

**GIANT COMPARISON**

# JAPAN'S

**DID YOU KNOW** trials riding can be a field day for family fun?

Once upon a time only serious trials riders were afforded the unique pleasures of the nimble, sure-footed trials bike. Now the novice, weekend trailie and the whole family can enjoy this unusually docile and easy to ride motorcycle. Many trail riders, tired of their clumsy, dual-purpose, enduro mounts have changed over to trials bikes — and have become 100 percent better riders overnight.

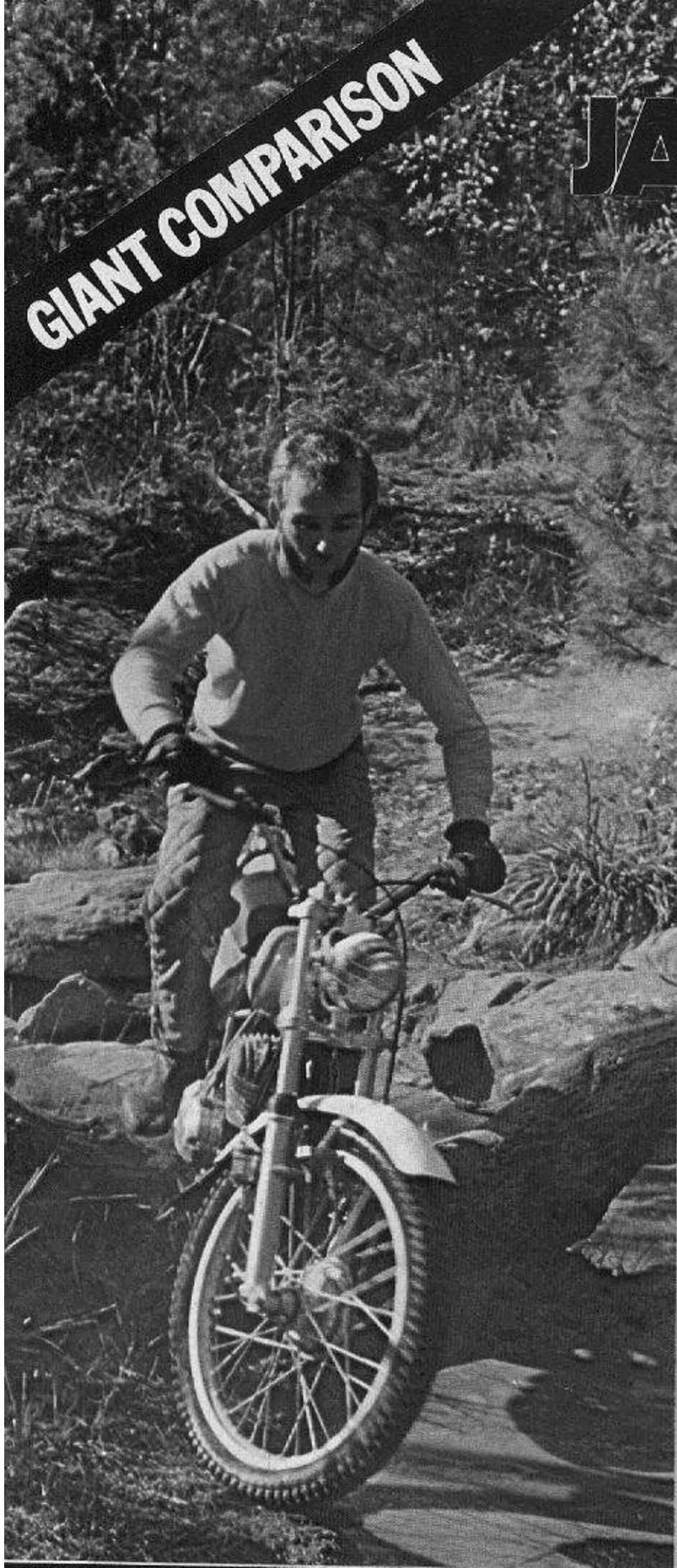
It is no reflection on the enduros' capabilities, but different bikes for different purposes is the rule and the trials bike is no exception.

Let's face it, most of the natural world is rough and rugged, the sort of terrain that makes most trail bikes a hassle. Sure, on the flat, open spaces and trails the enduros are a groove — but there's more of a challenge in the really tough stuff where only a man on foot, or a horse, or a trials bike can go.

Until a little while ago, only the specialist Spanish manufacturers Ossa, Bultaco and Montesa produced that type of machine and the bulk of them were sold to serious observed trials competitors. Sometimes temperamental, they established a basic technology and design standard which even now has hardly been altered. Quick, light steering, tons of plonking power down low combined with thoroughbred handling characteristics added up to a superlative machine.

Then along came Mr Moto! The Japanese employed the most well-known Trials Champions in the world, men like Sammy Miller and Mick Andrews, to design their bikes. The result? The modern trials machine, the sort of magic device to make the amazed rider exclaim "But I freaked out before the bike

The winner: quick but stable steering, zappy power, good looks and thoughtful detailing all work for the KT250. The company and Don Smith have got it right first time.





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did! If I hadn't lost my nerve and jumped off I could have kept on riding through."

We don't suggest that you try a trials bike out to that limit, but in essence it's true — the trials bike is inherently well-mannered and it takes an unbelievably difficult or impossible situation to overcome it. In fact trials machines are so responsive that the effect on first riding one is "I didn't know I could ride that well!"

We'll let you in on a secret — the trials machine does more toward making you a good rider than months of practice on an ungainly trail machine ever will. That explains the rapidly growing popularity of the sporting side of the trials game. The beginner goes in with almost as good a chance of winning as the expert because the chances are their bikes are near identical in breeding and good handling. It's certainly not like the fierce competition of the road racing scene where not only the best rider, but ultimately the best prepared machine will win. Trials takes away some of the experts' advantage and replaces it with a lot of fun, on a near equal footing with the winners. Plans for trials courses along the same lines as golf links, with resident professionals, are mushrooming almost as quickly as trials popularity itself. Just ask Mick Andrews!

The Spanish no longer have it all their own way, with the emergence of representative trials machines from the Big Four Japanese manufacturers. There's never been a more open invitation for family fun. The trials bike is easy enough for anyone to ride, with a relative degree of competence, over almost any terrain, and TWO WHEELS decided it was about time for a review of the newest in the way of trials bikes from the Japanese so here they are, Kawasaki's KT250, Honda's TL250, Suzuki's RL250, and the first of the breed, Yamaha's TY250.



So the Japanese invasion is complete. Observed trials, once the preserve of the specials builders, taken over by the Spanish, now has a representative machine from each of the four Oriental giants.

Their involvement has increased public awareness of the feet-up sport. Be the bikes better or worse than their European competitors, they are at least assured of a greater advertising and dealer coverage.

Although the Japanese machines will undoubtedly figure in the heat of World Championship competition, many more will be sold to people who only want agile, simple bikes for off-road riding.

Back in 1967 the DT1 Yamaha was one of the first examples of a new concept, the dual purpose, road/off-road or enduro machine. The theory was (and still is) that you ride the bike to work all week and go hush-bashing in your leisure time. All right in theory, but marred in practice by the inevitable compromises. A model which was good for the road wasn't much chop in the dirt and certainly not up to the motocrosser-with-lights standard demanded by the quicker riders. That's the direction enduro machines have taken, making them

*The all-rounder: Yamaha's TY250B combines a gentle and usable power band with the ability to turn in its own length. Continued successes are assured.*

a poor choice for people who like to take it easy.

Like it or not, natural bush is far rougher than a motocross track. That is why more and more casual riders started switching to trials machines; a situation taken advantage of by the Spanish with road-registerable versions of their models, and also by Yamaha which with typically inspired timing introduced the TY250.

Wow! Weren't there a few enduro bikes traded in then! Now there are as many TYs loose in the scrub as any other model. In fact, once you get away from the smoother tracks and open areas where the posers/halfwits/pests are attempting 100 km/h slides on their knobby-tyred phallic symbols, then it's virtually all trials country.

