SUZUKI PE250 EN

DURO

Undress Suzuki's first "real" enduro and you'll find an RM motocrosser—which helps explain why it goes fast and handles well.

"Suzuki conquers boredom," was one of that company's advertising slogans in years past, but if the bikes offered by Suzuki at that time were any indication, boredom easily could have been something the firm *invented*.

Suzukis of that era were built as solidly as the Rock of Gibraltar and, unfortunately, were just about as stylish and exciting. True, *nobody* made more reliable two-wheelers than Suzuki, but the company always seemed to let its policy of everlasting dependability determine the personality of its machines, rather than leave that task to the stylists or at least the engine designers.

Consequently, Suzuki motorcycles came across as mundane vehicles so pedestrian in appearance and personality most red-blooded Americans passed them up in favor of more charismatic machines. On one of the rare occasions Suzuki's engineers *did* try to make an "exciting" model—the original TS400 Apache dual-purpose street/trail bike—they programmed all of the excitement into the engine and apparently forgot all about the chassis, for they ended up with one of the most infamous, unforgettable ill-handlers of all time. Only the fast and furious X-6 Hustler of the middle sixties marred Suzuki's perfect reputation for building ho-hum motorcycles.

That's all been changed now. It took a while, but Suzuki finally realized what others had long perceived as the obvious—that in the image-conscious, performance-oriented United States, stone-ax reliability alone is not enough to put you anywhere near the top of the sales heap. So Suzuki motorcycles have a new image—one of spirited performance, contemporary styling, state-of-the-art innovation and, at long last, some much-needed excitement. And they haven't had to sacrifice their traditional reliability in the bargain.

The personality transplant began over two years ago with the screaming yellow RM motocrossers. Those works-looking berm-eaters rewrote Suzuki's own record books while devastating the competition on the country's racetracks. Their performance precedent has been carried through all of Suzuki's new four-stroke street bikes, which instantly became the power and handling standards in their respective classes. And somewhere, almost lost between the flash of street iron and the roosts of the motocrossers, came the PE250, Suzuki's first venture into *real* enduro motorcycling.

The PE250 is not and never was "all-new," since it is basically just a detuned, added-on-to version of the RM250. But it *is* new to endurodom. While the PE obviously cannot match the motocrosser for doling out buckets of adrenaline-spurting performance, it is an exciting motorcycle in its own right.

THE BIKE: The PE250 is essentially an RM250B motocross frame and swingarm being dragged around by a modified RM250B two-stroke engine. The suspension is shorter, the gear ratios are different, the porting is milder and there is more flywheel weight hung on the crankshaft. And, of course, the PE has a lighting system, a speedometer, a bigger gas tank and a few other items befitting proper trail and enduro riding.

The engine is Suzuki's new long-stroke 250 single introduced last year on the "B"-model RM250. The cylinder bore is just 67mm, three to five millimeters smaller than the bores of most other 250s, but the stroke is 70mm, six to ten millimeters *longer* than normal. This engine design is a by-product of the quest for broader, more tractable powerbands on world championship motocross machinery, so it is a "natural" for an enduro bike engine.

The PE retains the MX model's "case-reed" intake system, along with its same basic porting layout. The Enduro, however, has milder porting all around, plus a lower compression ratio, both of which help give a softer power delivery. A 36mm Mikuni carburetor gets the right mix of combustibles into the engine and a through-the-frame expansion chamber routes the exhaust gases to the rear. The chamber is dimensionally the same as the RM's, but with greater internal silencing and a larger muffler/spark arrestor on the end.

The PE uses an external-flywheel magneto CDI that not only provides more crankshaft inertia for smoother enduro operation than the RM's little internal-rotor unit, but also makes the task of generating sufficient AC lighting current much more simple with its larger, faster-turning flywheel magnets. The external flywheel also provides more consistent spark at super-low rpm. The small magneto cover on the left side of the engine is 10mm deeper to accept the larger flywheel.

The PE delivers its power through the same straight-cut primary gears and wet clutch found in the RM, but the Enduro has a wider-ratio five-speed gearbox that allows the engine to better handle the broad range of riding conditions encountered off-road. The PE incorporates primary (in-gear) kickstarting, which is a handy feature for those times you stall the engine on a slope and find it difficult to locate neutral.

