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## NEWS FLASH

After four gruelling days at the Australian Enduro Championships, winner\*, John Hand really appreciated the comfort of his Lazer helmet.

*\*Provisional winner*

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**DIRT BIKE TESTS**



**HONDA XL500RC vs XT550J: Thumpers to Cape York!**

**YAMAHA XT200J vs HONDA XR200: Two-strokes beware!**

**SUZUKI DR250 and HONDA XL250R: Market leaders analysed.**

**KAWASAKI KDX175 and KLX250B2: Big Green's dirt runners.**

**YAMAHA IT250J and SUZUKI PE175: Enduro-winners both.**





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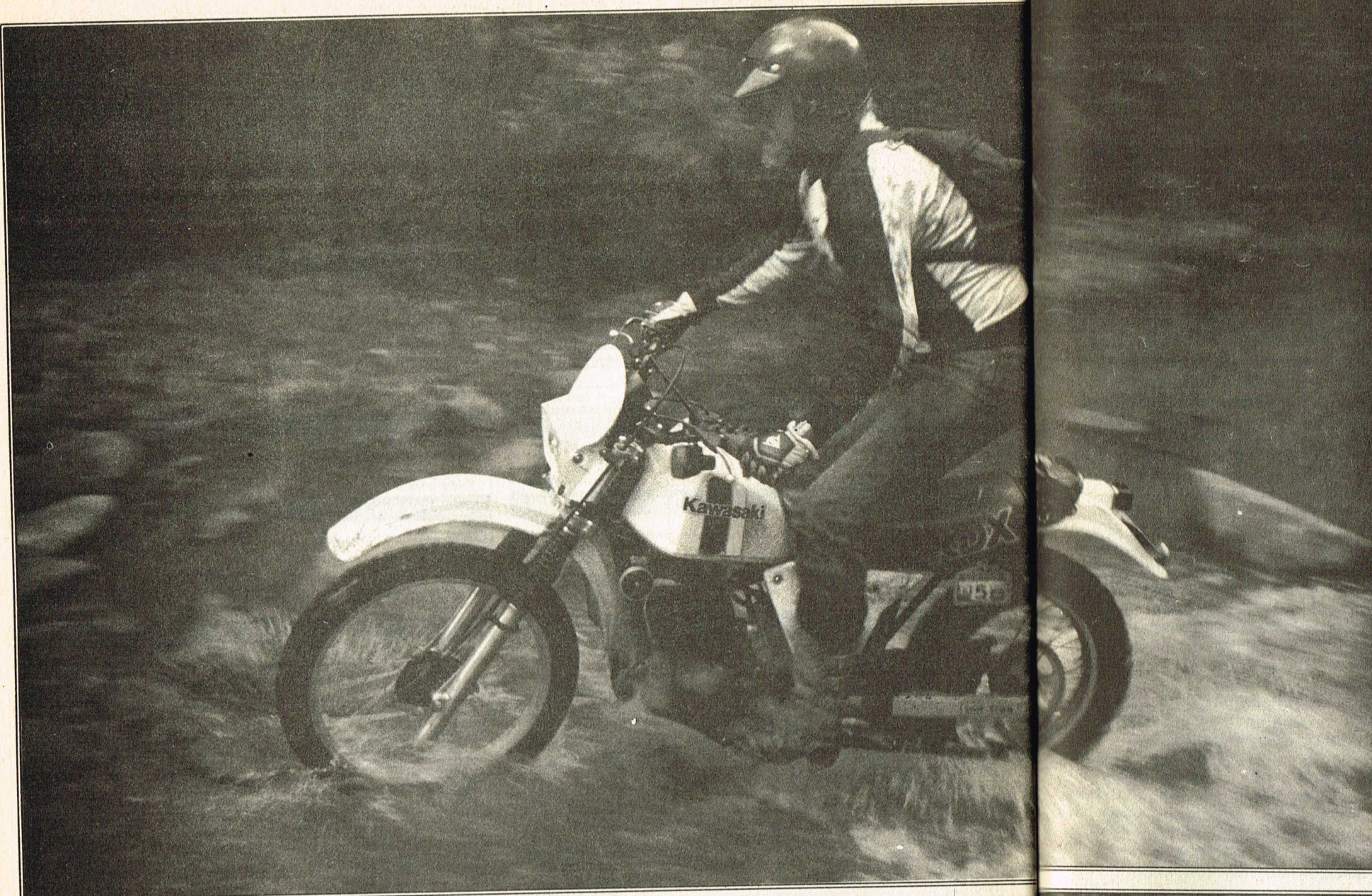
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*Bruce Allard*