And by way of an aside, the Yamaha TY proved to be a real threat in open competition. New South Wales expert Peter Paice spent the first four months of 1975 winning something like 14 trials in



*The tractor: four-stroke guts means the TL250 can tackle anything. Power demands respect, can upset steering balance, but the newcomer shapes up as a definite threat to the strokers.*

*The potential champ: RL250 has gobs of power, fantastic ability to loft the front wheel on demand, but needs revision to steering to make it easier for bush-potters who are less than expert.*





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a row (or was it 15? Perhaps 16?). Anyway, everyone else breathed a sigh of relief when he went off to compete in the Scottish Six Days Trial! For a while the rest had a chance to be the best.

At the time of writing the two Japanese newcomers have not had the chance to fully establish themselves, but Honda and Kawasaki are serious about toppling the competition. Our test findings indicate that both will make it very hot for the established marques.

The Suzuki has been around longer, but has yet to make an impact. Despite good looks and a thoughtful design the RL250 lacks in a couple of important features. That's not to say the company won't pull a winner out of the hat with minor revisions. The recipe for a winning trials bike is a very exact one; subtle differences can mean the world.

Like its three 250 cm<sup>3</sup> compatriots the Suzuki is largely the work of an expert British trials competitor. Gordon Farley was employed by Suzuki as a works development rider, as was Mick Andrews by Yamaha and Don Smith by Kawasaki. Honda's TL250 is the brainchild of Sammy Miller, the champion who was unbeatable on the legendary Ariel 500 in the '50s and early '60s. He started the Spanish two-stroke trials revolution when hired by Bultaco, but has returned to his beloved four-strokes with the Honda.

So the top men will be in there pushing in the World Championships, although that is not always



the best way to assess various models. The rider plays a major part, for in observed trials individual skill is an important factor.

The crucial question is: How will the models perform for the likes of me and thee, people of varying levels of skill who enjoy pottering around in the scrub? Crucial for the factories as well, for many of the bikes they sell will be put to that use. Naturally, most owners will at one stage or another have a go at organised competition. Many will stick with it, but the playbike role demands equal attention.

In each case the trials model is a close relative of the equivalent enduro from the same company. They all use modified versions of the 250 engine/transmission packages, with the emphasis on low-speed smoothness and grunt plus super-low, close ratios for the first three gears.

The frames are tall and slim,

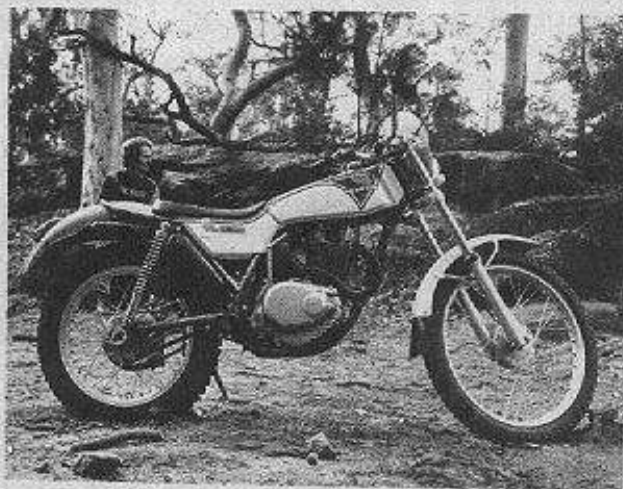
*Trials bikes aren't necessarily the prettiest things, but Kawasaki's "green meanie" of trials is stylish and appealing. And it worked. The Kawa is good at trail speeds too.*

ground clearance exceptional, suspension soft with long travel, while the steering is designed to give quick response in tight low-speed situations.

These are the basic functions of a trials machine. Over the years the ingredients of a successful approach have been well defined, so the four bikes have much in common with each other and the Spanish trialsters. Even the Honda, the only four-stroke 250 trials bike available, is very similar to the rest. So when you compare them, you have to look for small but significant differences, which is what we did.

## Steering

Perhaps the single most important characteristic in a trials machine is its steering. Nature can



*In its TL250 Honda has succeeded in building a totally distinctive trials machine. Four-stroke punch calls for modified riding style. Huge triangular muffer is superbly quiet.*

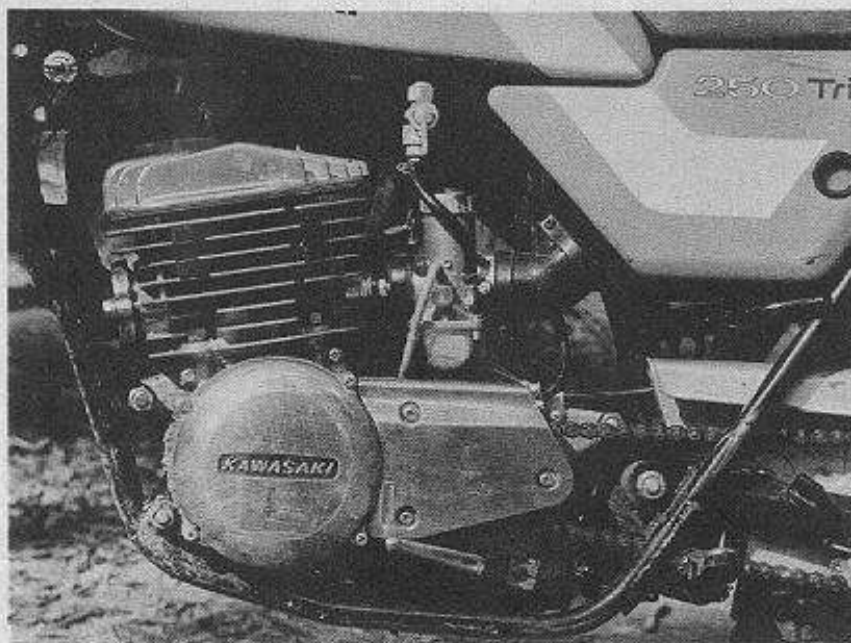


*The first Oriental 250 trialster and a world-wide success, but now having to look to its laurels. Yamaha's TY250B is spectacular in some areas and competent in all.*



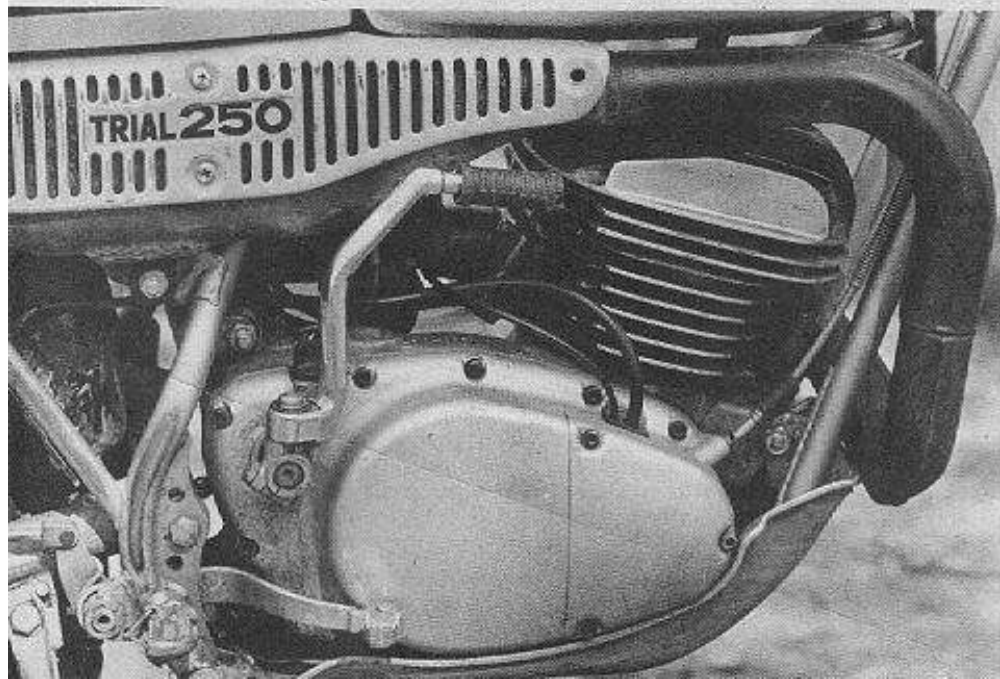


*Suzuki's RL250 demands a delicate touch. The light front end means easy up-and-over tactics, but the extremely quick steering can be a drawback when the going gets tight. It's not a bike for the trials novice.*



*Kawasaki's mill offers zippy power and surprisingly strong low-down oomph. Note the key ignition and sensible fuel tap positions.*

*Reed valves offer obvious advantage to the Yamaha's powerplant and it pulls extremely steadily from idle. Note Allen bolts fixing cases.*



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devise some pretty terrible jumbles of rocks and trees; add the fiendish ingenuity of trials organisers in setting section boundaries and it's obvious why you must have a bike that goes precisely where you want it, to the millimetre.