The PE's frame is virtually identical to the RM's, as is the swingarm. The front fork, though, is somewhat shorter and offers 7.5 inches of travel—0.9 inches less than does an RM. The Kayaba gas-charged rear shocks do not have remote reservoirs as the motocrossers do, and the travel at the rear axle is 7.4 inches, 1.2 inches less than what the RM offers.

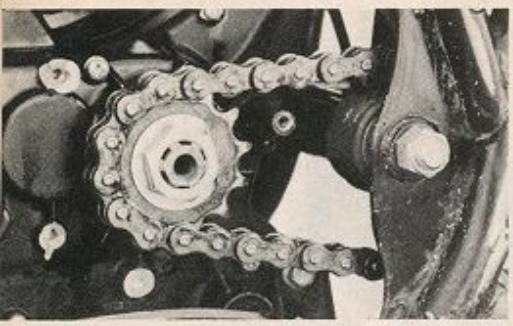
The steering geometry (30-degree steering head angle, 4.96 inches of trail) is the same on both bikes and the wheelbase *should* be identical. But because of the shorter front fork, the PE's wheelbase is about .2 inch shorter than the RM's.

The main reason for giving the PE less wheel travel is simple: enduro riding generally places less demand on the suspensions than motocross, but requires a higher degree of agility and quick maneuverability—both of which can suffer proportionately as the center of gravity goes up. Too, an inordinately tall bike is hard to remount after a fall on a hill and is hard to deal with when trying to foot or paddle on a slow, grueling trail. The PE's seat was also made thinner to further accommodate riders in these situations.

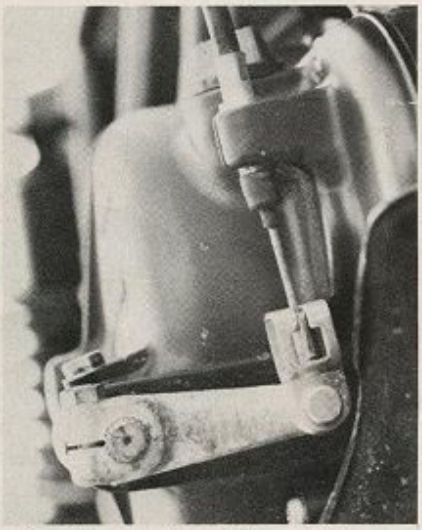
The PE is outfitted with most of the regulation enduro necessities, like a big, 3.2-gallon aluminum gas tank, a speedometer incorporating a tripmeter resettable in either direction by tenths of a mile, a grilled headlight, a tiny rubber-mounted taillight, a front number plate, a steel skid plate, and an IRC 4.50 x 18 rear knobby with a sidewall design that will permit reasonably-normal operation should the tire go flat—always a nice feature on any bike that could leave you out in the middle of nowhere with an airless tire.

All those enduro niceties confront you with a couple of items which are conspicuous by their absence—namely, a tool bag or tool compartment and a suitable drive chain guide. There *is* an RM-style chain tensioner mounted just ahead of the rear

PHOTOGRAPHY: ART FRIEDMAN AND JEFF KARP

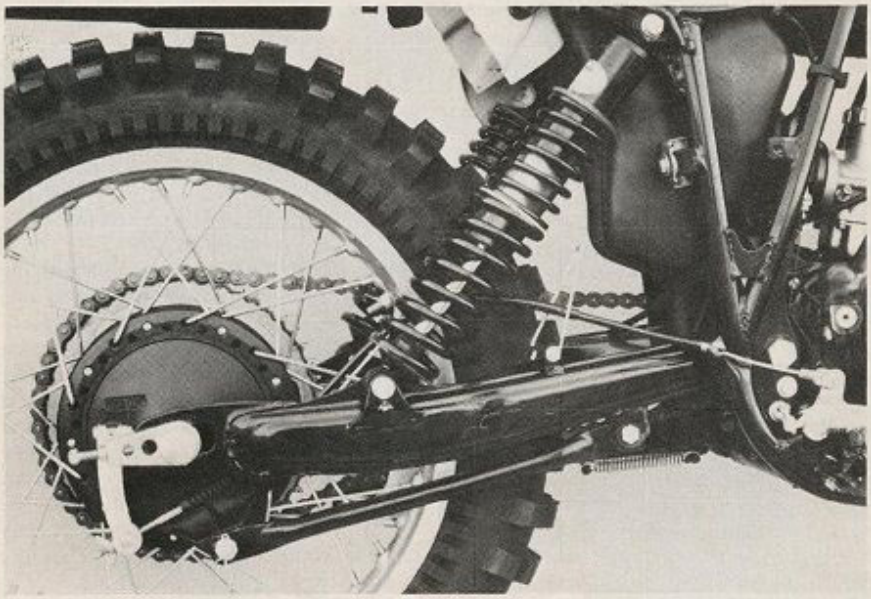


Despite having a so-called "guard" on the sprocket cover, two screw bosses on the engine cases were snapped off (left) and the cover and guard broken (right) when the chain came off.



