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Remember when that strange, original XS750D was called "years ahead of its time". It might well have been true — then! Many models later it's bigger and still with us. Even innovators are allowed to trail the slip occasionally. . . on page 20.

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Four-Stroke Firepower Comparo

The shootout for the streets and trails has made the gunfight at Okay Corral look like a Sunday school picnic!

Ponder recent trail bike evolution. By 1978 Kawasaki had failed to acknowledge the already-mature decade. Its trailbikes hadn't turned the corner to enlightenment. Yamaha's "two and four" policy was destined to provide two and four-stroke options for off-road while Honda sat strong on the fourstroke heap — although its product had just contracted elephantitus! This year it's very different. The hot new weaponry is the quarter-litre four-stroke trailster and it's zeroed in on the biggest sales in Australia. The target is clear and everyone has ammunition!

OMPETITION DIRT riders understand the limitations of dual-purpose machinery and stay right away. Heavy metal touring riders see them as ugly ducklings. But somehow, though, the ubiquitous trailbike comprises a massive slice of bike sales in general.

True, the dual-purpose bike is easily an inadequate machine when pitted against specialised enduro or motocross machines, and against pure road bikes it not only doesn't shine, it isn't in the race. But despite all this, the "softish" 250 trail bike gives something worthwhile to thousands of riders each year. It proves that professional dirt bikes are not the market arbiters and that many riders not only enjoy the comparative widespread adaptability of the dual purpose machine, but actually swear by it.

While Yamaha was the catalyst for

modern trail bikes it was Honda which successfully (as usual) foresaw that riders with a yearning for both sides of the coin would be attracted to the simplicity and longevity of a four-stroke engine, compared to the noisier, more fussy two-stroke.

Following the instant-success Honda fourstroke XL250 launch in 1972-73 was the revival of thumpers from the other manufacturers. Yamaha's 500 attracted more of the enthusiast market, Suzuki made the oddball 370 and Kawasaki came into the fray last with the KL250, a softer version of slow.

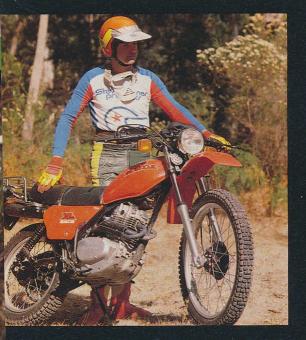
In the meantime, Honda had introduced the super trail bike of them all, the XL250S - four valves, dual exhaust ports, long travel suspension with a 23-inch front wheel. In 1978 this effectively snuffed out the opposition. The XL has dominated sales since and because of its overall performance twice earned the TWO WHEELS Off Road

Bike Of The Year Award ('78 and '79).

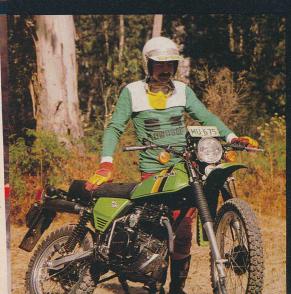
The overwhelming sales success of the Honda XL250S didn't mean it was the best dirt bike around, nor was it in the lead amongst the 250 road machines. No compromise can be the best. What the XL250S offered was a reasonably predictable and stable moderate-speed trail bike with practical road manners. It highlighted buyers' expectations of having a single bike which would cater for weekday rides to work, short highway trips and adequate dirt, forest, mud and sand excursions. The formula worked.

It was inevitable the opposition would tackle the runaway 250 leader. Yamaha took longer than anticipated, but earlier this year the new 250 with its cantilever monoshock frame arrived. The XT250G was designed to slash Honda's jugular.

Almost at the same time the upgraded







Kawasaki KL250A3 arrived. It was closer to a new model than a mere upgrade for it featured the KLX engine, a new frame and the best suspension in its class.

In addition to testing the KL and XT (TW, June) we compared the three bikes to see whether there was a real threat to the Honda. The three are similar in cost, styling, performance and function, but there must be more to it than that. Just where are the differences?

The machines

All are four-strokes, all have five-speed gearboxes, all have pillion pegs, all include improved suspension travel over previous models and each of the three is weight-trimmed a little.