Okay, forget the organisers. If you're of a curious/venturesome/crazy turn of mind you'll land in enough tight corners just play riding. It's nice to have your bike carry you through and not vice versa. All the test bikes offered far better steering in tough spots than the usual off-road machine but although they have been carefully designed, the newcomers still can't top the Yamaha.

The secret lies in the Yammie's ability to perform full-lock turns at a stop without losing balance.

Consequently it can handle the tightest squeezes between rocks and trees. In less demanding conditions the TY also performs with precision and lightness. People new to trials riding will find the steering too quick, but the same is true of the other three machines too.

Hard on the Yamaha's heels and nearly its equal is the Kawasaki KT 250. The pretty little lime green bike feels loose-limbed, almost skittish, about the way it attacks tough sections, but the front wheel can be placed exactly where it's needed. Right-angled, slow-speed turns cause it to tip off balance and require a little more throttle than the Yamaha, which is happy to stay upright, although there's little between them.

On loose rocks the rear wheel of the KT250 hops and slides around with a mind of its own but the steering is not affected. This is the Kawasaki's strong point, the element in which it outshines all the others. No matter whether it's uphill or down, power on or off, the KT's handling characteristics remain consistent.

With steep forks and short trail dimensions trials bikes often find it hard to track in mud and sand, particularly at higher speeds. The Kawasaki proved to be the best of the four in those conditions, probably helped by more than average weight over the front wheel.

The Honda's handling is affected by a tough and torquy motor, but more of that later. Low speed progress is a series of power-on, power-off jerks, and the front wheel is affected too much by what is happening to the rear. Weight



distribution tends to be light at the front, the centre of gravity is higher than the two-strokes and it has a slightly longer wheelbase. They're all factors which place the TL a shade behind the Yamaha and the Kawasaki, although not to any marked degree.

The TL250 still handles very well, but feels more awkward than the others and demands more concentration. That's no bar to its establishing a top reputation in competition, for when the chips are down the four-stroke can perform incredible feats.

The bike which does place a strain on the rider is the RL250 Suzuki with its lightning-quick steering. The front wheel has a bad habit of washing-out on tight, slow turns. That effect can be countered by keeping your weight forward and adopting a lot of "body English" although confronted with the easy-going competence of the other two-strokes, the Suzuki is less than perfect. Even the best riders appreciate not having to work all the time to overcome deficiencies in the bike's handling.

Yet the Suzuki is only a hair's breadth away from excellence, as the steering figures show. Half a degree more rake, 14 mm less trail, and a 35 mm longer wheelbase distinguish it from the Yamaha. Between two road machines these differences would be negligible. On trials bikes the parameters of success are so narrow the figures mean a lot.

Basically, they show that for a turn of a given radius the Suzuki has a greater degree of handlebar movement, and that the weight of the front wheel/forks assembly is concentrated farther out from a shallower steering axis. When the Suzuki's wheel turns it wants to flop over more quickly than the rider can react to counter it. While the Kawasaki's trail is only 3 mm

*Standard-bearer for the new wave? The four-valve ohc Honda motor is proof that the thumpers are still in the race!*

longer than the Suzuki, it has a wheelbase 40 mm shorter which largely neutralises the problem.

### Suspension

Trials bikes don't have to have the suspension strength of motocrossers but the system can still take a good deal of punishment. Its prime function is to keep the wheels on the ground all the time, so soft springs and consistent damping are important.

On our test, the Kawasaki came up overall winner, courtesy of unique forks (which incorporate an air bleed chamber) and double rate rear springs. All the bikes use five-way springing adjustment at the rear, although for the tough country all favored the softest setting. At higher speeds on the trail, or for road work, the hard end of the scale is more appropriate.

The first bump on the Kawasaki is a sudden shock as air hisses from the top of the forks. They were designed to overcome the bounciness caused by trapped air which is common to most forks. Response is consistent over the entire range and steering hardly affected even at full compression.

The two separate single-rate springs on each rear unit are a very good idea, first used by Suzuki. Not only does the soft section provide remarkable smoothness at slow speed, but theoretically the rider can mix and match with various rates to find the combination best suited to his style and usage. If the soft part proves too soft but the hard rate just right, there's no need to junk the whole spring!

Even when pounded hard the Kawasaki's suspension refused to bottom, another tribute to its excellence. The Suzuki's is almost as good and similar at the rear, but became stiff-legged on full compression of the forks. Rebound damping wasn't as good. Seldom a problem with feet-up work, it could affect stability when the bike is used as a trail machine.

The Yamaha has the same soft

initial compression response as the other two, but is not as well served by its progressively-wound rear spring units. Up front, the forks took medium tough work in their stride, but bottomed over steep ledges when the full weight of the bike was dropped on to them.

On the other hand, the Honda proved too stiff at both ends. Single rate springs at the rear have obviously been designed to cater for the weight of the four-stroke, which at 99 kg is 5 kg heavier than the others. The compensation has been overdone, and the springs led to hopping around and loss of traction which influenced the steering. Compression damping on the forks is heavy; great when the front wheel is taking a real pounding, but harsh passing some of the strain on to the rider.

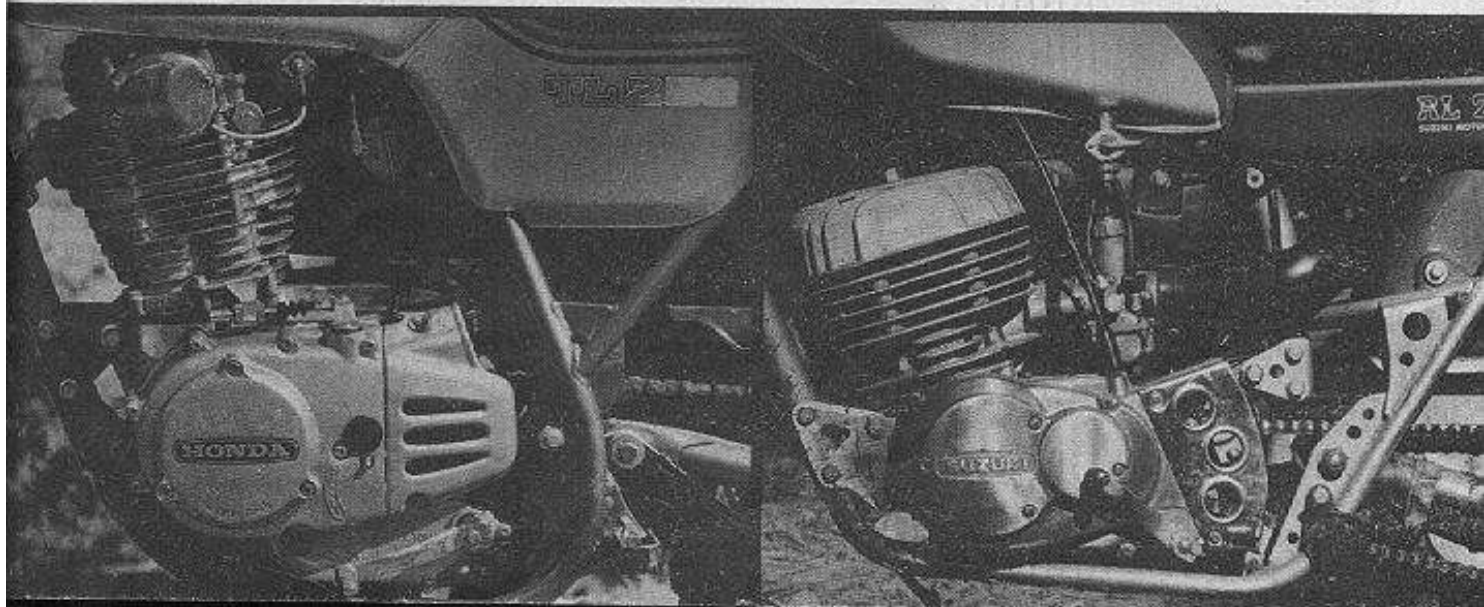
The Honda also suffered a malady not present in the others; fork seals which leaked. Admittedly not much but consistently and an indication of the high pressure generated by the heavy compression damping.

