

# SUZUKI'S

## *new winner*

**PRODUCED IN SIX MONTHS FROM A FORMULA BREWED IN BRITAIN, SUZUKI'S NEW PE250 WON THREE GOLD MEDALS FOR BRITAIN'S ISDT TROPHY TEAM. FRANK MELLING REPORTS ON THIS REMARKABLE NEWCOMER TO THE ENDURO SCENE.**

**O**NCE IN a while, a really remarkable motorcycle comes along and is instantly recognised as something very special. The Manx Norton, Sammy Miller's first Bultaco trials bike and the Honda 750 fours all heralded a new step forward in a particular form of motorcycling. The Suzuki PE250 is such a bike.

Prior to riding the PE, I, and most other riders on the dirt bike scene, would have put Jawa at the top of the league in the manufacture of big bore enduro bikes. But now that top spot is wide open. The 5-speed Jawas are as obsolete as the BSA Bantam when compared to this latest development from Japan and the latest 6-speed factory specials from Czechoslovakia are going to have to be something really special to match this newcomer's performance.

The PE I tested was a production prototype sent from Japan to Graham Beamish, the British importer. It was Graham, together with his staff, who worked out the characteristics for the ideal enduro machine and sent them to Japan during the winter of 1975. By June 1976, Suzuki had produced the PE. ▶





British ISDT team member, Ted Thompson has ridden the bike ever since its arrival so when I rode it, about a thousand miles had been logged without the engine having been stripped. Ted won a Gold Medal in the Welsh International Two-Day Trial and has also done well in ISDT training events. He also managed two second places in a scramble with the Suzuki!

The heart of any enduro machine is the power plant and on the PE it is really a clever piece of engineering. Basically a piston-port two-stroke with petrol lubrication, the PE's engine has an impeccable pedigree. Its family line starts with the GP motocross engines used by Joel Robert and finishes with this year's outstandingly successful RM production bikes. However, the PE is far from being a modified moto cross motor; it is a purpose designed enduro engine.

## LONGER STROKE

Although many of the details are still on the secret list, we do know that the PE engine has a longer stroke than existing RM engines. The main reason for this is that when a short-stroke engine of only 250cc swept volume has its cylinder barrel filled full of holes, distortion takes place and high piston wear occurs. Further, Suzuki have found that privateers do not replace pistons as often as factory riders, and when the piston rocks in a worn bore, it was possible for it to catch on the exhaust port with nasty consequences. Next year's moto cross engines will also have the longer stroke to give them the same degree of reliability as the enduro models.

The PE breathes through a 34 mm Mikuni into the cylinder port and also through a reed valve direct into the crankcase. This allows for a retarded port timing at low revs when the engine takes in mixture conventionally through the port in the cylinder barrel but still allows the engine to produce maximum power by feeding mixture through the crankcase-mounted reed at high rpm.

In practice, the design gives a degree of flexibility that until now has not been imagined possible. Trying to beat the system, I engaged fourth gear at 10 mph and then snapped open the throttle. The PE chugged away reluctantly and then just kept going all the way up to 75 mph.

Although there is no disconcerting power surge, the action of the reed-valve can be detected at about 3,000 rpm. Below this, the motor is just like a trials engine — as docile and tractable as any mudplugger. When the reeds open, there is real sting in the tail and the PE is one of the fastest accelerating enduro bikes in the world.

By comparison, we ran the Suzuki against a 400cc Maico moto crosser and found it could just keep pace with this full-bore racing machine. The Maico did pass it quite easily but Ted Thompson had to use all the 400's power, and his superior courage, to get by. Another benefit of the PE's reed-valve system is low fuel consumption. During the running in period, Ted squeezed 100 mpg out of the bike, with road speeds up to 60 mph. Flat out competition work returns 44-50 mpg which in conjunction with the 2½ gallon tank, offers an effective range of at least 100 miles. Most organisers plan for fuel stops every 50 miles in an Enduro so the Suzuki could easily skip every other stop and still have a sensible margin of reserve.

Riders with an eye to the environment will

## SPECIFICATION

Single cylinder two-stroke engine, oil mist lubrication.

Magnesium side cases.

Wide ratio gearbox.

All metal clutch.

Electronic PEI ignition system fed from fly-wheel generator.

34 mm rubber mounted Mikuni carburettor.

Single loop frame with duplex engine cradle and sub-frame fabricated from chrome-moly tubing.

Front fork angle 60 degrees.

Wheelbase 56.7 in.

Ground clearance 10.4 in.

Suzuki front forks with 8.66 in. of travel.

Rear dampers by Kayaba — De Carbon pressurised floating piston type — with rear wheel movement of 8.41 in.