A rock's-eye view of the clutch actuating arm, which is highly vulnerable because of its location and the lack of protection offered by the skidplate.

Except for a mild shortage of flywheel inertia, the converted RM motocross engine is next to flawless for enduro riding.



The Kayaba shocks perform typically for that brand of gas-charged suspension unit. They love rolling, rounded bumps of all kinds but don't get along with the more abrupt, sharp obstacles.

sprocket, but it is incapable of preventing chain derailment when a rock or a branch pokes at the No. 520 chain.

Actually, there are a number of items on the PE which indicate a lack of proper attention to detail or hint that the designers perhaps were operating within the confines of a limited budget and spent most of those monies on the development of the big pieces—the engine, suspension, etc. In either case, these flaws detract from an otherwise well-thought-out machine.

The whole headlight/speedo/front number plate mounting arrangement is a good example of this inattention to detail. Besides being more awkward, bulky and complicated than it has to be, the mount has the headlight poking way out in front of the fork tubes, making it ungainly in appearance and especially vulnerable to crash damage. The speedometer is also mounted further forward than necessary and about one inch off-center to the left. And the hard, sharp-edged, plastic number plate is the tallest thing on the entire motorcycle, sticking way up in the air where a rider easily could bash his face into it. Suzuki isn't the first company ever to build an enduro bike and be faced with the problem of mounting all these pieces, but they've come up with one of the poorest solutions we've seen.

At 235 pounds with an empty fuel tank, the bright yellow PE250 Enduro is not too heavy to be competitive on the trails; and priced at $1450, it's not a giveaway, but still not too expensive to be competitive in the showroom.

ENGINE AND GEARBOX: The PE250 has terrific engine performance and a powerband which spans the entire rpm range. The power curve is relatively flat from one end to the other and the engine is not the least bit peaky. Only a slight shortage of flywheel in certain conditions detracts from the engine's excellent performance.

When we first fired up the PE and tweaked the throttle open, the engine's quick-revving nature immediately led us to believe that a serious flywheel deficiency was present and that the bike would be terrible in any low-rpm lugging situations—especially since the first gear ratio isn't exceptionally low. We buzzed right over to one of our favorite uphill climbs, a slow, steep, cobby, narrow trail that serpentines up out of a deep canyon and is usually sufficient to separate the real enduro bikes from the pansies. Much to our surprise, the PE groaned up the hill as easily and steadily as any enduro machine we've ever put to that test.

Subsequent attempts at other hills were equally successful, although we did learn that the bike's ultra-low-speed climbing prowess is best utilized if you do *not* let off the throttle to correct your line. The flywheel inertia is not sufficient to keep the crankshaft turning and the engine will stall. As long as you keep the throttle open,

the PE growls up slow, steep hills impressively.

On open ground, the engine reveals the flip side of its personality. The undersquare power plant churns out an above-average amount of horsepower for a 250 enduro, but never startles you with sudden onrushes of brute torque or acceleration because the power curve is so wide. The net effect is a bike that performs with great spirit. Its eagerness to hurry down fast fireroads makes you think maybe there is more than just a trace of the RM lurking in the engine, while twistier up-and-down trails also seem to pass under the PE without any special manipulation of rpm.

The engine is nicely predictable on slick or muddy terrain, seldom creating any unexpected wheelspin. But here, too, is an area in which more flywheel would further refine the PE's rideability. A bit of additional crankshaft inertia would improve noticeably the already-good tractability in mud, on slick trails, in tight areas and over trials-like obstacles—not that the bike doesn't adequately handle all that right now.

The gear ratios are widely-spaced, with their intervals as evenly-staged as practical for a five-speed which must go as fast *and* as slow as an enduro bike must. The first-to-second jump is the only one which is almost too wide under some circumstances, but it never gave us any problems because of the engine's wide powerband.

