

CYCLE ROAD TEST

KAWASAKI 238 GREEN STREAK SCRAMBLER

Backed to the hilt by a company that really wants to win, the Green Streak offers all things to all scramblers: power, handling, and even more power—if you want it.

KAWASAKI 238 *Continued*



What it is is a full-house scrambler, pure and simple. It doesn't have lights and it doesn't have a horn and it doesn't have side reflectors and it doesn't have a muffler. Number plates come with the bike, already bolted on. It's a racer uncompromised. And it is, after a very short period of development time, one of the very best racers around.

They call it the Green Streak in all the advertisements and press releases, because of its peculiar lime-green gas tank. The name fits. It's also a streak—but curiously well-mannered.

You've been to a scrambles meet, right? And you must have been taken by the peculiar starting ritual common to nearly every racer. It goes something like this: run along beside the bike, jump on after attaining the necessary forward velocity, let out the clutch, come to a stop. Repeat. Repeat again. Get a friend to help push. And then whip out the plug wrench, because by this time the spark plug is hopelessly fouled.

Meanwhile the rest of the racers in that heat are on the line, busily revving away at their engines to keep *their* plugs from fouling. Occasionally one will take a lap to cool off the engine.

And this other competitor is still pushing. The bike, with its new plug, fires sporadically. The rider hops off and circulates in these mad little loops with the bike all leaned over to one side (this last to clear out the float bowl). Finally he's ready. Ready to *quit* is what he's ready for, because he's mad, which will pass, and he's exhausted, which won't.

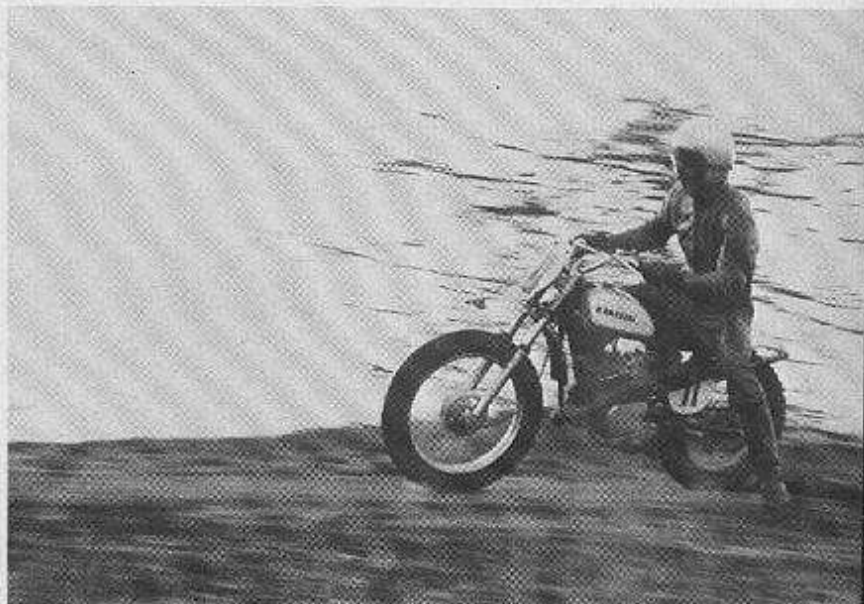
When we picked up the Kawasaki 238 Green Streak scrambler we were assured by the racing department of that well-respected organization that, yes, the kickstarter was functional and yes, the bike could be brought to life quite easily with that device. Not so, we said. Surely you jest, we said. We know about the Ritual, we said. All right, they said, find out for yourselves.

And we did. The Streak never once, in the course of two full weeks of testing, failed to start on the first or second kick. And equally unbelievably, it never failed to settle down to a nice comfortable idle. How many scramblers are there that actually know how to idle? Precious damn few, we'll wager. If any beside the Streak idle, we aren't aware of them.

There's a reason, of course. Scrambling is a sport which makes inordinant demands on stamina and physical conditioning. The people at Kawasaki knew this when they laid out the first Green Streak. They also knew that push-starting a knobby-tired motorcycle down one hill and up another was just as fatiguing as the race itself, and in all their progressive Oriental wisdom saw fit to do something about it. They only made one mistake with this kickstarter thing: the kickstarter lever itself is not secured adequately. It tends to flop around

beside the bike during the course of a race, making things difficult for the rider's brake foot. We asked a member of Kawasaki's racing department about this: do the racers use the lever for starting and then remove it just prior to the heat? No, they don't. They anchor it in place with a length of innertube. Rest assured, though, that this problem will be taken care of on subsequent models.