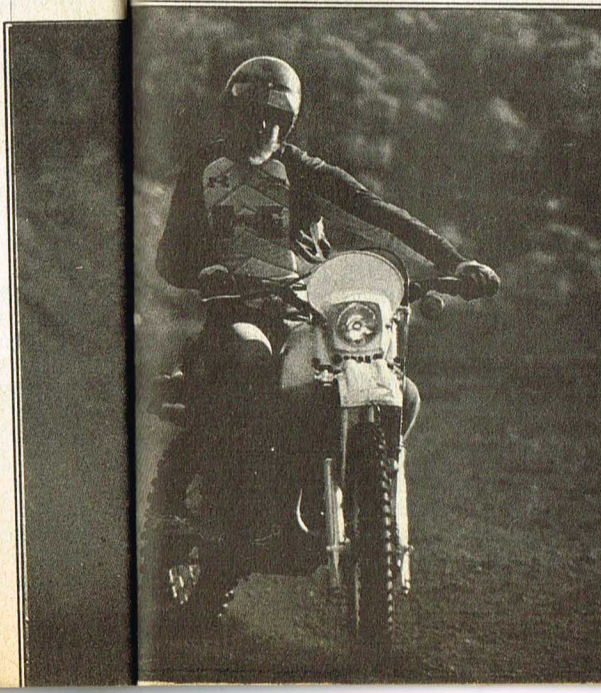
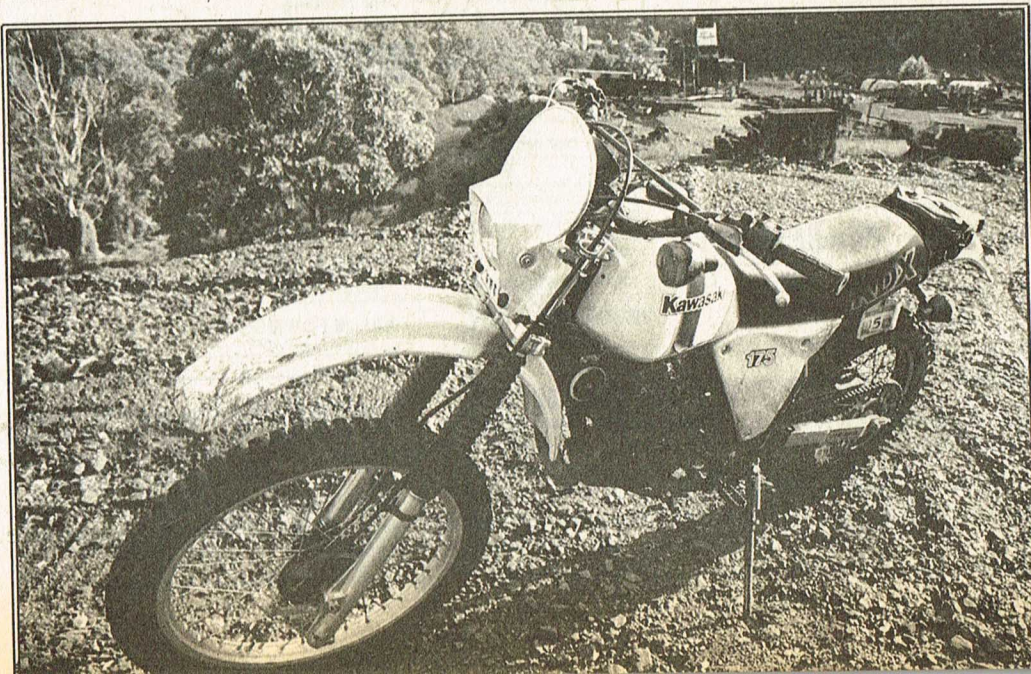
By the editors of  
TWO WHEELS Magazine.  
ARTIST — John Taylor

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Fast steering and superior rear suspension distinguish Kawasaki's new enduro model. The engine's strong mid-range tops the package. There were no water problems during testing, but the KDX's airbox could be improved.