Missed shifts are a rarity on the PE, and if they do occur they're usually caused by a malfunction of the nut behind the handlebars. Suzukis of late have been the slickest-shifting bikes ever, and the PE does nothing to harm that newly-acquired reputation.

The clutch is more sudden in its engagement than ideal for an enduro machine, and that trait is made more significant by the aforementioned flywheel shortage. As Japanese-built clutches go, the PE's is above average. As European clutches go, the PE's is a toggle switch. The best qualities of the Suzuki's clutch are the light squeeze required to disengage it and the lack of drag that makes finding neutral easy.

HANDLING: We were totally impressed by the PE's ability to handle nimbly and with stability on top-gear fireroads, fast trails, twisty woods sections, trials-like trails and on all types of terrain. In fact, our only worthwhile criticism of the handling is the lack of ground clearance.

The PE's center of gravity is slightly lower than that of an RM250 because of the shorter suspension; yet it is not lower by an amount equal to the difference in suspension because the lights, speedometer, bigger gas tank and heavier muffler all help to raise it back up. Still, the PE shows little reluctance to being leaned over and tossed around corners like the short-travel bikes of several years ago. It bends around

sharp, full-lock turns quickly, easily and without a feeling of top-heaviness, just as it also can be flicked quickly from side to side while maneuvering through a patch of closely-spaced trees or a boulder-strewn dry creek bed.

Much of the maneuverability is a blessing bestowed by the steering, which remains precise and predictable from crawling speeds right up to 80-mph charges on open fireroads. With rare exception, the front of the bike goes *where* you point it *when* you point it. The steering is pretty much neutral at moderate cornering rates, gradually evolving into an occasional mild, controllable oversteer (the rear end hangs out a little) when pushed hard through a turn at medium and high speeds.

An important point in the PE's favor is its willingness to hold a given line while climbing a tough hill, yet to change lines easily if and when its rider needs to. The Suzuki also steers well and feels stable descending rough hills, and allows the rider to change lines even more freely than when going uphill.

The front fork worked beautifully on our test bike, handling the big bumps and little ripples with equal deftness. Every once in a while we'd thrash into an unseen big bump or rut and the fork would give the rider a sharp jarring and maybe even bottom out audibly, but the front suspension on any other enduro machine probably would have reacted the same way. Fast desert racers or ISDT-grade enduro riders may find some noteworthy fault with the front fork but we didn't, and we suspect most other riders won't, either.

The rear shocks perform almost as well as the fork except on sharp, abrupt bumps. Trail hazards of that sort tend to bounce the rear wheel off the ground, taking with it, of course, the seat, which lets you know what's happening by tenderly tapping your fanny if you are standing up. If you're sitting and pass quickly over one of these harsh bumps, you might get bounced up off the seat if the obstacle is big enough. At the very least you get a solid thump in the posterior.

On the more gradual, rolling bumps and most other enduro terrain, the Kayabas are

up to the task and keep the rear wheel planted on the ground effectively. Overall, the suspension is very good and both ends work in unison until one of those sharp holes or ridges comes along.

As we've already stated, the PE derives much of its trail congeniality from having a center of gravity that isn't ridiculously high. And that condition was arrived at by retaining the motocross frame and shortening the suspension and its travel. That sounds okay, except that a bike meant for trail and enduro riding—because of the size and nature of the obstacles an enduro machine may have to climb over—needs more ground clearance than a motocrosser.

The PE250 has about as much or maybe even a little *less* ground clearance than some motocrossers, and about as much as the best short-travel enduro bikes of previous years. But it has *more* suspension travel than those earlier enduros and it is sprung more softly. As a result, the footpegs, the skidplate and the rider's feet are continually banging into things, like big rocks, little boulders and even the ground itself. On one particularly hard, rocky, 30-mile loop in the mountains, one of our testers had the toes of his right foot bent almost under the footpeg once when the chassis bottomed out while he was braking on some bumps and his boot caught a small, but firmly-implanted rock. The toes of his left foot *twice* were bent under the footpeg when a rock caught them as he was putting his boot under the shift lever in preparation for an upshift. And he twice rapped his left foot on slightly larger rocks, once hard enough to cause him to think he had broken something in the foot.