All right, so the Kawasaki starts: how does it run? Very well. Its engine, like every other two-stroke Kawasaki in the world, is equipped with a rotary valve intake system, the benefits of which are well-known: since with a rotary valve intake timing is independent of exhaust timing, more fuel/air mix can be crammed into the combustion chamber—which means more power. Or, if you prefer, the rotary valve can be adjusted to give a broader torque curve.



But there are drawbacks. The carburetor must be located hard by the rotary valve, which means the crankcase is effectively wider; and air must be ducted from a remote air cleaner, since to run a scrambler without an air cleaner is suicidal and to locate the air cleaner close by the carburetor would widen the crankcases to such an extent that cornering would be out of the question.

And the problem, in the case of the Green Streak, is similar to the problem experienced with the Kawasaki Avenger hop-up project: the engine runs out of air. During the test we drag-raced the 238 against a similarly-configured full-house scrambler, and the 238 lost decisively. Its engine simply wouldn't rev tight enough.

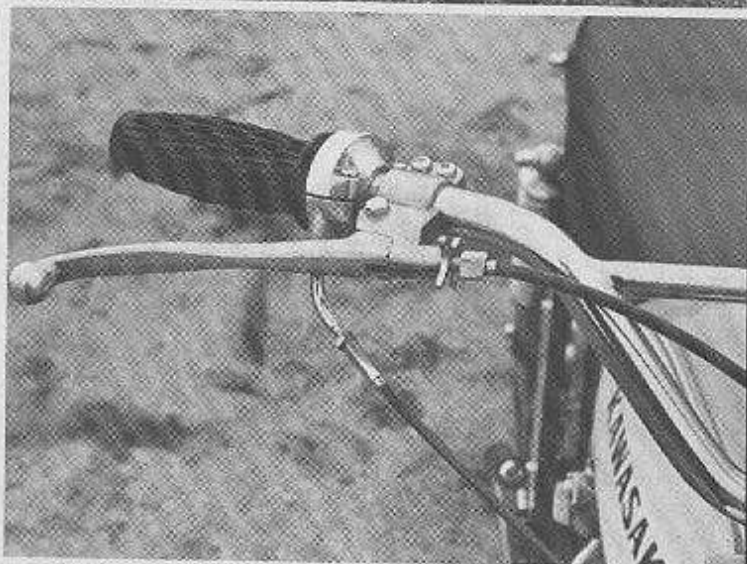
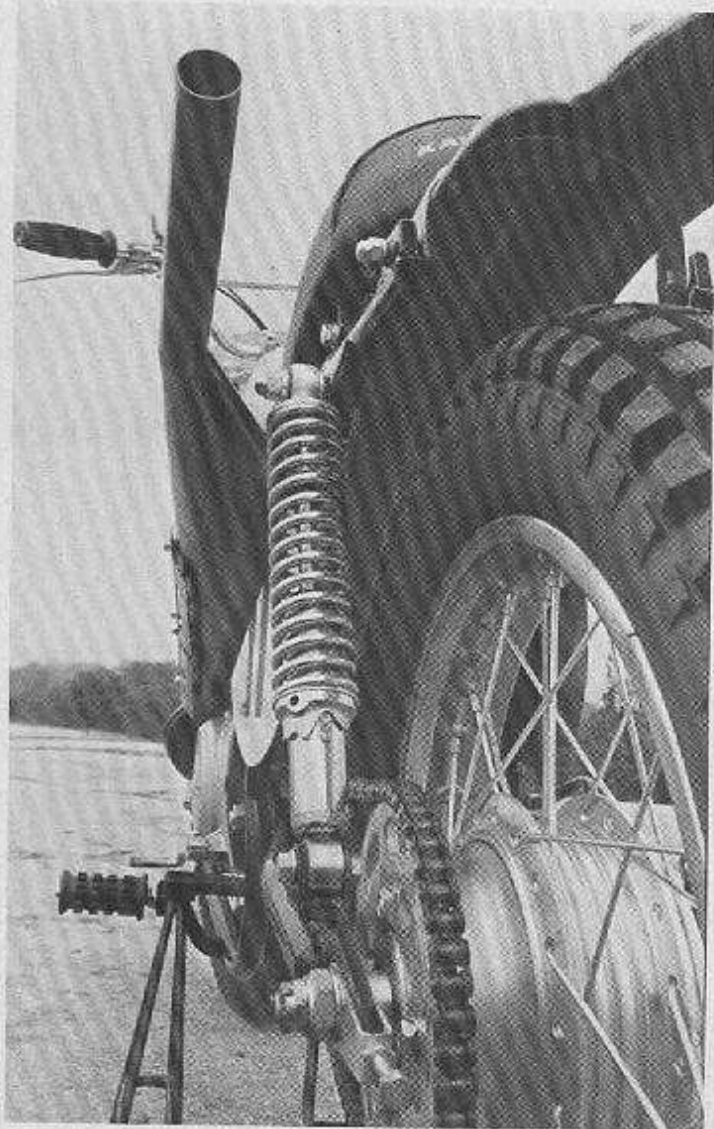
The solution on the 350cc Avenger, you may recall (*Cycle*, November), entailed pulling the rubber carburetor covers away from the crankcases, permitting a greater flow of air through the intake system. The same solution would work on the Green Streak—provided the owner didn't mind