The newest engine, in the XT Yamaha, has the shortest stroke (75 × 56.5 mm) with the XL Honda next (74 × 57.8 mm) and the KL Kawasaki with (70 × 64 mm). The Honda and Yamaha displace 249 cm³ against the KL's 246 cm³. All have oiled-foam air cleaner elements and point-less CDI ignition systems. Yamaha claims more power and torque. Kawasaki and Honda are virtually identical.

All three have chain-driven overhead cams, but the Honda is the most exotic with four valves and twin exhaust ports and headers — which, coincidentally, should give it the most useable power. Both the Honda and Yamaha have 28 mm carbs, Keihin for the XL, Mikuni for the XT, while the Kawasaki is fed by a 32 mm Mikuni.

"The Kawasaki feels taut, accurate and well-balanced. The Yamaha light and skittish with a self-steering tendency. The Honda climbs the best and handles tight bush best and in slippery conditions it runs away from both bikes, purely because it has the right rear wheel/tyre combination and the others don't".

All are geared primary drive, have multiplate clutches and similar ratios in the five-speed gearboxes. Speeds are also similar, and the bikes come within two kilograms of each other in weight.

The major differences come in the approach to design of the suspension and the emphasis on various areas of size, power and that nebulous but necessary "feel" which a bike imparts to each rider.

The Honda engine is the oldest, and it shows. It appears bulky and rounded in the cases; a direct contrast to the trim and compact MX influence in the Yamaha and Kawasaki. None of the bikes have the countershaft sprocket close to the swingarm pivot point. The Yamaha engine is the lightest, but only marginally.

Frame, suspension & wheels

The Kawasaki has the most conventional

frame — a full cradle with single front downtube, giant box-section swingarm and well triangulated upper section around the steering head. In terms of suspension, the KL250A3 is well set-up for general trail work. The leading axle forks include air caps for damping adjustment and rubber gaiters for protection. At the rear, the forward-mounted Kayaba gas/oil units are strong and firm.

The Honda has a near full cradle frame, but with no lower cradle, and lacks the sheer strength of the Kawasaki in the swingarm and the area from the backbone to the steering head. The round-section swingarm has long units mounted at the end of it, inclined forward at about 50 degrees to give the rear wheel a soft, but adequate amount of travel. The leading axle forks do not extend past the axle line and there is no air adjustment.

Yamaha has encapsulated its new engine in a DT-style monoshock frame, itself not a full cradle but, like the Honda, uses the engine as an integral part of frame rigidity, doing away with the lower cradle loops. The forks are leading axle and include protective rubber gaiters, but no air adjustment. The swingarm is attached to a single gas/oil monoshock unit which also has no damping adjustment.

Yamaha and Kawasaki demonstrate that a lot of thought went into their suspensions by having substantially more wheel travel than the Honda. For the KL and XT front travel is 218 mm and 220 mm respectively. The Honda has 205 mm. At the rear, the XT and KL have 200 mm, against the Honda's 135 mm.

Major differences also appear in things like approach to wheels. Honda came out with the 23-inch front and it contributed to the bike's inherent steering stability for a trail bike. The rear of the XL is a standard 18-incher. In contrast, both the Yamaha and Kawasaki have the fashionable 17-inch rear wheel and the conventional 21-inch front. Honda also introduced the world to variable-pattern tyres to replace the universals for better dirt performance and more controllable asphalt response.

In 1980 all three 250 trail bikes have these variable-pattern tyres, yet all three are from different manufacturers. The Honda has Yokohama 300×23 Y962 front and Y962 4.60×18 rear. The Yamaha, Japanese Dunlop K150 300×21 front and K150 300×21 front and K150 300×21 Trail Wing II front and 4.60×17 TW10A Trail Wing I0 at the rear.

The battle begins

We set out on this comparison aware of some very interesting facts. About 75-80 percent of trail bike use is on the road. Does this mean that real performance should be measured with more emphasis on road application? Or since everyone also wants a "good dirt bike," should assessments be more on the dirty side of things? Putting the comparison into context, severe tests of the bikes were passed up in favour of a more rounded, "real" look — the kind of riding the

bikes would see in nine-tenths of their life.

Despite their main use, the main thrust of these machines in imagery and in advertising is dirt performance. The reality is that owners live with these bikes every day, using them not as enduro mounts, but as hacks: To get to the newsagent, to pick up friends, get to the movies, get to rages, to work, to school, to visit, to outdoor functions and also to get out of the city - to explore local backroads, to play on a vacant piece of land, to play-race with mates on Sunday afternoon, to tackle the power-line hill climb.