Granted, raising the engine and the under-engine frame tubes would be necessary to get more clearance, and doing so also would raise the center of gravity, but in this instance it could prove to be a fair trade-off. In addition to the hazards the low clearance poses to the rider's feet, the bike often hangs up when being heaved over logs, fallen trees, big rocks and the like. The PE's exceptionally nimble behavior during fast cornering would be diminished by a few percentage points but, in our opinion, it would be a worthy exchange for riders who regularly face such trail obstacles.

COMFORT AND RIDE: The PE250 is a friendly motorcycle that does little to unduly tire its operator.

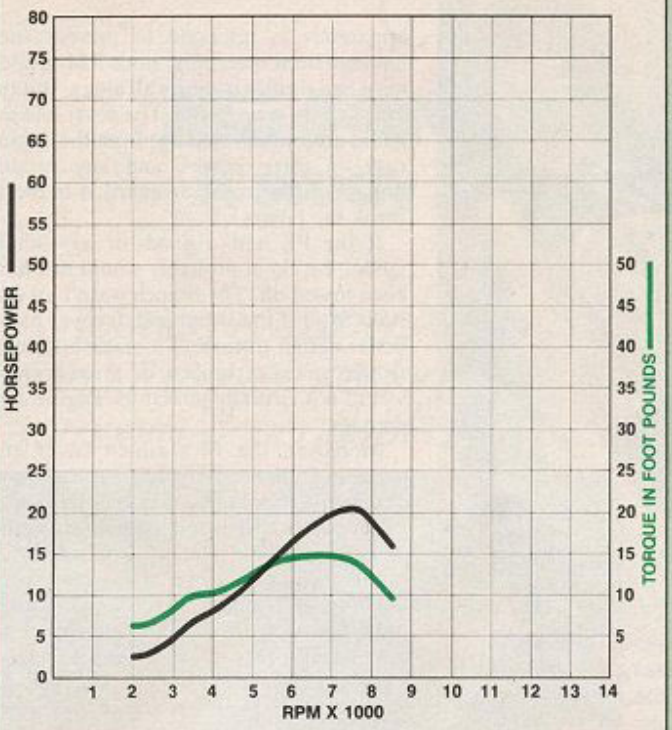
The riding positions, both sitting and standing, are excellent. When seated, the rider doesn't have to grope for or adapt to the handlebars or controls, nor do his knees have to bend at any sharp angles to get his feet on the pegs. When standing, he doesn't have to hunch over much at all, so his back doesn't get tired so quickly.

The front suspension superbly cushions the wrists and forearms from most of the abuse hurled at the front wheel, although the rear end transfers a few of the jolts from sharp bumps into the chassis. From there, the thinned-out version of the RM seat dampens out most of the remaining hostility, and a few of the stronger tremors ultimately reach the rider's butt. The seat is more comfortable than its low profile suggests—mainly because it is reasonably wide in the front—but there are a number of better enduro saddles around.

The Suzuki vibrates from time to time and at certain rpm, but the nature of the vibes and the rpm at which the bike is generally ridden combine so the vibration usually is only present for a second or two and is of such a low frequency as not to have any adverse effects on the rider. Noise won't be a problem, either. The needle on our General Radio sound level meter only managed to swing to 88.2 decibels during our sound testing.

The PE isn't fat in the area directly above the footpegs, which means the rider doesn't have to stand bow-legged and easily can flip the bike from side to side while on the pegs and maneuvering through the rough. The side number plates have the traditional "RM bulges," though, and their presence is something you soon learn to deal with. Actually, some of our riders have gotten to the point where they sometimes use the bulges to their advantage—like when standing up and accelerating hard. They pinch their legs inward and let the bulges behind their boots help prop