**Y**OU gotta admit we've worked hard to keep everyone up to date with what's happening to the Green Meanies off road.

Immediately we looked at the new KDX 175B a lot of the Kawasaki test programmes — among our most fun times — came flooding back. Like the introduction of the beaut little KS 125 back in '74. For just \$645 you could buy a neat little trailster that'd stay with the best of the 175s, we said.

Out to prove it, Ray Ryan debuted the bike at Sunraysia that year, won class, and took 25th overall in a field of 155 bikes that included some real mean mutha all-out enduro stuff. Nice.

We even had a mean mutha ourselves the following year. At the BP Desert Rally Len Williamson was throwing roosters on a KX450. Then he parked it into a wire fence and took a "please excuse Len from motocross" note around with him for the rest of the season.

The KX250 has also received our scrutiny over successive models and on each occasion proved to be a well thought out, if conservative, little 'crosser.

Actually the A5 ('79) version still stands out in our memory for its exceptional flexibility when everyone else was into watchstrap width powerbands.

Naturally we haven't forgotten that Kawasaki's KL250 made it as dirt honcho of the year in '80, but 'strokers being what they are, the new enduro Kawasaki, the KDX 175B owes a lot more to the motocross range — Uni-Trak and all.

The model arrived in Australia originally in late '79, virtually a KX 125 with a larger top end and a few changes for enduro use. But no compliance plate. So IT / PE 175s continued up front in droves (actually, if you want to see how the KDX 175 compares check our PE/IT shoot-out in July '80 issue).

What happened then? Kawasaki saw the green light brother. March '80 the first batch of KDX B models arrived. Yep. Uni-Trak and ADR compliance plates. Since then they've been blending into local vegetation greenery all over the place.

And it didn't take long for the range to be increased either. KDX 125s are around using the well-known "motocross interchange" method. In this case just replace the original top end with a KX 125 piston and barrel.

Anyway, here's how we see the bike in original trim.

#### Engine and gearbox

Although basically unchanged internally since its introduction, the KDX powerplant has proved to be useful in all trail and enduro applications. Developing claimed power of 20 kW (27hp) at 9000 rpm, it lacks a little of the top-end performance displayed by the IT and PE 175s, though it more than makes up for this in superior low and midrange power — that's more useful in most enduro work.

Juice is supplied by a 34 mm Mikuni carburettor, with induction via the patented Eyvind Boyesen's reed valve. This combination works well, providing the KDX with usable "grunt" over the entire rev spectrum. Improved efficiency may be obtained by relieving the airbox of restrictions and replacing the main jet with something smaller. Our test bike ran a little rich using the standard 157.5 main jet and a 55:1 Belray MC-1 mix.

Fulfilling dual roles, the left hand sidecover forms the outer wall of the large, flat aircleaner. Since the Uni-Trak unit occupies most of the central area behind the engine, the aircleaner has to be rather shallow. It still works just as well. We found the flat oiled-foam filter easily

# KAWASAKI KDX 175

## Underdog Frog Or Green Revolution?

A new "Green Meanie" that's not so mean, but interestingly different, has just hopped into the forest foliage. CRAIG LAMBERTON investigates.



accessible and it retained a good seal. We did wonder how it would handle deep water-crossings. During our test, we found no problems, but if we owned the bike we'd certainly relocate the two lower air intakes, as well as installing a one-way drain in the bottom of the airbox.

Exhaust gases are removed into a massive chamber which occupies most of the space below the fuel tank. The pipe then passes behind the right hand sidecover and joins with the muffler. Since the high tension lead, clutch and throttle cables either touch or pass very close to the exhaust chamber, it would be in the

interests of longer cable life to insulate or re-route them away from the intense heat of the chamber.

Throughout our short test, we found the six-speed gearchange on the KDX to be both definite and smooth. Likewise, we found the clutch to be without fault.

We did induce a fracture of the internal kickstart shaft, and consequent damage to the related idler gear. We're told by Kawasaki Australia that this fault did appear in some of the early models. The factory made modifications to all later bikes and supplied parts for dealers to repair any damaged shafts under

warranty. If the warranty had expired, the situation was left to "the dealer's discretion".

The final drive on the KDX is from a 12-tooth countershaft sprocket to a 52-tooth rear sprocket via a 520 roller chain. At the rear, a hefty nylon guide positions the drive chain; up front a rubber roller and long wrap-around slider reduce wear on the swingarm. Unfortunately, Kawasaki has not used snail-cam chain tensioners on the KDX, and we found the alignment marks stamped on the rear swingarm were not equidistant from the swingarm pivot — a problem we've found on many bikes.