In fact, these soft little bikes are the acknowledged stepping stones to either a true enduro bike, a modified MXer, or a proper roadster. Hence the nature of the trail bike is hard to pin down.

In trying to evaluate these general purpose bikes, so similar in many areas, we began to work out what was worth direct comparison for points and, after we had the list, what was most significant. Thirteen sections evolved, each given a maximum score, one only a perfect machine would get. The votes from the six test riders were not "first", "second" or "third" but were points from nought to five, or nought to ten depending on the section.

Design — 10 points

This area was the hardest to evaluate. The easiest and most obvious item to criticise was the inadequate rear wheel on the Yamaha and Kawasaki. While 17-inch wheels with chunky tyres do the trick on MXers and enduro bikes, the use of these on trail bikes with soft "universal"-style tyres is not warranted and this was borne out in the way the bikes performed on hillclimbs, always losing to the bigger-wheeled Honda.

Honda and Kawasaki have lock-nut and screw adjusters for the rear axle/chain while the Yamaha has the correct snail cams. The Yamaha also has the best rubber-mounted indicators, but both the Yamaha and the Kawasaki have outdated individual speedo and tachos rather than the integrated speedo unit on the Honda — do you need a tacho on a small-bore four-stroke?

Yamaha also scored by having neat dog-leg levers. The best. But it has the poorest air cleaner design, especially if brought near water. Spring pre-load is the hardest to get at on the Yamaha.

The Kawasaki is by far the most complete all-round design, with strength, rigidity, excellent air cleaner and pipe design and togetherness of all components. Kawasaki is the only one with taper roller bearings in the steering head and needle roller swingarm bearings.

The Kawasaki did fail with a plastic bash plate, but has a full cradle frame. Both the Honda and Yamaha have alloy bashplates. The points ended up close here. Kawasaki KL250A3, 7. Honda XL250SA, 6.5. Yamaha XT250G, 5.

Access & maintenance — 10 points The improved KLX engine from Kawasaki is less complex than the Honda, and with the addition of an oil filter plate in the new sidecover it was the easiest to work on, in and around. The obvious attention to long engine life, coupled with easy servicing, makes the Kawasaki a friendly buy. After all, many of the people who buy a 250 as their first bike will stretch themselves financially to get a \$1400 machine. Any additional costs are not really wanted. The Kawasaki did fall down in that the plastic toolbox hung from the rear frame tube was difficult to get to.

The Honda has the most complex engine with four valves and two exhausts. But it has proved to be a runner and a stayer. However, the cost of servicing must be higher and the parts for Hondas are generally more than for the rest, which we find hard to understand. Honda also has a tatty after-thought battery position and the pipe runs alongside the right-hand rear unit, generating more heat than one would want in the area. One that should be kept free for cooling air.

The compact, short-stroke Yamaha is carefully thought out and a neat design for servicing and for avoiding damage in spills. We would note here that Phillips-head screws are used on all three where Allenhead bolts would be far better.

Much thought has gone into all three bikes and the more we worked on them the more the similarities came to our notice.

Three scores went close again: Kawasaki, 8, Honda and Yamaha, 7 each.

On the road — 10 points

This section included comfort, suspension compliance, handling, braking and performance, plus general feel and visibility in the traffic and on the highway.

If the paved road is where the trail bike spends 80 percent of its time, then we can state that all three have better suspensions than most 250 roadsters. The longer travel and firmer damping made the humpity, bumpity Melbourne roads not only tolerable, but also took away those back-jarring jolts which most other bikes deliver.

Throughout the test we ran the rear units on the firmest spring preload (there was no damping adjustment on any of the three). The forks were left as is on the Honda and Yamaha, while the long-legged Kawasaki air forks were pumped up to 18.1 psi.

The size of the Kawasaki and its Maicolike feel on the road made it our favourite, apart from one thing - lack of engine power. This bike could do with a lot more. The Honda had the strongest engine by far, and it shows in city traffic running. The Yamaha will rev snappily and run hard to about 85 km/h, but it is small and lacks the overall stability of the two bigger machines.

Even on firm, the Yamaha suspension is soft. This may be ideal for around town, but on Melbourne's Boulevard the Kawasaki, and even the Honda, handled the whoops, bumps and curves far better. The Honda showed its ageing suspension by jarring on occasions. We could not fault the Kawasaki's ride, steering or use in town. On the open road the Yamaha and the Kawasaki needed more gear-lever work than the Honda, especially pulling up inclines.

