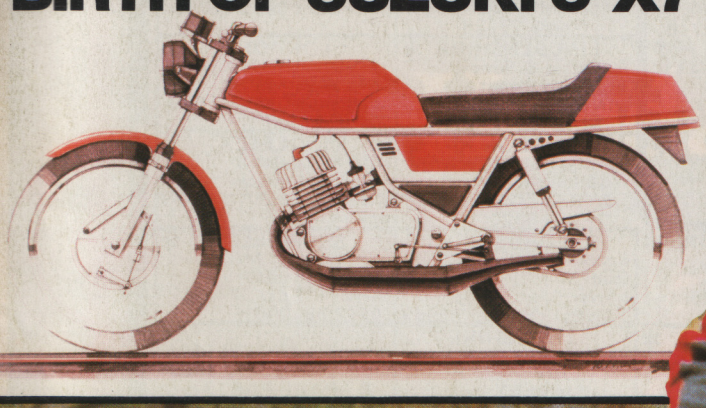
MOTOR CYCLE MECHANICS

SEPTEMBER 1978 50p

WIN a new Yamaha DT175MX details inside

BIRTH OF SUZUKI'S X7



TESTS
-Yamaha DT175MX
Suzuki GS400C
and SP370

RECONDITIONING
-save money on worn engines

WELSH 2-DAY
-trials and technicalities

Win YAMAHA'S DT 175 MX

A **Monoshock rear suspension**

B **High ground clearance**

C **Snail cam chain adjusters and chain tensioner**

D **Redesigned engine**

E **Deep padded seat**

F **Full road equipment with well-protected indicator lamps**

G **Wide spread of torque**

H **Six speed gearbox**

I **QD rear wheel**

J **Plastic mudguards**

Rules

All you have to do is study the list of ten features and place them on the coupon in what you think is their order of importance. If, for instance, you think that point F is most important, put F opposite number 1 in the first column. Complete each column in this manner, until you have completed the numbers of columns your stake allows. Entries can only be accepted on the printed coupon, but there is no limit to the number of coupons you can enter. The winner will be the competitor who, in the editor's opinion, has submitted the most correct entry. In the event of a tie, the first correct coupon opened will be the winner. Fill in your name and address on each coupon (in block letters) and send your entries to: Yamaha Competition, Motor Cycle Mechanics, Park House, 117 Park Road, Peterborough PE1 2TS. Entries must arrive by September 22, and the result will be published in our November issue. Payments by cheque or postal order only, postage stamps are not acceptable. All cheques and postal orders should be made payable to Motor Cycle Mechanics and crossed.

Employees of E.M.A.P. and their relatives are not eligible to enter this competition.

25p (3 lines) **50p** (8 lines) **75p** (14 lines) **£1.00** (20 lines)

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MCM Road Test

Yamaha DT175MX

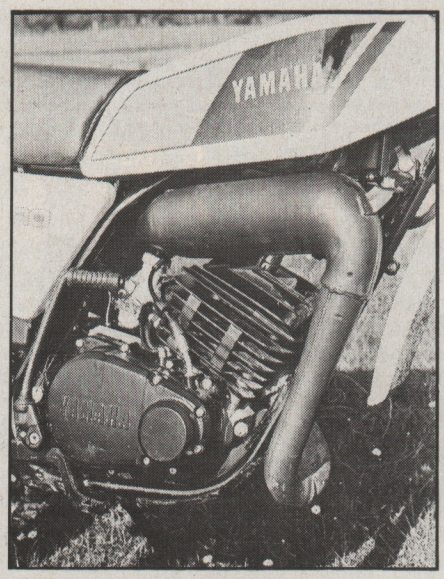
People who know about trail bikes are buying the new Yamaha DT175MX. Its DT predecessor bore the connotation "Enduro" on the sidepanels. So does this one. Only it means it a lot more seriously.