Fabricated box section swinging arm.

Three gallon plastic lined alloy fuel tank.

Lightweight DC current lights incorporating rear brake light.

Krizman US Forestry approved spark arrester.

\* Full specification details are not, as yet, available from Suzuki.

**SHORTLY after Frank Melling tested the PE250, Ted Thompson, Ernie Page and Brian Higgins went to Austria with three similar machines to ride in this year's International Six Day Trophy. As part of the six-man British Trophy Team, the three Suzuki riders all won gold medals and earned for Suzuki a manufacturer's team gold medal — the first for a Japanese factory in an ISDT.**

also be pleased to note that because of the low fuel consumption, the blue pall which used to indicate a racing two-stroke in action is now a thing of the past. Barely a whiff of smoke issues from the Suzuki's tail pipe.

Less pleasing is the noise level, which although inside the FIM level for ISDT bikes, is still dangerously near to the offensive. Thompson tells me that the bike was much quieter when new and a combination of wear and tear, and consequent increase in mechanical noise, plus the silencer's packing being in less than pristine condition are responsible for the increased decibels.

Making the most of the engine's power are five well chosen gear ratios. Afficionados will debate their accuracy as Thompson and I did. Ted felt that the jump between third and fourth was a shade too big for optimum acceleration and I was not quite happy with the gap between fourth and fifth. However, let us be clear that we are largely splitting hairs. What is at stake is about one minute at the end of seven hours' competition and the only real solution is a six speed gear box, which will, no doubt, be the next step. In practical terms, the PE's ratios are almost perfect, giving a speed range from walking pace to about 95 mph, which should give most riders a fair chance.

Gear selection, changing either up or down the box, was excellent and I never missed a change. In deference to the test bike being the only PE in the country, I made a point of using the clutch but a brief testing session on the moto cross track showed that the changes were equally good without.

The clutch itself is a five plate unit with alloy friction and drive plates butting up against the steel clutch drum. It is light in

action and progressive, so sticky situations in ultra rough conditions could be dealt with by judicious clutch slipping. What was worrying was the evidence of clutch drag. Since the Suzuki could be started in gear, clutch drag could not only be a hindrance when holding the bike in gear but could also affect this facility, which could be a real nuisance, since being able to start a stalled machine without selecting neutral is of inestimable value when racing.

The PE uses magnesium side covers and the right hand cover houses the worm gear for clutch release. The cover flexes noticeably when the clutch is withdrawn and this might be the cause of clutch drag. Equally, our test bike had done over 1,000 flat out miles without the clutch even being inspected and the difficulty I experienced could well be nothing more than wear.

Good as the PE power plant is, it is not the outstanding feature of the bike. My race-kitted TS 250A has as much bottom and mid-range power (although it is 20 mph slower) and KTM's have all the Suzuki's top speed, although lacking its tractability. All the attributes that I found in the Suzuki I had already experienced in other motors — what makes the PE unique is that all the good things came in one package. However, the handling was simply superb.

Except for the large petrol tank and lights, the PE's cycle parts look to be stolen from this year's GP Suzuki's. The fabricated box section swinging arm is there as are the latest front forks. These are not the pneumatic pattern with which De Coster and Wolsink have experimented, but retain the more reliable spring as a suspension medium — 20 miles from the nearest house is no place to discover that airforks are leaking!

## NEAT FRAME

The frame is very much conventional Suzuki moto cross engineering with a single spine and down-tube splaying into a duplex engine cradle and sub-frame. The whole thing is neat, light and put together in a way which belies its Japanese ancestry and helps erase those horrible memories of early Suzuki attempts at building a moto cross chassis.

Interestingly, the steering head angle is still 60 degrees which was considered optimum in the time of the BSA moto crossers, so the Birmingham engineers must have got their sums right back in the 1950s. The choice of 56.7 in for the wheelbase is about ideal giving a good compromise between straight line stability, nimbleness in corners and drive. Similarly, 10.4 in of ground clearance is the minimum needed when long travel suspension is employed and on an enduro bike a little more could be useful.

The Suzuki's suspension is acknowledged to be one of the finest in the moto cross world and for the enduro rider, it offers the added advantage of not only being taut and responsive like a Maico or a CCM, but also for providing an exceptionally easy and sensitive ride so that fatigue is reduced to a minimum. Much of the secret of the PE's ride lies in the travel and quality of the suspension. The rear end is looked after by a pair of Kayaba dampers using the De-Carbon type floating piston, pressurised by nitrogen, preventing frothing of the damping oil. The rear wheel axis is off-set from that of the swinging arm so that the long movement of the rear wheel, some 8.41 in, does not cause the rear of the motorcycle to





lift excessively.

