it presented a nice cross section of West Coast Gamma owners. Although the RG500's basic chassis package was state-of-the-art in 1985 (when it made its debut), sportbike technology has made incredible progress since then. Nearly all the Gammas present were modified in one way or another; many were retrofitted with newer suspension units and wider rims, which allow for the use of the latest performance rubber.

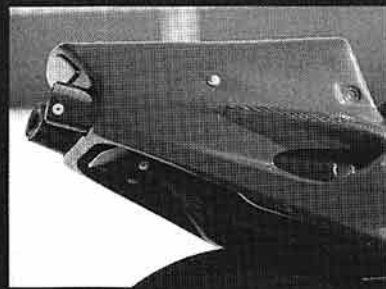
One Gamma in particular caught our eye. Its owner made the long trek to Willow from the unlikely haven (for curvy roads, at least) of Des Moines, Iowa. Randy Norian, like most Gamma owners, has been a two-stroke freak all his life. "I had an RD350 Yamaha in high school," recalls the electronic pre-press technician. "I always wanted an RZ350, but I couldn't afford one back then." When he got married, however, his prayers were answered when his wife, Anita, unveiled her wedding present to him: an RG500. (Geez, where can you find a woman like this?!) Like most sportbike owners, Norian couldn't leave the Gamma in stock form for very long. One thing led to another, and after a couple of years spent tinkering with nearly every com-

ponent on the bike Norian has an RG that quite literally lives up to its intended GP-racer persona.

Most of the Gammas we've seen have sported extensive trickery on the chassis and bodywork areas, but the powerplants have remained basically stock. Two-stroke performance tuning is a complicated art, and it's ridiculously easy to tune yourself backward with just a few ill-advised mods. Norian's RG, however, boasts one of the most tweaked square-four Gamma motors

on the planet. He proudly showed us his dyno sheets documenting a peak of 126.9 horsepower at 10,250 rpm, with a torque reading of 66.5 foot-pounds to boot. After taking his pride and joy for a few hot laps around Willow, we weren't doubting those numbers.

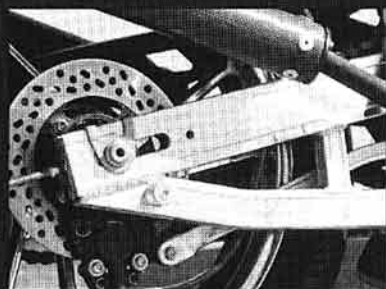
Determining whether a certain modification worked or not required a lot of dyno testing. Luckily, Struthers Kawasaki (a local Des Moines dealer) and Performance Diagnostics of Cedar



Utilizing a carbon tail section originally meant for a Honda CBR900, Norian was able to give a more modern look to his RG while still enveloping the twin rear-cylinder exhausts. Pipes were fabricated by Darcy's Race Pipes.



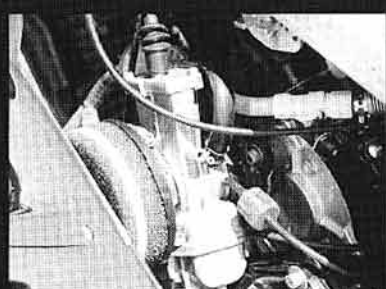
A Lindemann-revalved 1990 GSX-R fork graces the front end, with GSX-R calipers biting on EBC ProLite discs. The front wheel is a 3.5 x 17-inch Performance Machine unit, shod with the ubiquitous Dunlop D207 GP radial.



The stock Gamma swingarm was braced on the lower section using cut pieces of frame rail from a GSX-R. This bracing closely resembles the original extrusion pattern. The stock rear wheel was widened to 4.5 inches by Kosman Racing.



Removing the rear tail section reveals the reservoir for Norian's trick water-injection system. By injecting water into the exhaust and cooling the expelling gases, the system fools the pipe into thinking it's a different length, boosting midrange horsepower.



Four 34mm Mikuni TMX carbs (two per side) feed into the specially modified rotary-valve discs. Note the tight clearance between the carb mouth and bodywork, necessitating the use of foam air filters.



The front fairing was originally meant for a Kawasaki ZX-6R, but it fits up well. Norian was going to fill in the ram-air ducts, but he decided to leave them in to complete the happy-face look.

Rapids stepped in to help with their shop rear-wheel dynos. Norian's RG has logged approximately 40 runs on the way to its 126-horsepower form. "They were a huge help in getting things dialed," says Norian.

Diving headfirst into the motor, Norian started with a mild cylinder porting job, including widening the exhaust ports while raising them

But Norian wasn't finished. After reading about HRC's experiments with water injection on the NSR500 during the '96 GP season (injecting water vapor into the exhaust cools the expelled gases, slowing their velocity and changing the expansion-chamber timing for better midrange power), he did a little research and designed his own system for the Gamma. By actual-



The "most heavily modified Gamma" award would have to go to Randy Norian of Des Moines, Iowa. There aren't many stock pieces left on this RG that haven't been tweaked or fabricated, but after taking this 126-horsepower beast for a few laps around Willow it's obvious those mods paid off.

2mm. OEM 1mm oversize pistons were slipped in, with Southwest Motorsports reshaping the combustion chambers and reducing head volume to 10.5cc; compression ratio is rated at a somewhat high (for a two-stroke) 12.9:1. The rotary valve discs were ported to give an extra 15 degrees of duration, breathing through four 34mm Mikuni TMX carbs. The stock airbox was jettisoned in favor of individual foam air filters for easier breathing.