### Engine response

Like the steering, this is a key factor in the success of a trials machine. Top end power is ignored in favor of a rock-steady idle and smoothness as the engine pulls away.

Once again the Yamaha proved to be top dog. Reed valves broaden the power band of a peaky motocrosser; they can also provide smoothness in a trials bike. Without appearing to have a hope of taking the throttle opening without stalling, the TY would pull away time and again from a near stop, without a stutter. No need to worry about slipping the clutch or overcoming a slight hesitation, just dial on the revs!

*To Suzuki goes the most powerful of the motors — wheelies are a breeze! Note steeply canted gearlever tucked out of harm's way. It's the best-designed around.*





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The Kawasaki response was just as instant, spoilt only by too much low-down oomph coming in when only a little is needed. The KT has a powerful motor, and it proved eager to run hard. Careful attention had to be paid to the idle on steep downhill work if occasional stalling were to be avoided. On the other hand that was true of all the two-strokes, even the Yamaha. There's a limit to the amount of engine braking the singles will provide without dying.

The biggest hassle with the Honda was an instant of hesitation just off the idle, followed by the rush of booming power from the four-valve donk. Aggravated by an overly quick throttle (the TL uses the same quarter-turn mechanism as the CR motocrossers) it can lead to hairy moments in situations where delicacy of throttle control is a must. Fine tuning to the carb could make the bike better, but we suspect that some of this habit will remain while it has the quick-action throttle.

The test Suzuki was not as impressive as a well set-up bike could have been, because it too had a flat spot just above the idle, followed by an embarrassing rush of power. Even perfectly tuned the RL motor doesn't provide the same gentle yet quick response as the TY Yamaha.

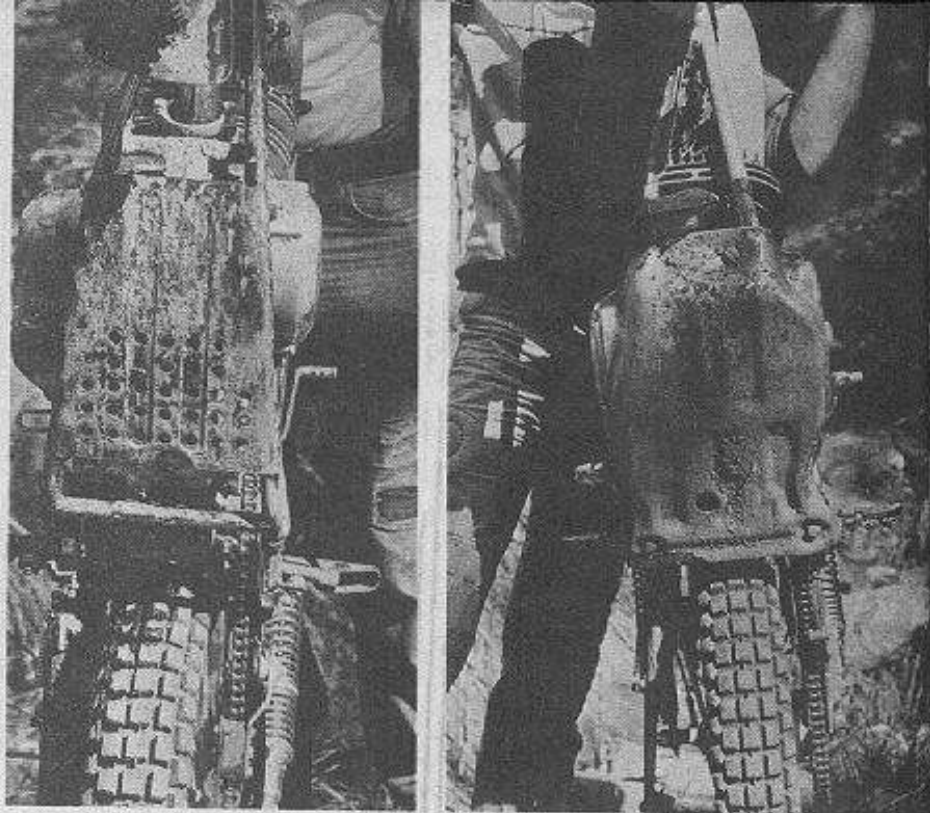
## Power Characteristics

Win on one end, lose on the other. The Yamaha proved to have less grunt than the other three machines. The bike can cut it with the best in its ability to rev out at the top end in the unlikely event of racing it. In the crucial 2500-5000 rpm band the motor has definite limits.

Sammy Miller and Honda have certainly proved their point with the TL; four-strokes are hard to touch for sheer stump-pulling grunt. It wasn't fazed by any obstacle or slope however big or steep. Apart from a touchiness in control as the revs come off idle, it bows to nothing. At times on uphill sections we had the revs down to an almost dead stop, yet the unit would still drag bike and rider onward. Great stuff!

In the tighter sections the suddenness was at times a mark,

*The Honda has enough torque for any situation and its four-stroke engine braking is also useful on steep downhill slopes.*



while even uphill the amount of torque so quickly available could promote wheelspin if you weren't cautious. On the other hand, we had several almost-out-of-control situations saved by the way the motor dug into its task, flicking the front wheel up and round a tough turn, the rear tyre scattering rocks in all directions. No finesse, but enormously capable power. On this basis alone, the TL250 will be a formidable weapon in the hands of an expert.

Downhill it was just as exhilarating, refusing to stall yet still providing controlled braking. Clearing obstacles was simply a matter of letting the power do its stuff. In any of the lower three cogs the front wheel could be lifted with a flick of the throttle and slight pressure on the bars.