Suzuki's own front forks, offering 8.66in of travel are exemplary, neither topping nor bottoming even under the most severe use. Like most top class MX suspension units, the front wheel axle is off-set so that a long multi-rate spring can be employed without fear of the coils fouling each other. The trail is then adjusted by having very flat fork yokes.

The PE's handling is so good that it would be easy for me to oversell it and cause scepticism in the reader. The best thing is that it is not set up for moto cross, but for enduros, and this means that the ride is somewhat softer and consequently less tiring. I never found the outer limits of the bike's performance and the main difficulty was continually re-adjusting one's ideas about how fast a section could be negotiated without falling off. It was best when I came on to a nasty piece of terrain so fast that I didn't have time to panic, for when this happened the Suzuki floated across bumps and ruts as if they weren't there. When I did have an opportunity to see what was ahead and realise how fast I was going, things were not so happy. With the throttle rolled off, the PE tended to flop around more than was

ideal, but even so the ride was safe and stable, if not as neat as when the rider had full confidence.

Everything on the bike is designed to make riding as easy, and therefore, as fast, as possible. The seat is somewhat thinner than on the moto cross machine but is superbly comfortable. The footrest-to-saddle relationship is excellent and permits the riding position to be changed with the minimum of effort.

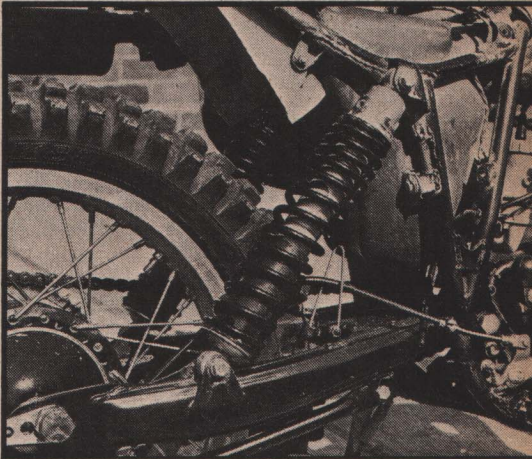
The throttle, clutch and brakes are all feather light in operation. Both 6in brakes are excellent stoppers and the front can be brought into dramatic but controllable action with only two fingers. The rear brake is just as good but the action is spoilt by poorly chosen length of rear brake lever and the cable operation. These combine to give a heavy, spongy action which is going to be the cause of much complaint on slippery descents. Since the cylinder head is already tapped to take a decompressor, the answer is simply to fit one of these useful little gadgets and dispense with the rear brake altogether on muddy sections.

The whole bike abounds with clever features which show that both Beamish and

the Hammamatsu factory have done their homework. For example, the aluminium petrol tank is plastic lined to reduce the chances of losing fuel in the event of a crash or fatigue split. The tank itself is carefully designed with no sharp edges or humps facing the rider — and anyone who has hit his petrol tank hard will testify to the importance of this!

Quick release rubber shrouds cover the brake and clutch levers and this means that both controls can be adjusted at the handlebar end in only a few seconds. The air-filter breathes through an intake panel in the top of the seat and there is no other entrance, so short of total tank deep immersion, the Suzuki should keep going through even the most severe river crossings. Neatest of all is a little carbon stone-breaker fitted underneath the magnesium final drive cover. As Sachs riders will know, this modification cuts up any stones which get carried along the chain line before they can get behind the gearbox sprocket and smash up this area of the engine. What was once a factory modification on the German bikes is now standard fitting on the PE.

**The sub frame is neat and light. Note the De Carbon floating piston dampers and fabricated box-section swinging arm.**



I have been lenient towards the bike's weaknesses because our test machine was a prototype and most of the faults will be corrected on the production versions. The lack of qd wheels, particularly the rear, is an obvious failing, as is the absence of a centre stand. A centre stand is due to be fitted to the production bikes but it seems that the qd wheels will still be absent.

Looking back on the PE, I am left with the warm glow that comes from riding an exceptionally fine motorcycle. Clearly, this latest Suzuki has got all the makings of a world beating ISDT bike and it would not surprise me to see many Trophy Teams PE mounted in the 1977 ISDT.

What is amazing is that the PE has got the facility to be a really enjoyable serious trail riding bike since it is quite capable of being ridden by any half competent trail rider. What will determine the PE's sale more than anything else is price. Current thought is that it will cost about the same as the KTM's Bul-tacos and other thoroughbred competition machines. This will limit its market to the serious enthusiast which will be a great shame since this outstanding motorcycle deserves to have a far wider audience.