SUZUKI PE250 ENDURO SPECIFICATIONS



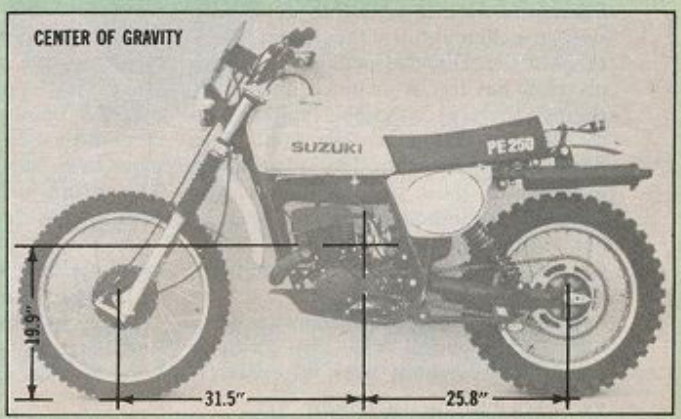
RPM	HORSEPOWER	TORQUE	RPM	HORSEPOWER	TORQUE
2000	2.4	6.4	5500	14.7	14.0
2500	3.3	7.0	6000	16.7	14.6
3000	4.7	8.3	6500	18.4	14.9
3500	6.8	10.1	7000	19.8	14.9
4000	8.0	10.4	7500	20.4	14.3
4500	10.0	11.7	8000	18.7	12.3
5000	12.0	12.6	8500	15.7	9.7

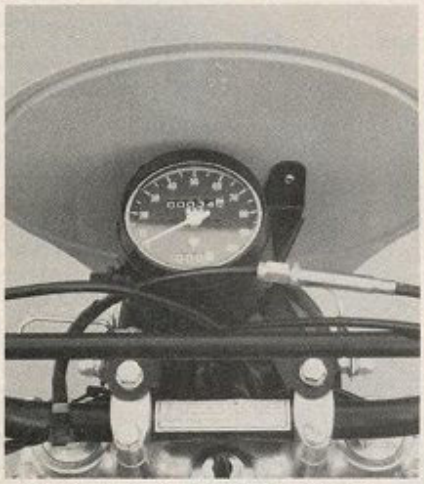
This chart shows engine horsepower and torque calculated from figures taken at the rear wheel and does not account for transmission losses between the engine and rear wheel. These results may differ from manufacturer's claims or from results obtained using a different dynamometer.

Engine type	two-stroke
Cylinder arrangement	vertical single
Port arrangement	one bridged intake, six transfers, one bridged exhaust
Bore and stroke	67mm x 70mm
Displacement	247cc
Compression ratio (corrected)	7:1
Ignition	magneto flywheel CDI
Charging system	none, direct AC lighting
Carburetion	one 36mm Mikuni slide/needle
Air filter	washable oiled foam element
Lubrication	pre-mixed fuel and oil
Primary drive	straight-cut gears, 2.73:1 ratio
Clutch	wet, 5 drive plates, 6 driven plates
Starting system	primary kick
Final drive	#520 chain (⅝-in. pitch, ¼-in. width); 13-tooth gearbox sprocket, 52-tooth rear wheel sprocket, 4.00:1 ratio
Front fork	7.5 in. (190mm) travel
Rear shocks	7.4 in. (188mm) rear wheel travel, three-way adjustable spring preload
Front brake	drum, single-leading shoe
Rear brake	drum, single-leading shoe, cable-operated
Front tire	3.00 x 21 IRC knobby
Rear tire	4.50 x 18 IRC knobby
Frame	tubular chromoly steel, single front downtube
Steering head angle	30 degrees from vertical
Front wheel trail	4.96 in. (126mm)
Wheelbase	56.6 to 57.7 in. (143.8 to 146.6cm)
Weight	235 lbs. (106.6kg)
Weight distribution	45.1% front, 54.9% rear
Ground clearance	10.1 in. (257mm), at frame cradle
Seat height	34.5 in. (876mm)
Handlebar width	32.2 in. (818mm)
Footpeg height	13.2 in. (335mm)
Instrumentation	speedometer, odometer, tripmeter resettable in tenths
Fuel tank	aluminum, 3.23-gal. (12.2L), no reserve
Fuel consumption	17.2 to 31 mpg (7.3 to 13.2 km/L)
Range	55.6 to 100 miles (89.5 to 161.1 km)
Top speed (calculated)	81 mph (130kph)
Sound level per SAE J331a	88.2 db(A)
Available color	yellow
Suggested retail price	$1450 East and West Coasts

All weights and measurements are made with machine unladen and fuel tank empty.

GEAR	1	2	3	4	5
INTERNAL GEAR RATIO	2.67	1.75	1.25	0.91	0.69
OVERALL GEAR RATIO	29.16	19.11	13.65	9.94	7.53
MPH per 1000 RPM	2.61	3.98	5.58	7.66	10.11





The firm plastic number plate is mounted in a bad place—up high and angled so that in the event of a crash a rider's head could come crashing down on its sharp edge.