### Frame and suspension

The most interesting feature of the bike is the new Uni-Trak rear suspension. Although Yamaha pioneered single shock suspension design with its "monoshock" of 1973, the release of Kawasaki's Uni-Trak has rekindled interest in single shock systems.

The advantages are two-fold. Firstly, unsprung weight is reduced and the centre of gravity moved more towards the middle of the bike — making turning easier. Secondly, because of the leverage involved, the suspension can be set up to be responsive to small ripples in the riding surface, while also building up a progressive resistance to larger forces such as those experienced when landing from a jump.

You want to know more? This increase in resistance to further compression as the load increases is known as "rising rate" progressive response. Previously this rising rate was obtained by the use of dual or multiple rate springs. But everyone's been trying something more sophisticated. Suzuki and Honda use the "Full-Floater" and "Pro-Link" respectively, both with rising rate progressive response.

Contradicting earlier reports, Kawasaki had an about-face in philosophy, and the Uni-Trak design emerged with linear or slight falling rate response — that is, the resistance to compression does not increase as the upward force further increases. At present, Kawasaki is only using the Uni-Trak rear suspension on the KX motocross machines and, in Australia, on the KDX 175. We'll see it later this year on the GPz550 road bikes.

There are however, a few differences between the Uni-Trak used on the KDX and the set-up used on the KX motocross range. The swingarm on the KX machines is a solid I-beam alloy construction, whereas the KDX uses a steel box section. Also, the KX models use an aluminium-bodied shock with remote reservoir, and boast four damping settings. Although the KDX has a healthy 250 mm of rear wheel

travel, the actual distance travelled by the piston in the shock is considerably less, hence the heat build-up is reduced substantially from that in conventional dual shock designs.

Due to large forces inherent in single shock designs, pivot points and bearings are prone to fairly high wear. To its credit, Kawasaki has endowed the KDX with needle roller swingarm bearings and all manner of bushes, spherical bearings and protective rubber boots on the Uni-Trak links.

Unfortunately, the responsibility does not end there. The Uni-Trak links must be given regular maintenance with molybdenum disulphide grease and a reliable torque wrench. Failure to do this could prove not only expensive, but also something more than embarrassment.

Although the KDX does not have variable rebound dampening, an enormous range of spring preload is available from a threaded adjustment nut on the base of the shock — though Kawasaki recommend removal of the shock when making adjustments.

Countering the enormous forces of single shock designs around the suspension mounts and pivot points, the KDX has substantial gusseting around the rear backbone and swingarm pivots. Unfortunately, the price the KDX pays for this increased frame rigidity amounts to a slight weight disadvantage over its competitors — though this weight disadvantage is only apparent on paper.

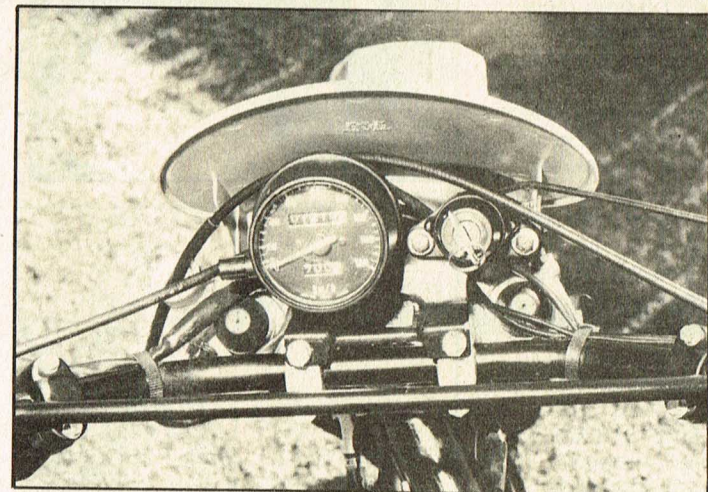
Although not as revolutionary as the Uni-Trak rear suspension, the front end on the KDX is by no means inferior. Mounted in alloy triple clamps, the Kayaba forks offer a healthy 250 mm of front wheel travel, and air assistance allows dialling in for any riding conditions.