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taking a chance on filling the engine with grit. Fortunately there are other solutions, one of which is to replace the 1.02" (VM-26SC) Mikuni carburetor with a 32mm. Amal Concentric and install a Typhoon breather in the carburetor cover. This breather is equipped with a fine, fuzzy filter element that provides both an adequate increase in air flow and a modicum of filtration. The carburetor, unfortunately, does not bolt right on. A flange plate has to be fabricated for it. But what racer, what *devout* racer, ever shied away from a little machining?

In addition to this carburetor change, Kawasaki tells us that even more performance is available if the rotary valve is shaved a little. Ten degrees in opening and twelve degrees closing (in other words the valve is modified to open ten degrees sooner and close twelve degrees later) seems to be the ticket.

Aside from these alterations (and an additional change related to expansion chamber configuration) the Green Streak is ready to fly right out of the crate. Few, if any, modifications are needed in the hand-





ling department. Front forks (telescopic, of course) provide more than ample travel—somewhere in excess of 7"; and the rear units are adjustable and, we found, more than adequate. (Apparently Kawasaki's standards are somewhat tougher than ours. The Green Streak Racing Team bikes were equipped with Maverick rear shocks for the North-South scrambles, which they won, incidentally, and then were exchanged for Telesco units just prior to Pepperell.)

The 238's chassis fulfills the most important prerequisites for good performance in rough going. It's of the full double-cradle type, two tubular loops emanating from the steering head running beneath the engine's crankcases and curving up behind the transmission and back to the steering head. Braces joining the two loops are welded in in front of, beneath, and behind the engine, and the steering head (known also as the nose of the frame) itself is positively located by heavy gusseting. Gusseting also supports the swing-arm pivot and the struts attached to the chassis' upper section serving as mounting points for the seat and the shock absorbers. It's a chassis that's rigid—very important—and also very light.

Steering head inclination (rake) is set at 45 degrees—a bit much for flattracking, say—but ideal for high-speed scrambling. And trail measures 4.26 inches. Trail, by the way, is determined by measuring the distance between the tire's contact patch and a line intersecting the surface of the ground drawn through the center of the steering head. Trail, in conjunction with rake, determines the self-aligning ability of the front wheel.

The Kawasaki had plenty, under most circumstances. The only area in which the 238 felt a little unsure of itself was in the sand pit. Now sand does strange things to steering geometry: since it's soft, the front wheel sinks into it. And in sinking the tire's contact patch moves forward, thus reducing trail, and reducing the tire's self-aligning tendency. So it wanders, and tends to "fold under" if turned too far too fast. It happened to the Green Streak, though

not so severely as to the other scrambler that was on the scene. But any steering arrangement is a compromise of sorts, and what indignities the Kawasaki suffered at the hands of the sand pit it more than compensated on firm, dry ground—where, incidentally, it was designed to be (leave the sand to the desert rats).