A complete and utter revamp the DT175MX owes much of its heritage to Yamaha's lightweight YZ scrambles range. The result is a fabulous off-road mount which can make the novice feel at home on the rough and is good enough to score a gold medal in the Welsh Two Day Trial. London dealer Dave Rayner proved it.

Just looking at the new bike tells you it has purpose in its design. The seat height is tall for a 175. It has to be because of the long travel suspension which gives just over seven inches at the forks and 5¾in rear wheel travel.

Also immediately noticeable is the generous ground clearance of a shade under 10½in.

Yamaha DT175MX



Top: The 171cc powerplant wore the spark plug centre electrode down quite rapidly. Carrying a spare was a necessary precaution.

Above: A great little bike in the handling and suspension department the DT175 allows the inexperienced rider to become adventurous off-road.

The fuel tank has a screw-on cap so that it stays on the tank, and rubber tube breather to prevent petrol loss.

The forks feature protective gaiters. The rear indicators are flexible. At the front they are mounted within the braced area of the handlebars to obviate crash damage.

The swinging arm carries a chain guide, tensioner and plastic bush at the pivot area to prevent the chain from scoring marks into the metal. Chain adjustment is by snail cams. The front and rear steel rims each have a security bolt to halt tyre creep. The headlight has a chrome guard. The throttle cable is routed skywards to keep it tucked neatly out of the way. The engine, tastefully finished in silk black, had a radially finned head for good heat dissipation with rubber inserts to cut down on noise resonance. The exhaust routes neatly out of the way and the overall appearance is sharp and functional.

It looks a winner before you even sit on it. But before you get that far a couple of items make one ponder with slightly less enthusiasm.

The engine covers are held by Phillips screws instead of Allen screws usually found on Yamahas. That headlight grille is rather flimsy, the frame welding looks unattractive and the choice of white is rather suspect. Once the plastic guards and sidepanels have been scuffed and scarred dirt seems to get ingrained and white shows it up to its best, or worst, advantage. These are observations, not criticisms.

Sitting on the bike confirms its competition looks. The seat is deep and firm. It comes with a strap as standard, but is better without it to allow the rider to shift his position without snagging. A bird's eye view reveals that only the black handlebars stick out. The high riding position makes the bike feel more like a 250, or bigger. It all spells out an invitation to the rough.

The reed valve engine accompanied by a whiff of blue smoke from the spark arrester sounds crisp. First gear engages with a slight clunk and the front wheel hovers slightly if a fistful of throttle accompanies engaging the clutch.

Changing up through the close ratio six speed box seems to need only as many seconds to execute. The suspension feels soft. When the front brake is pulled on not only do the forks dive, the tail end lifts as the De Carbon monoshock spring expands. These are the initial impressions gained from a first encounter with the new model.

The first job with the bike was to put it through its tarmac paces at the test track. With 750 miles on the clock it pulled 72.5mph with the rev counter needle just into the red zone which starts at 8,000rpm. Trying a run sitting upright, because that is how most of these will be ridden, knocked only 2mph off the top end.

Checking the speedometer proved that it was remarkably accurate with a spot on reading at 30mph. At 60mph indicated it was doing 59, and at 70 indicated 68.5. In addition the trip meter can be reset by one-tenth of a mile increments, an important point for enduro riders. The rev counter was checked later in the test and proved to be approximately 200rpm fast throughout the range.

After the test track session the bike was ridden on a 100-mile road route. It felt as light as puff pastry. Everything about it had a light easily manageable feel. Only the gearbox required more than an automatic reaction. The ratios could be selected with or

without the clutch, but sometimes firm pressure was needed on the lever to make the selection work.

Obviously for road work the range of the 1½ gallon tank is limited. This ride yielded 67mpg, the best of the test and more than I expected. Later I rode a tankful not exceeding 55mph and this gave the next best figure of 66. The range to reserve on the road was always over 76 miles.