The KDX has tapered roller steering head bearings and protective rubber gaiters to maintain the front end in good order. For you quick-change artists, Kawasaki has just fitted pulling handles on the right hand end of both front and rear axles, though the twin rear rimlocks could slow you down somewhat.

### Performance

The KDX is a good all-round machine, but the steering stands out especially. Whether on high speed gravel roads or in tighter, deep forest sections, the ease with which the KDX can be turned inspires the sort of confidence that usually only comes out of a bottle. We found the best way to get around bends was to move your weight well forward, crank the bike right over, and give it heaps!

The "steep" 28 degree fork rake and short 120 mm trail are major causes of the fast steering. Not surprisingly, the KDX did have a slight tendency to plough the front



Bare-minimum legal instruments and a "sensitive/good" front brake. What else does a bloke need? A rear stopper a little less the on/off variety, thanks.

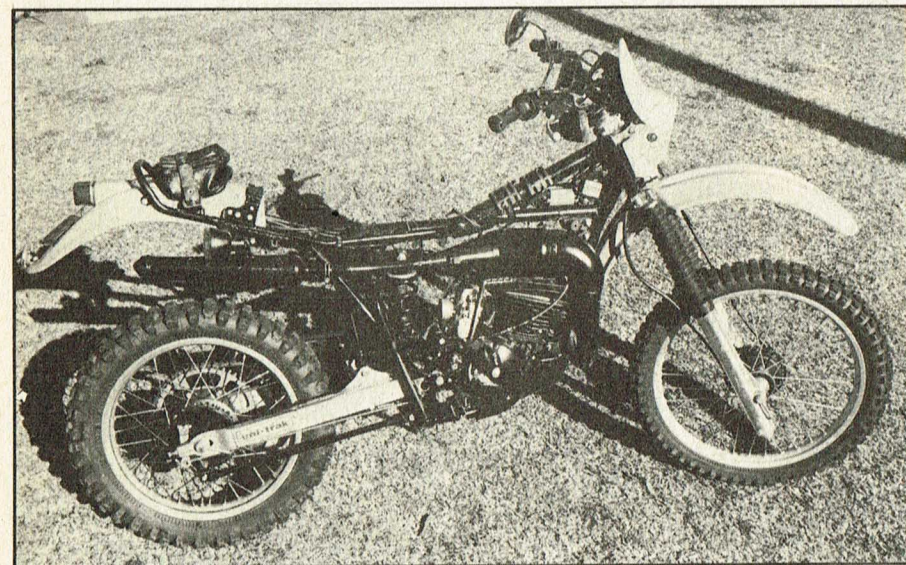
wheel through soft deep loam or sand, but once the rider was used to this habit, the problem disappeared. The KDX did not develop any noticeable downhill instability as a result of the steering geometry.

Standing the KDX in good stead for enduro "special tests" is the splendid, (and unusual!) bottom and midrange power. At TWO WHEELS, we have a sort of fetish for hill climbs. Accordingly, we have a few of our own "special test" sections against which we judge a bike's climbing ability. The KDX was as agile and sure-footed as any mountain goat, even in slippery conditions. In fact it climbed

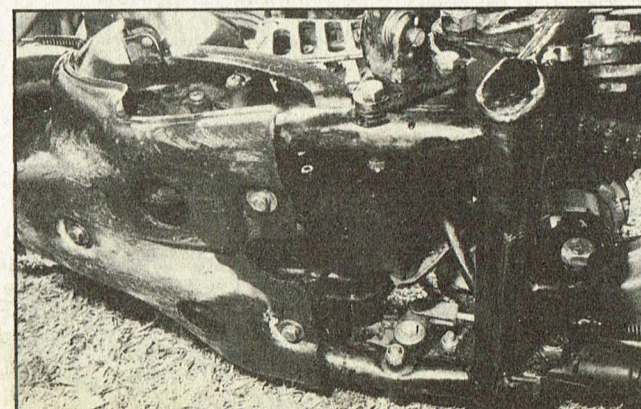
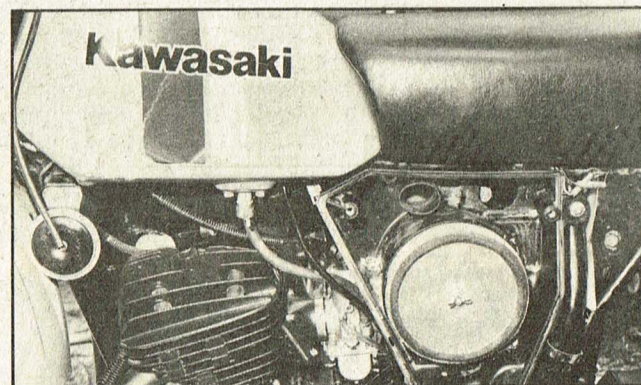
better than any bike we've previously ridden — except for specialist trials machines.