It's a forgiving handler, the Green Streak is, forgiving in the sense that the wild-eyed sweaty-palmed novice can get himself into all manner of difficulty without paying the price that your average W-E'd S-P'd beginner must pay. And herein lies an aspect of more than passing significance. As it comes from Kawasaki, without the alterations previously mentioned (to the rear shocks, intake system, etc.), it does its job superbly. It's tractable, the engine gives the impression that it'll never hurt itself, the bike is easy to adjust to and inordinately comfortable to ride for long periods of time. And it's beautifully balanced, with as low a center of gravity as is possible with 9 inches of ground clearance. The perfect beginner's scrambler, a motorcycle which will more than hold up its end of the deal, freeing the rider's concentration

(Continued on page 78)



KAWASAKI F21M 238cc SCRAMBLER

Price, suggested retail East Coast, POE \$865	Compression ratio 7.7:1
Tire, front 2.75 in. x 21 in.	Carburetion 26mm, Mikuni
rear 4.00 in. x 18 in.	Air filtration Oil-saturated fiber
Brakes, front 5.2 in. x 1 5/32 in.	Ignition Magneto and coil
rear 5.8 in. x 1 3/32 in.	Bhp @ rpm 28 @ 7000 rpm
Brake swept area 37.06 sq. in.	Fuel capacity 1.9 gal.
Specific brake loading . . 10.7 lb/sq. in.	Oil capacity 2 pt.
Engine type Two-Stroke rotary valve single	Gear ratios, overall . (1) 33.3 (2) 20.3 (3) 15.0 (4) 11.3
Bore and stroke . . . 2.76 in. x 2.44 in., 70mm x 62mm	Wheelbase 50.2 in.
Piston displacement . . . 14.52 cu. in., 238cc	Ground clearance 9 in.
	Curb weight 220 lb.
	Test weight 395 lb.
	Instruments None



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for more important matters—like learning how to ride.

Used to be the people who took scrambling seriously didn't pay much attention to braking. But that's all different now; probably due to the invasion last year of Europe's finest motocross riders (who used the—God Forbid—front brake, and used it hard), a scrambler's stopping ability is becoming a consideration of more and more importance. We leaned on the Green Streak's brakes awfully hard during the test, racing for periods of half-hours and hours, gunning through sand and water every lap. The brakes never changed. They never faded, they never got hot and grabby, they never lost their nice soft progressive feel. The front brake was adjusted so that it wouldn't lock up, and we felt after the test that the Green Streak probably wouldn't ever need a compression release.

Clutch and transmission are in keeping with the generally excellent quality of the bike. The clutch is similar to that on Kawasaki's F2 and F3 (175cc) with the exception of the number of clutch plates. The Streak's clutch boasts 5 friction discs and 4 clutch plates (one more friction disc than the F2) to handle the increased torque. All clutch parts, interestingly, are interchangeable with those of the F2, which means lower cost for the company and lower cost for the buyer, if nothing else.

The transmission (again, interchangeable with that in the F2) functioned faultlessly whether shifting was done in conjunction with the clutch or not. The only thing we weren't wild about was the fact that neutral is "all the way down." Such an arrangement is perfectly satisfactory for the street, but we found ourselves, in the heat of competition (what little heat we could muster), skipping past first and hitting neutral every time we downshifted. But then again we're sloppy—good chance it wouldn't happen with a real live racer at the helm.

As we mentioned earlier, there is one additional modification recommended by the factory: the fabrication of a downswept exhaust pipe. Seemingly for no other reason save keeping the rider's left leg from parboiling, the down-pipe is slightly different dimensionally from the high-pipe. To make the alteration: obtain a 2" pipe 15" long, curved to a six-inch radius, and weld it to the front of the expansion chamber. Stinger dimensions should be changed to 12" long with an inside diameter of 21mm. That's all there is to it.

The Kawasaki factory, needless to say, is interested in winning a lot of races with the new Green Streak, and the factory personnel are more than willing to help—both the high-powered expert-class racers and the wet-behind-the-twist grip beginners. The factory will supply complete modification specs to anyone who asks for them. That's the way to go racing, all right. And the Kawasaki Green Streak looks to be the way to win.

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