In many respects the Yamaha doesn't suffer from the comparative lack of mid-range power, because

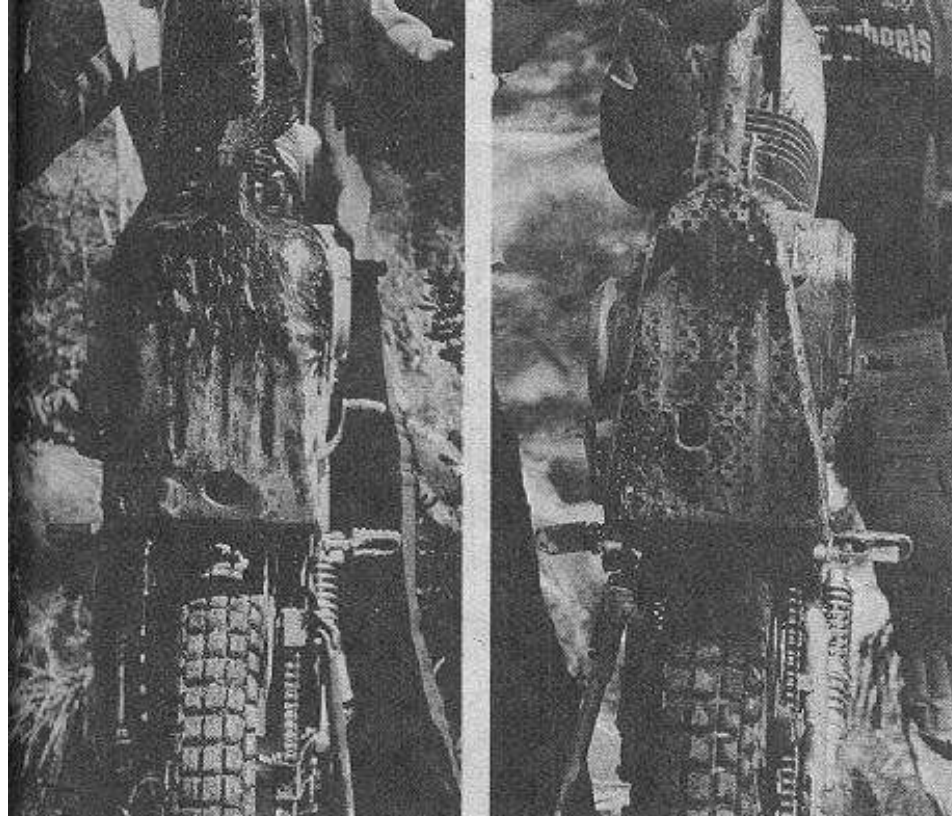
*Are you well-protected? All the trials bikes' bashplates are substantial but usefulness varies. Yamaha's (above) convoluted alloy dish cannot be faulted and offers maximum security. Rugged steel fixture on Honda (second from right) is nearly as good while Kawasaki (far left) and Suzuki (right) leave engine sidecases exposed.*

the motor pulls so smoothly. The bike's overall balance allows the front wheel to be lifted without drama. Despite not feeling as capable in many situations as the other bikes the Yamaha will pull you through with ease, wondering how the heck it all happened. Watch the long, tough, uphill drags though; the TY doesn't particularly like them.

The test Suzuki was hesitant about getting the bit between its teeth, but once underway it lacked nothing. We have no claimed power







figures for the Honda, but at 13.4 kW (18 hp) the RL tops the Yam (12.3) and the Kawasaki (11.9). Also its 22.6 Nm of torque, delivered at a comparatively modest 4500 rpm, tops the figures produced by the others (Yamaha 20.6 Nm at 5500 rpm, Kawasaki 18.6 Nm at 4000 rpm).

Couple this with the light front end and you have something akin to an express elevator when attacking the really big steps and ledges. Just dial it on and up you go. The low-speed hassles mean you must keep it revved up a little, which reintroduces the bogey of nervous steering. As long as you're free to pick your own path (no nasty-minded trials organiser is forcing you into a 180 deg turn) the RL proves very capable as a go-anywhere machine.

The zip and pep of the Kawasaki is remarkable and exciting. While it must concede defeat to the Yamaha and the Honda in the way they accelerate from zero speed with the load on, once past 1500 rpm it has a long, flat torque band which is smooth, strong and very capable. In the really tough uphill work only the Honda can beat it with superior torque.

Even then it's close, and the Kawasaki's delightfully nimble steering lets it thread a path through the jumbled rocks which are a feature of the bush around Sydney. Less strain on the rider, and less chance of getting into strife

*Suzuki's forks take bone-jarring descents in their stride. The bike's real strength is in uphill situations allowing full use of the light front end and big engine punch.*

adds up to easy riding. However, when there are high obstacles to overcome the frontal weight of the bike has an adverse affect. The bars have to be hauled up vigorously and the throttle given quite a handful of revs to match the wheel-lifting capabilities of the other three machines. In many cases that becomes more forward momentum than the situation can comfortably handle. Keen trials competitors will naturally take off the headlight, which comes as a standard fitting, and improve the weight distribution slightly. Those who want to ride the bike on the road as well must learn to adjust and be grateful that the weight distribution imparts top class steering.

### Silencing

Trials bikes are hardly ear-shatterers at the worst of times. One of the sport's big appeals is that it is quieter than other forms

of two-wheeled competition. Yet there's still room for improvement, since power demands are such that a motor can be whisper quiet and not lack anything.

Of the four we tested only the Honda was truly silent. Not as quiet as the TL125 Bials, but still the standard for the others to aim for. The Yamaha is borderline while the Kawasaki and Suzuki we felt to be over the limit of tolerance. The KT has an exciting rasp to the exhaust, while the RL is slightly more annoying with its staccato popping. Both could do with better muffling.

### Clutch

Successful trials riding demands precise, delicate control of the power being fed to the back wheel. Part of this delicacy is lost if clutch is not smooth. In this category both the Yamaha and the Suzuki scored well, while the Honda and the Kawasaki were prone to sudden take-up.

The Honda's is a typical double-lurch take-up, a feature of that company's clutches for some time. With care it can be avoided. The Kawasaki's clutch is just too sudden, and can lead to worry when you're attempting a feet-up start on difficult ground.

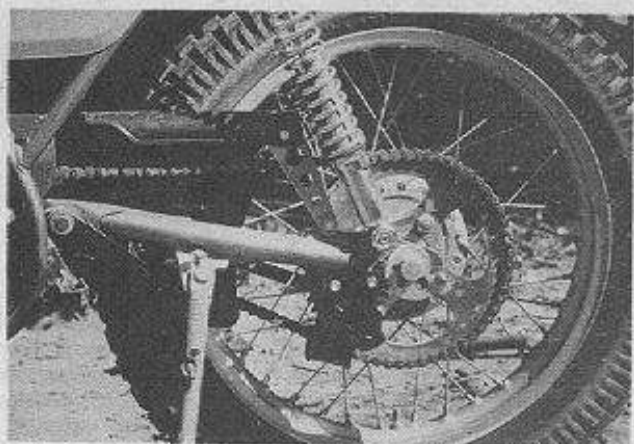
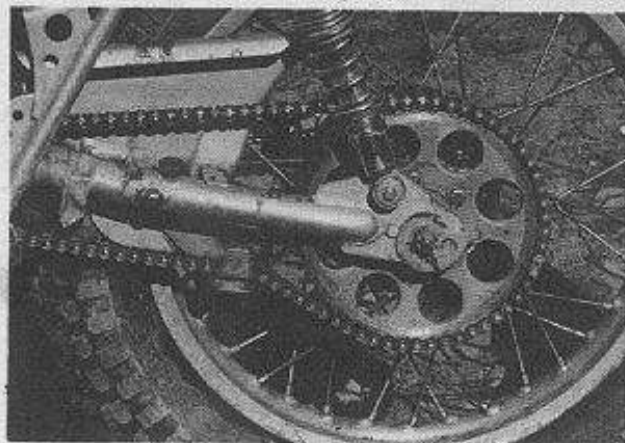
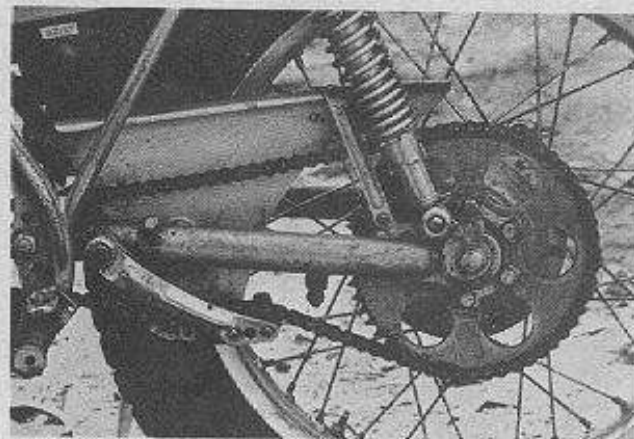
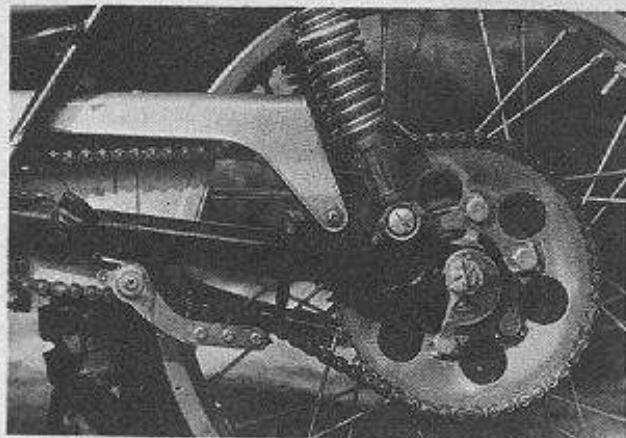
### Transmission

As competitive trials generally require only a single gear per section (usually first or second), the ease of gear changing on the move isn't all that important. More emphasis is placed on keeping the lever out of harm's way so it can't be broken or jogged into neutral.