The points went: Kawasaki, 8, Honda, 7, ° Yamaha 6.5.

Off the road — 10 points

The bikes are all suited to undulating trails, open trails and fireroads. Here the requirements are not severe enough for specialised bikes. And it is here that the useable power of the XL Honda, coupled with the self-steering characteristics of the 23-inch front wheel, almost help it stay ahead of the others.

The Kawasaki feels taut, accurate and well-balanced (a surprise package indeed) but the lack of engine power limited its ability to knock the other two off completely. The suspension is the best of the three and it offers good feedback through the steering with neat gear changes to compensate partially for the lack of power.

The Yamaha has the same dimensions as the others, with a longer wheelbase than the Honda, but it still feels small. It has the lowest seat height, the lowest ground clearance but still feels light and skittish, especially on gravel roads where it wanders and self-steers. The low seat means feet can be thrown out, necessary to maintain any deliberate direction.

On dry clay the Yamaha ran hard on the Honda and, depending on the rider, it handled ruts and thick branches well. But once

"The size of the Kawasaki and its Maico-like feel on the road made it our favourite — apart from one thing — lack of engine power. The Honda had the strongest engine by far and that shows across the board. The Yamaha will rev snappily and run hard to about 85 km/h but it lacks the overall stability of the others".

there was any degree of slickness or mud the Honda ran away, from both the new bikes. This was strictly because of the inappropriate 17-inch variable-pattern tyres on the other two. We would like to see both these bikes with an 18-inch wheel and feel sure that traction would improve vastly as a result.

The Honda doesn't steer well. The Yamaha is frightful. None of the bikes steer finely, but the Kawasaki is way ahead. None of the bikes can be pushed on rough ground without caution, although again the Kawasaki gets away here through its more predictable rear suspension. The Honda climbs the best and can handle tight bush a little better when things are wet.

Honda and Kawasaki, 8. Yamaha, 7.

Brakes — 10 points

Trail bikes, by their nature, must run the





gauntlet of heavy city traffic, highway work and handle bush use, including mud, water and dust, yet perform predictably immediately afterwards. Not an easy task.

Dual purpose bikes are light, agile and underbraked on the road. Folklore about bikes being able to outstop a car is misrepresented in most riding circles. The average rider on the average bike will not outbrake a car. Trail bikes have even less chance.

We believe braking performance is not only significant but a critical aspect on these dual-purpose machines. In overall performance the Kawasaki romped home, giving riders good sensitivity, good feedback on dirt or bitumen and stable performance throughout the test. The rear brake was hard to lock up, just as it should be. The front brake was progressive and good. The Kawasaki recorded the best stopping distance of the three.

The Honda was next, a tad iffy at times and without the smooth progression of the Kawasaki. Stopping distances reflected this.

The Yamaha was not good enough—perhaps it was just that *one* test bike and others are not the same, but we must go on what we found. The rear had the normal touchiness we have all learnt to live with on Yamahas, locking up the rear when charg-

"In terms of suspension the KL is well set up for general trail work. The leading axle forks include air caps for damping adjustment and rubber gaiters for protection. At the rear the forward-mounted Kayaba gas/oil units are strong and firm".

ing downhill or simply on wet asphalt. On the other hand, the front was spongy and was almost impossible to lock up on dry asphalt! It was not what we have come across from Yamaha.

Kawasaki, 8. Honda, 6. Yamaha, 4.

PRICE — 5 points. They're always going up and the inevitable continues to plague motorcycle buyers. The Kawasaki is the most improved of the class. It's also the cheapest — \$1399. The Honda is steady at \$1445 while the Yamaha is the top-priced unit at \$1499.

Kawasaki, 4. Honda, 3. Yamaha, 2. TOOLS & MANUAL — 5 points. All three have toolkits in plastic cases. The Kawasaki and Honda's hang off the rear upper backbone frame loop, the Yamaha is behind the sidecover. All three kits are poor quality. The manuals are basic, but with some clear

The Kawasaki, above, feels the best in trick mud and water crossings, and out of the three has the most conventional frame, left — a full cradle and giant box-section swingarm. The Honda uses the engine as a stressed integral part, while Yamaha has its monoshock.

thoughts on maintenance and servicing.