The riding position was comfortable though the firm seat did feel a little hard after 30 miles or so. It is obviously designed to cushion the rider when off-road and therefore has to be firm.

Cruising at between 50 and 60mph seemed happiest for the willing two-stroke and surprisingly sixth gear could pull well from 20mph. I had expected the motor to be less flexible.

The power band defined itself between 5,500 and 7,500rpm. Yet below that figure in each gear there was good pulling power which proved to be invaluable when later fighting for grip in muddy off-road situations.

Vibration was apparent though not disturbing. The Yokohama trail tyres on the road felt as good as any other trail tyres and the brakes were progressive and efficient.

Obviously not designed as a two-up machine the bike can be used for occasional two-up use. The pillion just has to put up with a shortage of seat space and footrests mounted on the swinging arm.

The bike's six volt battery powers its parking lights and indicators. Main and dip beams are direct but retain constant intensity until the revs are dropped to tickover. Illumination is adequate.

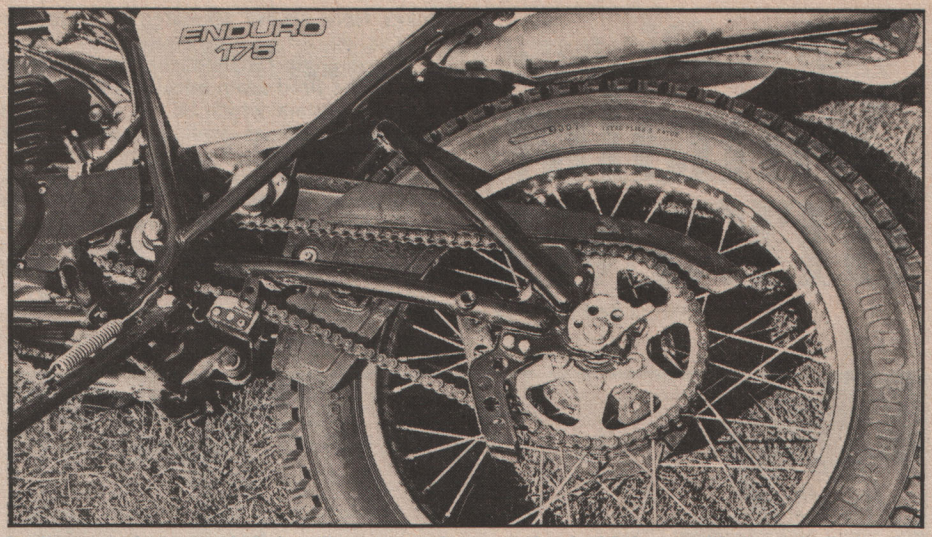
To replenish the automatic lubrication system the left sidepanel has to be pulled off and a wing nut undone which allows the plastic oil container to swing out. On Yamaha's RS125 road bike the container swings well clear for easy refilling. On the DT it can only be pulled an inch or two from its normal position making it impossible to get every last drop out of the half litre bottles sold on garage forecourts.

To start the bike the cold start button on the side of the 24mm carburetter has to be pulled out. The instant the engine fires the button can be pushed home. The engine always felt that little bit sharper first thing in the morning. Once it was warm the crisp edge seemed to fade slightly, though it was barely perceptible.