The front fork easily handles just about anything the meanest trail can throw at it.

The 3.2-gallon aluminum gas tank has a big filler neck and a nice plastic "leash" for the vented cap.

them up, relieving some of the strain on the shoulders and forearms.

BRAKING: The stopping systems on the PE250 are essentially the same as those on the RM250A and B models and prove to be excellent for both enduro and motocross usages.

The PE's brakes are not oversensitive, yet they're sufficiently powerful to bring a speeding PE to a screeching halt on a paved road. Both wheels can be locked—the rear much more easily than the front—on any kind of surface, but the rider seldom does so inadvertently in the dirt. Sometimes, while trying to descend a steep, treacherous hill at the slowest practical pace, the rear wheel will lock up unexpectedly, but this is as much due to the engine's shortage of flywheel inertia as it is the fault of the brake. The front brake remains perfectly controllable at all times, including on those steep downhills. And extended, continuous use of the brakes—like on long, long descents down mountainous trails—fails to induce significant fade at either wheel.

Water and mud have their usual detrimental effect on the brakes, but it's interesting to note that even after fairly extended dunkings into such friction-defying liquids, the PE's brakes are still better than the dry brakes on some European bikes.

RELIABILITY DURING TEST: Our bike suffered two related breakages and one out-and-out failure as a result of an encounter with a trail hazard. The PE was otherwise a stone-reliable motorcycle while in our possession.

The failure wasn't too serious—just a small leak on the underside of the gas tank caused by a split in one of the welded seams. A bit of epoxy took care of the seepage.

Earlier, the rear chain was derailed by a medium-sized branch which flipped up into the rear sprocket as the rear wheel ran over the branch at about 30 mph. The derailment itself was a minor hassle compared to the subsequent damage it caused. The spring-loaded chain tensioner was bent all to hell, and the entire countershaft cover was torn off by the impact of the chain wadding itself up in that area.

The PE uses the same countershaft cover as the RM, but with an additional curved piece of steel installed between the cover and the engine case. This "guard" apparently is intended to prevent such damage from occurring, since RM models have had similar troubles all along. But the PE's system is no better. The cover *and* the guard are cantilevered out from the engine case on three bosses, and any sudden impact on the cover or guard is liable to break the bosses off.

If the PE had a good—or *any*—chain guide, the chain probably would not have been tossed off. The branch wasn't all that stout. And if the countershaft cover had a better design instead of a makeshift, ineffective guard, a broken or thrown chain would not virtually guarantee engine case damage.

Moreover, the PE's clutch cover and actuating arm are extremely susceptible to damage in rocky areas. Suzuki's custom of placing the clutch arm on the leading edge of the clutch case puts the arm in a highly vulnerable area, and the situation is worsened by the skidplate's failure to cover the arm. Furthermore, the low ground clearance insures that if you *do* get into some big rocks, the clutch arm will inevitably get rapped. We didn't break any of these parts on our bike but the arm looked pretty banged up by the end of the test.

In addition to needing the enduro-required items we mentioned earlier, the PE ought to have a simpler, quicker rear wheel attaching system. Repairing a rear flat or changing the tire (as is required in ISDT-type competition and often necessary during regular enduros) is too time-consuming on this bike to be practical in those situations. We normally wouldn't mention such a sophisticated grievance, but the PE's chief competition—the Yamaha IT250—already has a nifty quick-change wheel system, setting the current standard for bikes of this type.

CONCLUSION: Suzuki's first "Pure Enduro" motorcycle is pretty much together in the all-important areas of power, handling, steering and braking. It's fun to ride and easy to go fast on, despite a number of lesser hassles which slightly diminish the bike's overall effectiveness.

Some of those shortcomings will prove relatively easy for the average rider to fix—like mounting some sort of tool bag, revamping the number-plate mounting and even building a chain guide. The others—the ground clearance problem, the vulnerability of the countershaft cover and the unprotected clutch arm—require facilities and levels of involvement beyond the means of most average people. They shouldn't have to worry about such things, anyway.

Still, the PE is an extremely competent enduro bike capable of big things. It can let a rider of common ability ride uncommonly fast, whether he's picking through the closely-spaced trees in New England or blitzing down a fast fireroad in the wide-open Southwest. It is another Suzuki in a growing, exciting lineup that has finally and totally conquered boredom.