Yamaha, 3. Honda and Kawasaki, 2. WEIGHT - 5 points. Although the bikes all weight nearly the same, the balance factor, the response and the feel can affect the way the machine handles and responds in the bush. The Yamaha and Kawasaki are within half a kilo of each other at 116 and 116.5 kilograms respectively. The Honda weighs

Yamaha and Kawasaki, 4. Honda, 3. STARTING — 5 points. The Honda was always the first to start. It proved the easiest throughout the test. The Kawasaki was next, but needed more time and some technique. The Yamaha was bad most times, either hot or cold, and annoyed a couple of riders who could never master it. The automatic decompressor is not necessary on a 250, in our opinion, and made things a little difficult.

Honda, 4. Kawasaki, 3. Yamaha, 2. PERFORMANCE & ACCELERATION — 5 points. The bikes are close in performance on bitumen. The revvy Yamaha and the four-valve Honda get away quickly and stay together throughout the standing start 400 metres. The Kawasaki is behind through this distance, but when the bikes are at around 125 km/h the Kawasaki is rounding them up and heading for a top in excess of 135 km/h.

The Yamaha is a quick-revving machine with little down low whereas the Honda gets going early and has the pulling power over the Yamaha and the Kawasaki. But the snappy town performance of the Yamaha surprised us all, although there was too much gearchanging to hold it well above 6000 to get along smartly.

Honda and Yamaha, 4. Kawasaki, 3. PILLION USE - 5 points. Here the comfort factor of the Kawasaki was offset by its poor performance in traffic. The Honda had the surge and the response throughout the rev range and was the easiest all round. The Yamaha suffered with a pillion, both in performance and in its soft suspension.

Honda, 4. Kawasaki, 2.5. Yamaha, 2.

In the Real Bush — 5 points

In thick forest, enduro terrain, the three bikes show up as being non-steerers and tricky to ride at anything over a steady pace. One must concentrate hard and even then you can get into trouble. The bikes are not designed to tackle the forbidding climbs and tough trails that enduro buffs get into. But we tried, just to be sure (and had our moments!).

None of the bikes have the weight distribution or the power to lift the front wheel when needed. The riders had trouble keeping the front light enough to cross in "S" terns the many ruts and small ditches running down hills. The tangle became a tough tank-slapping ride rather than a controlled descent.

In climbs the Honda exceeded the Kawasaki and Yamaha, with both running out of traction and steam at the same time.

Among rocks the only bikes worth riding are the Kawasaki and the Honda with its big rear wheel. One factor against the Kawasaki is the lack of steering from the engine because power is not there — sometimes you cannot even break the back away because of it. The quicker-revving Yamaha can be used more on power in the lower gears.

Points went close here because, really, none of the bikes make it into the hidden forest. Honda and Kawasaki can be ridden down some frightening hills but the Yamaha, with its twitchy brakes and rear end and high centre of gravity, is a real handful.

Honda and Kawasaki, 3. Yamaha, 2.

Instincts & feel — 5 points

This is the area where a rider's instincts, personal reaction and responses were taken into account. It's called "feel" — what makes you want to buy, ride, enjoy one bike over another.

The Kawasaki was by far the most popular in terms of feel. It felt right and despite the slower engine it could leap ahead of the others in certain conditions. It steers well, has the best suspension and offers the most Maico-like response we have come across in a soft trail bike. The common-voiced thought at stops was, "Geez, if only the KL had the Honda engine". Well, if that happened we would have a real bush boomer in the 250

"The Kawasaki is by far the most complete all-round design with strength, rigidity, excellent air cleaner and pipe design and general togetherness of all components. It is also the only one with taper roller bearings in the steering head and needle roller swing-arm bearings".

class. No real riders liked the Yamaha — it was softer than the old Kawasaki. A strong engine is its good point. Yet a newcomer rode it in the city and loved it and a shorter lady rider, having just been taught on an old 125 twin roadster, thought it was okay and couldn't even tackle the Honda or Kawasaki. But "feel" coming from the riders involved went to the new KL.

Kawasaki, 4. Honda, 3. Yamaha, 2.