Well-spaced gearbox ratios and tremendous engine tractability permitted uphill standing starts with a minimum of drama. If you are caught in a compromising position, the handy rear grab rail makes man-handling the KDX to firmer ground easy.

With a ground clearance of some 330 mm, you could hardly describe the KDX as "low hanging", but we believe the bash plate should be extended to protect the soft underbelly of the engine.



Uni-Trak works with air-assist front end perching the Kayaba forks up on 250 mm of front wheel travel. The frame has a handy rear grab-rail and both axles have pulling handles on rhs. Aircleaner is fairly shallow due to rear suspension. You'll probably need to route the cables away from the expansion chamber too. Bashplate stopped everything we found. Gung-hos might want it bigger but it's sound enough.





As you might expect the KDX seat is tall (915 mm) by comparison with its competitors, though most riders shouldn't have too much difficulty "footing" when necessary.

Standard, the KDX comes fitted with Bridgestone rubber. While not as tenacious as Metzlers and other specialists, these tyres should satisfy most riders until they become familiar with the bike. Owners would be wise to give some thought to tyre clearances before forking out big money on wider rubber for the rear end. During our test the standard 4.00 x 18 semi-knobbie wore great chunks out of the chainguard, and in thick mud, the rear end became very congested.

The brakes on the KDX are a weird match. Going slow, or on loose surfaces, the front brake works adequately, while the rear is much too sensitive, easily locking up (shades of the old DT360). Conversely, on good surfaces the front is impotent, while the rear brake is somewhat better. Despite this mismatch, the brakes always responded when necessary. Even deep water did not dampen their spirit.

Usually, manufacturers' specifications are optimistic. For a change, we are pleased to note that Kawasaki has understated the fuel capacity of the KDX by some 10 percent. Full up, the green plastic tank holds up to 11.5 litres, more than adequate for most competition events. To our dismay, though, our test bike had no reserve.

Being primarily a competitive enduro machine, the KDX is ill at ease on the road. The headlight, brakes and rubber are unsuited to road use; nevertheless, the bike can be an occasional commuter if necessary.

Removal of the easy-to-break items, such as lights, indicators and battery takes only minutes, thanks to the well-designed mounts. Unfortunately, the wiring harness is a bit tatty, especially behind the headlight.

Although the bike's finish is initially good, the ravages of hard riding soon become apparent. Like all good enduro mounts, the KDX has a vinyl toolbag mounted atop the rear mudguard, although it's a little light on for tools. The excellent owners' manual supplied with the bike takes the form of a reduced workshop manual, detailing all major mechanical features. We hope to see this sort of manual appearing with all bikes some day.

### Conclusions

We're impressed with the KDX, both as a competitive enduro mount and as a serious trail bike for enthusiasts. What the KDX powerplant may lack in top end