The makers are aware that many of their bikes will be used in trail riding situations, and have tried to make the levers as accessible as they can. Where there is compromise, there are problems. For tight, rocky work all the levers have to be relocated on their splines to poke upward and out of the way, making







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them awkward to reach when sitting down and travelling at any speed.

Even then they displayed varying degrees of vulnerability. Yamaha has gone for a tricky swivelling crank end section on the TY and although it may stop the gear selector lever from being bent, on the test bike it hadn't stopped a hole being punched in the magnesium engine cover by the lever itself.

Angled up out of the way the stubby gear lever on the Suzuki proved safe, while the cranks on the Kawasaki unit keep it close to the cases and well protected. Honda's lever looks to have been borrowed from one of the road models and will have to be aimed well upward to keep it out of trouble. On the test bike we didn't shift it round far enough and had bent it in the first hour's riding.

Shift action of each model displayed varying degrees of awkwardness on the move at trail speeds. The Kawasaki and the Suzuki were the most precise and both could handle clutchless changes without too much hassle.

For the Honda and the Yamaha nearly every shift demanded a pull on the clutch and a hefty movement with the boot to raise any response. While they may prove hard to knock out of gear in competition they will prove equally hard to shift in normal conditions.

Finding neutral was a bummer on all the bikes except the Suzuki. Again, this is no big deal in competition. The models all have in-gear starting, but this is a nuisance in normal conditions when you might want to have the motor idling to check carburetion only to find it must be stopped before you can get neutral.

Gear ratios all follow the formula of three stacked close together at the bottom (competition) with big gaps to fourth and fifth (trail riding and moving between sections). Stock, the Honda has the lowest first gear, at 39.83:1. Next comes the Yamaha, at 37.62, while the others are in the high 36:1 range. However, both the Kawasaki and the Suzuki have the benefit of a 15-tooth countershaft sprocket which can be swapped for a 14 or a 13, giving a ratio as low as 42.5:1. With a 13 tooth countershaft sprocket the Yamaha leaves no choice except a bigger sprocket at the rear, or possibly a 12-tooth primary drive sprocket at the front, a move which tends to

*The two-strokes all use similar chain tensioners, drip-feed oil reservoirs in the swing arm and rightside propstands, but Honda (above) has opted for no automatic oiling and leftside stand. Chain tensioners have varying degrees of vulnerability; ranging from poor for the Yamaha (top) to good for the Suzuki (left). All have snail cam wheel adjusters.*

leave the chain scraping the swing arm.

All have about the same gap between first and second; the Honda has a bigger jump to third, while the Suzuki keeps that cog close to second. At the top end the Honda and Suzuki have the biggest gap in the range between third and fourth gears with the top two ratios quite close together. The Kawasaki and the Yamaha have equally large gaps between 3-4 and 4-5, giving them long legs for road work.

### Ground clearance and sump protection

It seems strange that no one has followed the Yamaha's lead with under-motor protection and the Suzuki and Kawasaki are both deficient and somewhat vulnerable. The TY250A had a plastic and carbon fibre bash plate which proved too fragile, but at least offered good coverage. The current



B model uses an alloy plate of the same dimensions, and shines in the bruising environment of the Sydney bush, where rocks are always ready to bash a piece out of an engine sidecase.

The Kawasaki has the best ground clearance of the four, but lacks complete side protection as the steel bash plate spans only the frame rails. The RL is even worse because its motor cases are both wide and have abrupt corners, making them a prime target for knocks and cracks.

The TL Honda uses a sturdy steel plate which is broad enough to provide good cover for a wide motor. All the bikes have rear brake levers tucked well away yet not impossible to reach once you know where they are, while footpegs are all stumpy, and sprung to swivel back when hit.

Chain tensioners are a good idea, but while saving the chain can be vulnerable too. The Yamaha's is set too far back and too low and takes a fearful pounding. The Suzuki and Honda units are far better, while the Kawasaki tensioner falls between them in terms of protection.

In an overall test of clearance and slimness the Kawasaki and Yamaha are neck and neck. They can wriggle between rocks and stumps with ease, while the other two are nearly as good. As with many other features, the machines' dimensions are very close.

### Detailing

The total effect of a whole lot of little features is important in determining how good a trials bike is. While the four we tested are nearly identical there are some significant differences.

Things such as hand grips are important; a category in which the Honda scores well with its soft, ridged units. A diamond pattern on the Kawasaki proved nearly as comfortable but not as secure, while the harder material and sharp patterns of the other two could lead to discomfort after three or four hours scrambling around the bush.

All the motors use magneto

*Sometimes we made it... sometimes we didn't. That rock ledge is a lot tougher than it looks!*

ignition and the bikes are all fitted with kill buttons or switches. The Suzuki and Yamaha are push buttons which, on the test machines worked well even when wet. However, neither was in the preferred location close to the left handgrip, although it is a matter of personal taste and the units can be placed anywhere the rider wants.

Not so good is the Honda, with a barrel-type switch fixed to the centre of the bars, unable to be shifted. No good! The middle of the bars is the last place your hand is likely to be in the event of a spill which requires the motor be shut off quickly (and spills occur all the time in trials).

We liked the switch on the Kawasaki, a rocking-style set into the right side grip, much like a road bike. It was stiff enough not to be accidentally knocked off, yet could be reached with the right hand still gripping the throttle. We'd like to see the bikes fitted with two of these switches wired in series, one on each side. There's nothing worse than having a bike going crazy, ground-looping, as you desperately try to grab the clutch, shut off the throttle, anything! At times like that it's "Oh for a kill button I can reach".

The Kawasaki scores poorly in the footpeg department, with its flat steel units covered in little dimples. Mud shouldn't build up but at the same time the grip is insecure. The Honda's plain serrated open loops are clearly the best, while the Suzuki and the Yamaha are also well served by more complex variations.

Only the Honda lacks a chain oiler. The three two-strokes have identical systems, with the left side swing arm acting as a reservoir and an adjustable valve letting oil drip on to the chain. Because it directs fluid to the centres of the chain rather than the side link plates and because of trouble found keeping the flow even, it is of little practical benefit although it looks good on the sales brochures. Better for the rider to carry out regular chain lubs himself and be sure of good chain condition.

Numbered snail cam wheel adjusters have become almost mandatory for trials machines (a great pity they're not used as widely on road bikes!) and the four

Oriental are set up this way. The Yamaha and the Honda are notched as well for added security.

Flexible mudguards are a must. All the bikes are fitted with them. The Yamaha and the Kawasaki have fork braces hidden under the front guards which is a neat idea. Overall the Yammie has the best set-up, for its material is more flexible than the Suzuki, with which it shares the feature of direct guard mounting at the centre of the fork brace. The Honda and the Kawasaki have metal stays which not only increase weight and complexity but force the guard into a sharper bend when it becomes caught against an obstacle. Despite the plastic on the KT's guards being the most flexible, the front one was torn at the stay mounting points in one bingle.