It was at this point that Norian's tuning efforts reached a temporary roadblock. "I tried five different sets of pipes, but no matter what I did the power output was stuck at around 110 horsepower," he recalls. Then, while cruising through the Internet, he came across a snowmobile tuning shop named Darcy's Race Pipes. After consulting with them regarding port timing specs, etc., the shop fabricated a computer-diagrammed set of pipes which resulted in an immediate 15 horsepower gain on top.

ing the water injection off of the engine rpm, he found the engine picked up 15 horsepower in the midrange! (Unfortunately, a small electrical glitch prevented us from using the water



An immaculate example of the average modified Gamma would be Barry Adam's '86 RG500. Besides the Wolf pipes, Adam also retrofitted a Honda CBR600F3 front rim and a CBR-F2 rear rim, to allow the use of the latest radial rubber.

injection during our quick ride on the bike.) Norian also designed an adjustable retardation feature into the ignition black box for improved power characteristics at all rpm.

This much horsepower is far above what the designers of the RG had originally intended, and Norian found he was shredding gears—especially third, a notorious weak point on the RG—with regularity. He sent the transmission over to Fast by Gast (a shop noted for their two-stroke dragracing aptitude) for a complete once-over and hasn't had a problem since. Never one to leave well enough alone, however, Norian has already installed a custom set of billet gears fabricated by GHN Racing in Germany as he continues his search for more horsepower.

At the time this article went to print, Norian informed us that he was in the process of grafting on a set of TZ250 Yamaha barrels (which feature much more aggressive porting than the stock RG cylinders could ever hope to achieve), utilizing different rods and pistons. Although Norian remains cautiously optimistic about the possibility of his RG achieving 140 horsepower, after seeing his handiwork and engineering acumen firsthand, we wouldn't bet against it.

The '80s-era suspension components on the Gamma weren't quite up to the task handling-wise. So Norian replaced

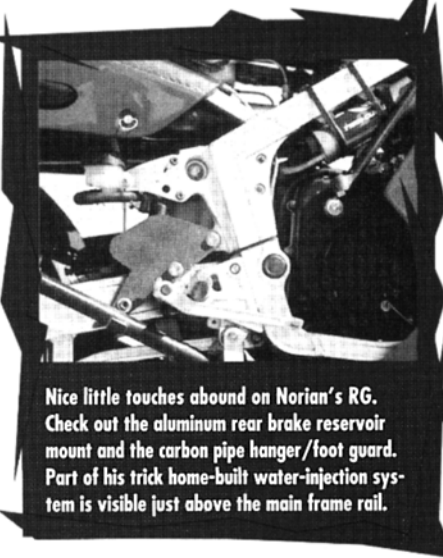
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the standard fork with a unit pirated from a '90 GSX-R, massaged by Lindemann Engineering. The stock rear unit was jettisoned in favor of a multiadjustable Fox Racing Twin-Clicker shock. The bracing on the stock swingarm was fashioned from an '86 GSX-R frame rail, which matches the external appearance of the stock swingarm extrusions perfectly. Braking duties are dealt with by a pair of four-piston GSX-R750 calipers biting on full-floating EBC Pro-Lite 310mm discs, utilizing Carbon Lorraine pads.

Like many RG owners who grow tired of the original, squarish-looking bodywork, Norian decided to update his Gamma's styling. After a bit of searching, he settled upon a Sharkskin fiberglass front fairing and lower originally intended for



Norian fabricated his own dash from carbon fiber, using the stock Suzuki tachometer and idiot lights. A digital temp gauge is visible just below the tach, with a bicycle-type speedometer (using a magnetic pickup on the front wheel) on the right. The dash knob allows manual variation of the exhaust valve actuation point.



Nice little touches abound on Norian's RG. Check out the aluminum rear brake reservoir mount and the carbon pipe hanger/foot guard. Part of his trick home-built water-injection system is visible just above the main frame rail.

a Kawasaki ZX-6R. The rear subframe was slightly modified to accept a carbon-fiber tail section from a CBR900 which is wide enough to envelop both rear exhausts. Both pieces flow together well, giving Norian's RG a much more aggressive look to match its magnified performance.

And what a performer it is. Norian graciously let us take a few laps on his pride and joy during the open practice day at Willow, and we quickly settled into the 1:30 range in only a handful of laps. When you have nearly 130 horsepower propelling only 375 pounds in a short, tight chassis, minimal effort is

necessary to get around the track quickly. The suspension updates thankfully allow Norian's RG to keep pace with the increased power, with no weird handling quirks surfacing even under the strain of Willow's daunting turn eight. Our previous track experience with stock Gammas revealed a distinctly nervous handling front end and inadequate rear suspension performance, but Norian's RG displayed none of those traits. Further adjustments to suspension and chassis would have surely yielded another two seconds but we weren't about to push things and subject Norian to extended periods of high blood pressure, especially with other riders weaving about the track.

For those of us weaned on buzzy two-strokes in our formative riding years, it was fantastic to once again experience the familiar smell and sound of the ring-dingers. The days of the production two-stroke sportbike may have faded into memories but thanks to Randy Norian and other cult followers of bikes like the RG500 Gamma, many of those machines are still alive and well. And in light of the FIM's decision to force 500 GP racing back to four-strokes (see "Wheel Spin" page 5), it becomes doubly important that we keep the spirit of two-strokes alive. Incidentally, there will be another meeting of Gamma enthusiasts, this time at Grattan Raceway in Michigan in July. Those who are interested can contact Norian at scanran@aol.com. **SR**



The previous incarnation



Hmmm... borrowed from my ZX6R



Engine exposed, water fittings



I'm trying to weld up Darcy Pipes



mid-project



She bought it!!



Finished!