In conclusion

The tally then: Kawasaki, 64.5. Honda, 60.5. Yamaha, 51.5. So, despite the soft engine in the KL250A3, it still fulfilled enough functions well enough to warrant edging out the Honda. This means there is a new state of the art 250 trail bike. For Yamaha, the message is clear - the bike is not quite there, but if it is aimed at newcomers or short people then perhaps it has value.

But TWO WHEELS believes the Yamaha is not up to the other two at this stage. The Honda remains a viable bike, though, even after three years almost unchanged. And for Kawasaki, we offer congratulations with the hope a punchier version arrives soon.



The 17-inch wheel of the Yamaha, shared with the Kawasaki, and just too small for adequate grip and traction.



Kawasaki incorporates a firm and strong rear suspension with the strongest boxsection swingarm in the business.



A more conventional and workable 18-inch rear wheel on the Honda and some characteristics that help it stay ahead of the others in many situations.

Four-Stroke Shootout Specifications

HONDA XL250SA

KAWASAKI YAMAHA KL250A3 XT250G

ENGINE

Claimed power
Claimed torque
Bore × stroke
Displacement
Compression ratio
Maximum engine speed
Carburetion
Air filtration

sohc 4-valve single 15.2 kW at 7500 rpm 19.6 Nm at 6000 rpm 74 × 57.8 mm 249 cm³ 9.1 8500 Keihin 28 mm Oiled foam sohc 2-valve single 15.6 kW at 8500 rpm 19.5 Nm at 6500 rpm 70 × 64 mm 246 cm³ 8.9 9000 Mikuni 32 mm Oiled foam CDI sohc 2-valve single 16.5 kW at 8500 rpm 21.0 Nm at 7000 rpm 75 × 56.5 mm 249 cm³ 9.2 8500 Mikuni 28 mm Oiled foam CDI

TRANSMISSION

All gear primary drive. Oil bath clutch. Five-speed gearbox.

Ratios (overall) and speeds (km/h) at redline:
First
Second
Third
Fourth
Fifth
Primary reduction
Secondary reduction

 25.20 (38)
 24.80 (37)

 16.65 (60)
 16.20 (58)

 12.37 (81)
 12.20 (80)

 9.99 (108)
 9.58 (112)

 8.10 (128)
 8.27 (137)

 2.38
 3.29

 3.79
 2.86

23.74 (39) 15.12 (61) 11.32 (83) 8.98 (110) 7.37 (129) 3.13 2.87

SUSPENSION & WHEELS

Front suspension travel
Rear suspension wheel travel
Fork rake
Fork trail
Front brake diameter
Rear brake diameter
Front tyre
Rear tyre

203 mm 218 mm 130 mm 200 mm 28.5 deg 30.5 deg 131 mm 138 mm 150 mm 160 mm 130 mm 150 mm Dunlop 300 × 21 Yokohama 300 × 23 4.60×18 4.60 × 17

220 mm 200 mm 29 deg 118 mm 140 mm Bridgestone 300 × 21 4.60 × 17

DIMENSIONS

Dry weight
Seat height, bike unloaded
Wheelbase
Ground clearance
Footpeg width
Footpeg height
Fuel capacity (inc reserve)
Fork length

 118 kg
 116.5 kg

 825 mm
 863 mm

 1390 mm
 1415 mm

 240 mm
 244 mm

 508 mm
 472 mm

 295 mm
 305 mm

 9.5 litres
 9.8 litres

 838 mm
 927 mm

116 kg 815 mm 1395 mm 233 mm 490 mm 300 mm 8.0 litres 889 mm

PERFORMANCE

Standing 400 metres
Zero to 60 km/h
Zero to 100 km/h
Maximum speed
Braking from 100 km/h
Braking from 50 km/h
Street fuel consumption (average)
Dirt fuel consumption (average)

17.4 (108 km/h) 18.0 (108) 4.2 5.2 12.0 12.5 128 137 41.1 metres 38.2 metres 11.2 metres 10.5 metres 217 km/l (61 mpg) 19.6 km/l (55 mpg) 16.3 km/l (46 mpg) 14.9 km/l (41 mpg) 17.6 (110) 4.6 12.1 129 47.2 metres 12.6 metres 22.7 km/l (64 mpg) 14.9 km/l (41 mpg)

TEST MACHINES

Manufacturer
Test machine
Price

Honda Japan Honda Australia \$1445 Kawasaki Japan Kawasaki Australia \$1399 Yamaha Japan Milledge — Mr Motorcycle