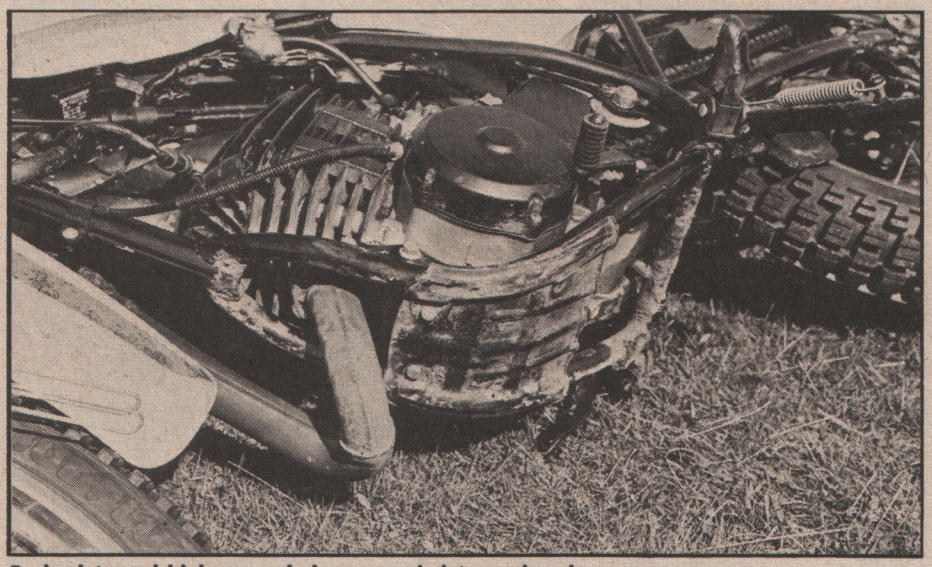
Since the bike has such sporting intentions it was decided to enter it in a practice enduro event run by the North Cheshire Trail Bike Club.

Preparing the bike involved removing various parts such as indicators, rear footrests, rev counter and rear view mirror. Since the event was run entirely on private land I was also allowed to remove the rear light and number plate. Fitting different tyres was the next job since the Yokohama's knobs did not look as if they would give sufficient grip, particularly if the going was muddy. Avon agreed to supply a pair of Mudplugger trials tyres via the Kettering, Northants depot of the Central Tyre Company. These covers reputedly can be run down to 2psi.

Going up from a 3.50 to a 4.00 × 18 rear tyre showed there was just enough clearance between the tyre and subframe. But for owners who wish to fit scramble tyres I would say that a 4.00 section would definitely foul, though a low profile cover may just clear. One point discovered after the event was that a screw holding the chain guard had cut a small groove in one run of the tyre knobs. A trial run a day before the event had not revealed this. Hacksawing the screw flush with the plastic guard would have been the obvious solution.



Snail cams take care of chain adjustment. The rear wheel withdraws with the spindle in place. The vertical pins at the end of the swinging arm have to be removed first.

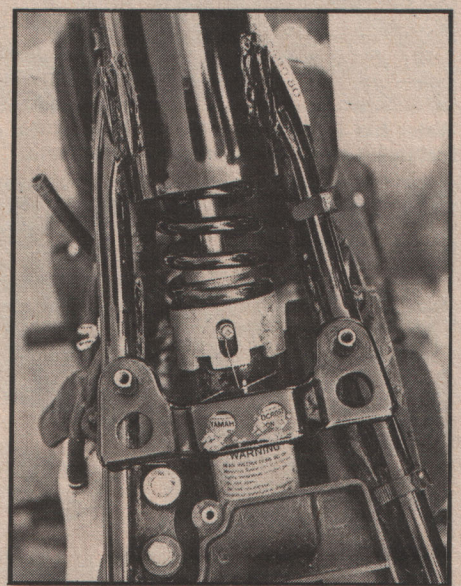


Bash plate and high ground clearance obviate engine damage.

Fine weather greeted the event which turned out to be over 42 miles during which the bike returned 32mpg, the lowest figure of the test. Only the bottom four ratios were used and because the going for the most part was dry the acceleration was used to the full. I once had a pre-monoshock DT250 Yamaha down to 25mpg so 32 does not sound quite so bad in that context.

Using the bike hard immediately showed up points which had not materialised on the road. Under heavy braking the front forks could be completely compressed to hit the inside of the mudguard. There was never any metallic clunk to say the forks had actually bottomed. But if the bike were mine I would experiment with different fork oil to give slightly tauter damping.