Kick starters varied, although the four bikes all had primary systems, meaning they could be fired up in gear. The Yamaha lever hits the right side footpeg, restricting the stroke. With the sweet-starting test machine it proved no hassle, but a more balky example could demand the lever be hooked back to allow a longer swing, and that's a hassle.

The Suzuki's lever clears the peg, thank goodness, but it doesn't engage until well down the stroke and proved awkward to use. Best were the Kawasaki and Honda units which were simple and easy to use.

As with the chain oilers the Honda has gone an independent route with the side stand. Like the two-strokes, it is mounted on the swing arm, but the designers have seen fit to place it on the left. Because of the chain, it tends to project a little more, although we prefer it since it's on the same side as a normal bike. The right hand mounting of the others needed a little time to get used to.

### Waterproofing air filters and maintenance

During the test we put all the bikes through a lovely deep pool in a small creek. The exercise proved the Kawasaki and Suzuki deficient in the air filter department, despite being superior for sparks (both use a pointless CDI system). Worst was the Suzuki, its flat foam element placed at the top of a steep descent

(Continued on page 60)





## JAPAN'S 250 TRIALSTERS

Continued from page 39

in the intake tube. If water enters the air box, (and it will quite easily through the rear facing funnel) then only the filter stands between it and the motor. Oiled foam filters are no great chop on halting water!

Getting at the system also requires a Phillips head screwdriver, first to remove the screws holding the plastic trim strip, and then the side case of the air box. No good if a hurried clean-out has to be done

far from any support vehicle!

Similarly the Kawasaki needs a spanner to take the side off its air box. Although the unit has a still air section and raised lip before the filter, the intake holes are exposed enough to let water and grit in, while the filter element itself is poorly positioned, and on test it allowed some water and particles of sand past into the carburetor.

The Yamaha proved better with its rather complex system nestled behind the hinged side panel. The well-sealed magneto case stopped water entering but should it start to

leak trouble with the sparks would follow as the TY250, unlike the other two, uses points for triggering.

Top of the group was the Honda, displaying the care in design and sealing the company uses on all its bikes. Air enters the filter box through a well-shielded inlet tucked right under the seat, while the element fits firmly and snugly in place. Our only reservation came from the idea of having the filter first and the still air section downstream. Around the other way makes more sense in the event of

## TRAILS COMPARISON SPECIFICATIONS

MAKE:	HONDA	YAMAHA	SUZUKI	KAWASAKI
MODEL:	TL250	TY250B	RL250	KT250
PRICE:	\$988	\$1019	\$999 (with lights)	\$989
WARRANTY:	3 mths/5000 km	90 days	12 mths/12,000 km	6 mths/6000 km
ENGINE:	Air-cooled four-stroke single; single overhead cam.	Air-cooled two-stroke single; reed valve induction.	Air-cooled two-stroke single; piston controlled porting.	Air-cooled two-stroke single; piston controlled porting.
Bore x Stroke:	74 x 57.8 mm	70 x 64 mm	70 x 64 mm	69.5 x 64.9 mm
Capacity:	248 cm <sup>3</sup>	246 cm <sup>3</sup>	246 cm <sup>3</sup>	246 cm <sup>3</sup>
Comp ratio:	9.0:1	6.0:1	6.0:1	6.5:1
Claimed power:	NA	12.3 kW (16.5 hp) at 6000 rpm	13.4 kW (18 hp) at 6000 rpm	11.9 kW (16 hp) at 6500 rpm
Claimed torque:	NA	20.6 Nm (15.1 ft/lb) at 5500 rpm	22.6 Nm (16.6 ft/lb) at 4500 rpm	18.6 Nm (13.7 ft/lb) at 4000 rpm
Lubrication:	Wet sump	Autolube	Premix	Autolube
Carburetion:	26 mm Keihin	26 mm Mikuni	28 mm Mikuni	26 mm Mikuni
Air filter:	Oiled foam	Oiled foam	Oiled foam	Oiled foam
Ignition:	Flywheel magneto, breaker points	Flywheel magneto, breaker points	Flywheel magneto, electronic triggering	Flywheel magneto, electronic triggering
Starting system:		Primary kick lever, right-side mounted (for all four)		
TRANSMISSION:		Geared primary, constant mesh indirect pattern gearbox, left-side foot change, one down, four up, neutral between first and second. Chain final drive.		
Ratios - (Overall:1):				
1st:	39.83	37.62	36.85	36.62
2nd:	30.46	28.53	27.44	27.83
3rd:	21.12	21.11	21.53	20.62
4th:	13.75	14.39	13.17	13.75
5th:	9.96	9.09	9.76	8.90
Primary red:	3.261:1 (75/23)	3.400:1 (68/20)	4.235:1 (72/17)	3.250:1 (39/12)
Secondary red:	4.071:1 (57/14)	4.077:1 (53/13)	3.600:1 (54/15)	3.467:1 (52/15)
FRAME:	Welded steel semi-double cradle. Pressed metal top member.	Welded tubular steel girder type. Engine a stressed member.	Welded tubular steel semi-double cradle.	Welded tubular steel semi-double cradle.
WHEELS, TYRES AND BRAKES:				
Front:	Alloy rim, 2.75 x 21 Trials Universal tyre, single leading shoe drum brake.			
Rear:	Alloy rim, 4.00 x 18 Trials Universal tyre (except Suzuki, 4.50 x 18), single leading shoe drum brake.			
SUSPENSION:				
Front:	Coil springs, telescopic forks, two-way oil damping.			
Movement:	165 mm (6.5 in.)	170 mm (6.7 in.)	170 mm (6.7 in.)	175 mm (6.9 in.)
Rake:	26.5°	26.5°	27.0°	26.5°
Trail:	86 mm (3.4 in.)	90 mm (3.5 in.)	76 mm (3.0 in.)	79 mm (3.1 in.)
Rear:	Swinging arm, spring/damper units, five preload positions on springs.			
Spring type:	Single rate	Progressive	Two-piece dual-rate	Two-piece dual-rate
Movement:	95 mm (3.7 in.)	90 mm (3.5 in.)	90 mm (3.5 in.)	100 mm (3.9 in.)
CAPACITIES:				
Fuel:	3.8 l (0.8 gal)	5.0 l (1.1 gal)	5.0 l (1.1 gal)	5.5 l (1.2 gal)
Engine oil:	1.8 l (3.2 pints)	0.35 l (0.6 pints)	Premix	0.25 l (0.4 pints)
Transmission:	Shares engine oil	1.3 l (2.3 pints)	1.3 l (2.3 pints)	1.2 l (2.1 pints)
DIMENSIONS:				
Dry weight:	99 kg (218 lb)	93 kg (205 lb)	90 kg (198 lb)	96 kg (211 lb)
Wheelbase:	1325 mm (52.2 in.)	1310 mm (51.6 in.)	1345 mm (53.0 in.)	1305 mm (51.4 in.)
Overall length:	2050 mm (80.7 in.)	1985 mm (78.1 in.)	2035 mm (80.1 in.)	2015 mm (79.3 in.)
Overall width (handlebars):	840 mm (33.1 in.)	835 mm (32.9 in.)	850 mm (33.5 in.)	835 mm (32.9 in.)
Overall height:	1110 mm (43.7 in.)	1070 mm (42.1 in.)	1130 mm (44.5 in.)	1155 mm (45.5 in.)
Seat height:	805 mm (31.7 in.)	760 mm (29.9 in.)	810 mm (31.9 in.)	820 mm (32.3 in.)
Footpeg height:	375 mm (14.8 in.)	360 mm (14.2 in.)	380 mm (15.0 in.)	385 mm (15.2 in.)
Ground clearance:	285 mm (11.2 in.)	280 mm (11.0 in.)	290 mm (11.4 in.)	310 mm (12.2 in.)
TEST MACHINES FROM:				
	Bennett Honda P/L, Ralph Street, Alexandria, NSW (TL250 Honda).			
	McCulloch of Aust P/L, Station Road, Seven Hills, NSW (TY250B Yamaha).			
	Hazell and Moore Inds, Campbell Street, Sydney (RL250 Suzuki).			
	Kawasaki Motor Cycles (NSW), Parramatta Road, Camperdown, NSW (KT250 Kawasaki).			



massive intake of water or dust. The Honda had the easiest servicing arrangement, requiring merely popping of a plastic side cover off and undoing a single wing nut.