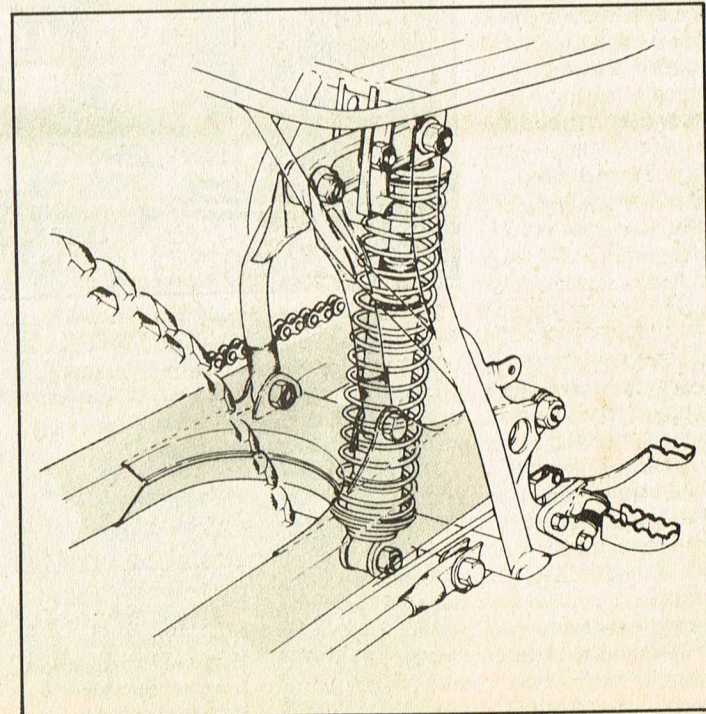
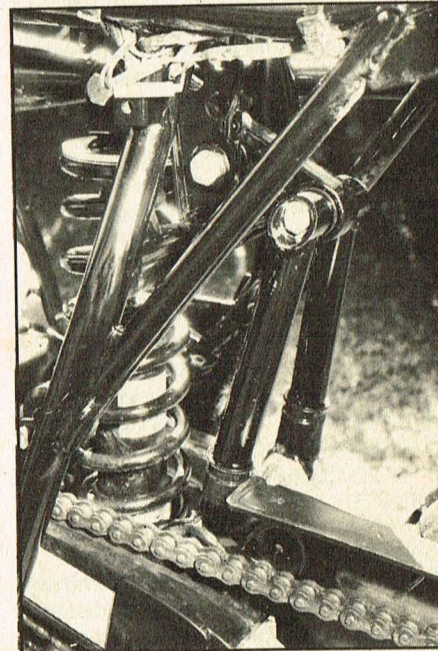
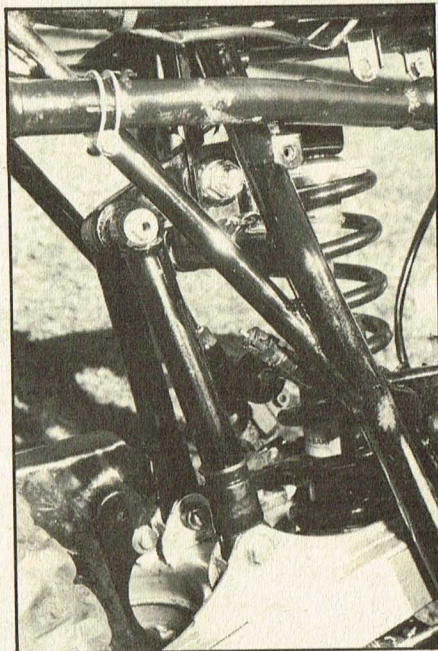
performance is more than compensated for by the superb low and midrange power, a more useful feature in most enduro situations. Throughout our test, the KDX was reliable and easy to start.

Offering a compromise between feel over small surface irregularities and the resistance necessary to withstand cross-country riding, the Uni-Trak rear suspension does, indeed, give the KDX a distinct advantage over the current IT and PE175s. We believe the combination of excellent steering and superior rear suspension make the KDX one of the best-handling bikes we have ridden. We

can only speculate that with a rising rate action, the Uni-Trak suspension would be even better.

During the period of our test, the NSW recommended retail price for the KDX was \$1399 — quite a bargain, some \$50-\$100 less than that recommended for the latest IT and PE175s. Seemingly in response to this stiff competition, local dealers have been offering ITs and PEs for substantially reduced prices.

It would seem that we have a buyers' market, open to price negotiation in the buyer's favour. Go out and deal!



*We only did this so you'd understand the intricacies of Uni-Trak. Regardless of what you've been told, it ain't exactly the MX school. The diagram is shaded to show the link arms to the rear fork, and it all works to give the KDX better performance than anything conventional. Frame rigidity demands are obvious and set-up requires regular lubes. Chain has hefty nylon guide and long, wrap-around slider.*

# Kawasaki KDX 175

## ENGINE

Single cylinder, air-cooled, two-stroke. Piston port controlled, reed valve induction. Alloy radial-fin head and cylinder with pressed-in steel liner. Pressed and pinned full circle flywheel crank, supported by two ball bearing mains. Caged needle roller big and little end.