The Suzuki is odd man out among the two-strokes with its premix fuel/oil system. We know many competition riders prefer to mix their own, so they'll not be hassled, but as we said before, the bikes won't be bought just by competitors. There's nothing worse when out for a day's gentle fun to have to fiddle around mixing petrol and oil. Better to have the autolube like the Yamaha and the Kawasaki and give the serious competitive types the option of dicing the pump and oil tank should they want to save weight.

While the solid-state triggering of the Suzuki and Kawasaki electrics is a complete set-and-forget affair, the others will need regular checks of their points. Boo to points, even if the Honda's unit is set high and accessible on the end of the overhead cam!

#### Road accessories

All the bikes come equipped with one form of lights or another. Suzuki offers two models of the RL, one stripped for competition, the other (complete with battery, higher gearing and all the usual "extras") ready for the road. That's

a good move, although you pay for it, and you lose a certain flexibility of decision.

The approach used by Yamaha and Kawasaki is better. Their models come with marginally legal electrics as standard. If you're right into heavy competition or bush riding only the ancillaries can be taken off quite easily (the headlights are fed direct from the magnetos).

Honda has missed somewhat with the TL. Although optional head and tail lights are available, there is no horn, stop light or high/low beam facility. Bennett Honda, the NSW distributor, fitted the test bike with a Preston Petty head and tail light system including stop and high beam. It hadn't been fully set up when we used the bike, but promises to be the answer for road registration, albeit adding to the total cost of the bike. The extension above the headlight, for painting on competition numbers, looks less than elegant.

The Kawasaki is the only model equipped as standard with an ignition key, although the Suzuki has one in the road version. Both bikes proved the best on road, with softer seats and a less cramped seating position than the others. They're all short-haul only in our opinion, one obviously not shared by several owners judging by the

numbers used as commuters around Sydney. To each his own.

None of the trialsters are really impressive as trail machines. They can't be; they're too good as out and out competitive trials bikes. Hence you find overly quick steering and a reluctance to slide (although the Kawasaki is better than the others in this respect). You don't have to be super-competitive about it, entering trials every weekend, but on the other hand sticking to the easy trails is wasting a lot of the machines' potential. Best to treat them as handy transport to where the really challenging stuff lies.

#### The wrap-up

Often at the end of a comparison test we find that it would be unfair to say one bike is better than another, for usually they have been designed with varying uses in mind, and conflicting emphasis on different capabilities. Not so the trialsters, all of which have been built primarily to win in competition and secondly to act as go-anywhere family bush machines.

That's the standard on which we judged the four Japanese 250s. We did it as thoroughly and dispassionately as we could. We took votes, added up weighted scores for various classifications,

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tossed coins, consulted wise men and looked at the entrails of chickens.

Time after time, the results were the same; Kawasaki 1, (narrowly), Honda and Yamaha 2nd equal (no matter what scoring system they were virtually impossible to separate) followed by Suzuki.

A couple of points about the Kawasaki need looking at. One is the footpegs, the other is a quietening down of the power off idle. It won't handle the very tight turns as does the Yamaha, which still makes the TY the one to topple in outright competition. But the KT has looks, charm and character on top of all its other attributes. It deserves top rating.

These things the Yamaha lacks slightly; it doesn't even feel particularly impressive when you're riding it, but nobody can deny it pulls off the impossible with astonishing ease. Deficient in no one area, smoothly competent in all, it will continue to grace the



The Yamaha's strong point is its all-round versatility.

winner's lists for a long while.

But watch for the four-strokes. Honda and Sammy Miller have pulled off a remarkable first-time effort. The TL250 demands a slightly different riding approach. Its power characteristics feel strange if you are used to two-strokes but in a tight situation they are remarkable. Throttle,

suspension and steering all need minor revision; none is bad enough to stop the Honda selling well and winning trials all over the world.

The Suzuki is the one which needs a design rethink, in steering geometry and dimensions, weight placement and engine response. It's close to the others. The bike is light, good-looking and tough. Suzuki is a company with a reputation for learning quickly and being equally quick to improve deficiencies. Watch out for the RL turning into an eye-opener.

So there they are. The Orientals are into trials in full force. Trying to determine how the bikes compare with the Spanish would demand a test equally as exhaustive and twice as long. Suffice to say there is little between the lot of them. With such an impressive array to choose from, trials competitors and weekend scrub-riders are faced with what amounts to an embarrassment of riches. The Good Times are truly here! \*

## WHERE'S THE FUN GONE?

Continued from page 26

Loop number two was a replay of number one, and with that over and 90 minutes to spare before the apres-lunch riding, we joined the spectators and fellow racers in the pits and went hunting for something cheap and simple in the way of lunchtime eats. We found neither, and wandered back to play pit crew on our racers. Both bikes were just plodding along fine, and Len was plodding hard enough to be running dead level with the top runners on a "no points lost" basis.

We spoke to Baker brothers Mick and Garry, the super buggy pilots who were putting their 1600 cm<sup>3</sup> "Sandmasters Special" through the first loop (the second, soon-to-be-encountered loop for bikers) while we were out eating dust in the morning.

"It's hairy, this next loop that you guys are riding. Dangerous for a bike, really. Your visibility's zero and it's just sand, dust and some more sand all the way. Lotts hazards that aren't really marked either so take it easy."

We shrugged it all off, not knowing that Garry Baker was into dirt bikes long before his buggy days and was more than qualified to assess the track from a bike

racer's viewpoint. Thanks Garry, we should have listened.

The dust started at the line, and finished at the other line 60 km later. Nothing very pleasant happened in between. Straights inviting full-bore riding but with overhanging trees and constant whoopies often filled with deep (above footpeg height) "talcum" sand made the "B" loop both slow and dangerous for most riders.

Overhanging branches collected a few pairs of goggles during the day, and we can recall at least three instances of "Boy, am I glad that I was wearing a mouthguard", later in the pits.

The big danger was the dust — constant blinding dust that slowed all but the superstars (and remember what the promoters said about an amateur event!) and a few members of the lunatic fringe.

The full throttle radar-operated guys even hated it and the name of the game gradually became "survival". Not everyone did, and Victorian rallycross champ Karl Morlang joined the crew at the Mildura hospital where both he and Len Williamson kept the ward bored with multiple tales of countless CZ victories throughout the non-communist world. Hohumm!

Dust, dust, more dust and even a scattering of iron-posted wire

fences at the trackside along with the usual hazard of invisible (in the dust), flagon-sized mallee roots to shatter rims, tyres and riders' tootsies was about all there was in that second loop.

The fun dribbled out of the event for many riders after the first 20 km and broken bikes, swollen riders and sagging suspensions were as common as discarded beer cans on the Calder Highway.

For most of us that kind of riding made the event a savage disappointment.

But it can be better! Last year it was, and so was '73. This year we felt ripped off right from the very start with the feeble percentage payback of entry fees in prize money.

Most of the competitors who rode in the cycle classes came away feeling like the poor cousins of desert motor sport. We competed on a four-wheeler-orientated circuit without the added safety afforded a four-wheeler pilot and for a poor cash return. That's not really the name of the game, is it now?

By the way, Graham Smith won the rally on his Bert Flood-sponsored Pursang 363, and TWO WHEELS' Melbourne man Kel Wearne fell victim to the dust and assorted evils on his similar machine. Graham's happy, Kel isn't, but maybe next year... \*

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