Claimed power ..... 20.1 kW at 9000 rpm  
 Claimed torque ..... 22 Nm at 8500 rpm  
 Bore x stroke ..... 66 x 50.6 mm  
 Displacement ..... 173 cm<sup>3</sup>  
 Compression ratio ..... 7.6:1  
 Carburetion ..... Mikuni VM34SS  
 Air filter ..... Oiled foam  
 Ignition ..... Electronic capacitive discharge  
 Lubrication ..... Pre-mix

## TRANSMISSION

Straight cut primary gear drive to 11-plate wet clutch and six speed gearbox. Final drive .520 roller chain.  
 Ratios (overall)

First ..... 34.94:1  
 Second ..... 21.95:1  
 Third ..... 16.76:1  
 Fourth ..... 13.51:1  
 Fifth ..... 11.30:1  
 Sixth ..... 9.74:1  
 Primary reduction: ..... 3.00 (29/23)  
 Secondary reduction: ..... 4.33 (52/12)

## FRAME

Tubular welded steel, full cradle, single upper backbone and front downtube with double lower cradle. Box section, steel swingarm supported by needle roller bearings.

## FRONT SUSPENSION

Leading axle telescopic forks, two-way hydraulic oil damping with single rate internal springs with air assistance.

## REAR SUSPENSION

"Uni-Trak" single gas oil damper unit with falling rate spring action. Preload is adjustable over a wide range, no damping rate adjustment.  
 Front suspension travel ..... 250 mm  
 Rear suspension travel ..... 250 mm  
 Fork rake ..... 28 degrees  
 Fork trail ..... 120 mm  
 Front brake ..... 120 mm sls  
 Rear brake ..... 130 mm sls  
 Front wheel ..... 21 in. DID alloy  
 Rear wheel ..... 18 in. DID alloy  
 Front tyre ..... 3.00 x 21 Bridgestone M27  
 Rear tyre ..... 4.00 x 18 Bridgestone M22

## DIMENSIONS

Dry weight ..... 103 kg  
 Seat height (bike unladen) ..... 915 mm  
 Wheelbase ..... 1460 mm  
 Ground clearance ..... 330 mm  
 Footpeg height ..... 365 mm  
 Fuel capacity (incl. reserve) ..... 11.5 litres (no reserve)

## EQUIPMENT

Footpegs ..... Folding, cleated  
 Controls ..... Straight alloy  
 Kill button ..... Yes  
 Guards ..... Green plastic  
 Tank ..... Green plastic  
 Toolkit ..... Just  
 Throttle ..... Quarter turn QA

# SUMMARY

	Poor	Below Average	Average	Above Average	Outstanding
<b>RATINGS</b>					
<b>ENGINE</b>					
Responsiveness				●	
Smoothness			●		
Low rev power				●	
Midrange power					●
Top end power			●		
Starting				●	
Quietness			●		
<b>TRANSMISSION</b>					
Clutch				●	
Gearbox operation			●		
Ratio suitability				●	
<b>SUSPENSION</b>					
Front travel				●	
Rear travel				●	
Front operation			●		
Rear operation					●
Front/Rear match				●	
<b>RIDING</b>					
Steering — soft ground tracks					●
Steering — hard ground tracks					●
Brakes overall		●			
Ability to slide				●	
Stability on jumps				●	
Stability and predictability overall				●	
Slow, tight radius turns					●
Medium, variable radius turns					●
Fast, wide radius turns					●
Off-camber turns					●
Ease of riding in mud conditions		●			
In sand conditions				●	
Manoeuvrability overall				●	
Ability to forgive rider error				●	
Starts/race to first turn				●	
Cross-country racing use				●	
<b>GENERAL</b>					
Riding position				●	
Seat comfort				●	
Ride comfort				●	
Tyres		●			
Location of controls				●	
Quality of finish				●	
Mechanical access		●			
Overall design					●
<b>VALUE FOR MONEY</b>					
					●

## TEST MACHINE

Manufacturer ..... Kawasaki Heavy Industries, Japan  
 Test machine ..... Kawasaki Australia, Alexandria, NSW  
 Price ..... \$1399 (NSW)

**Best points:** Excellent low and midrange power for a 175 two-stroke. Superb fast steering, good turning ability. Competitive front and rear suspension.  
**Worst Points:** Mismatched brakes, impotent front brake. Rear wheel becomes clogged up in deep mud conditions. Standard tyres not up to performance of bike. Weak kickstart mechanism in early models.