With the front brake on and weight transferred forward the rear wheel was easy to lock up. The rear brakes on Yamaha dirt



The cantilever suspension unit. Adjustment is by the castellated collar in 180 degree steps. The Phillips screw acts as a stopper.

Yamaha DT175MX

bikes have always appeared to have this trait.

If the engine stalled the motor could quickly be fired again because of the primary kick system which allows restarting in any gear. Just as well because finding neutral could be quite difficult.

Using the gearbox hard for downchanges without the clutch could result in a smooth noiseless change only if the revs were right. Several times while attempting to change up from second to third the selection baulked and a fresh burst of speed was necessary in second before going for third again.

Having thought the power to be quite fair on the road there seemed to be a definite lack of it in competition. This was highlighted in the ratio jump from second to third. The specification chart shows this to be the biggest ratio span apart from first to second. On the road it was unnoticed. On a modest gradient in the event the difference was too much. Either the motor was pushed right through second to the point where the power dived dramatically, as the bhp graph illustrates, or third gear had to be selected and it was a matter of waiting for the revs to build up.

Handling was first class. The amount of compliant suspension gave an excellent ride accompanied by the hiss of expelled air each time the gaitered forks were compressed.

The rear monoshock is adjustable to seven positions. From the word go it felt right for my ten stones of person and riding gear so I never adjusted it. A heavier person would obviously need more preload.

To make adjustments it is necessary to remove the two bolts which hold the seat, adjust the suspension, bolt the seat back on and try it again.

Removing the lightweight seat, which also forms a section of the rear mudguarding, to examine the nitrogen/oil monoshock I found that only slight thumb pressure on the frame was necessary to make the spring move. It was smooth, well damped and most impressive.

The suspension, although on the soft side always allowed the rider to feel in contact with the ground. When the back wheel did break traction on a corner it drifted in a controllable manner and the bike always felt stable. Gripping the tank with the knees tightened up this stable feeling even more.

A key factor to the overall feel is the lightness of the machine. I was out of condition for the event yet the bike was so easy to handle and all the controls so light that it was not physically taxing. Only towards the end of the event did the throttle become slightly harder to operate due to tiring hand muscles.

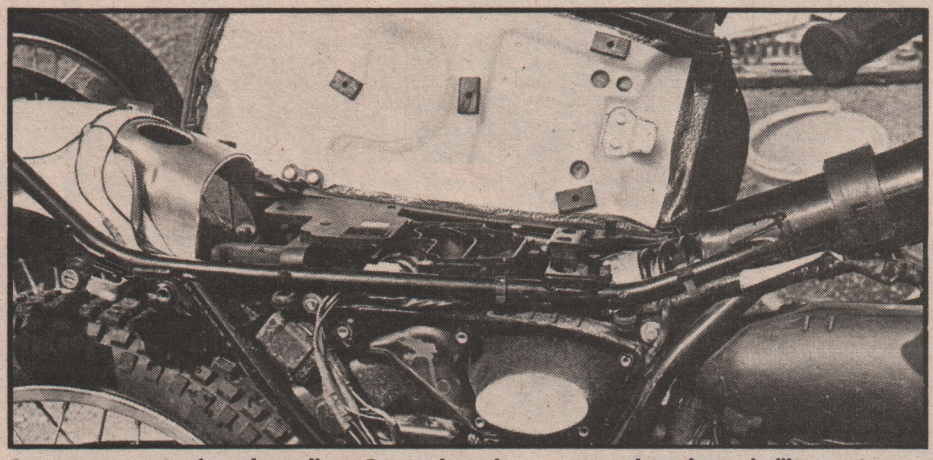
I came away from the event thinking that if I owned such a machine the first thing I would do would be to tune it for more power. The rest could be left.

But for ordinary trail riding there is no need. Later the bike was taken to the Warley Sports Centre in Warley, Essex where the Essex Enduro Club hold events. Their practice ground was muddy from heavy rain. The standard tyres had been put back on and were quick to clog with mud. The problem in this situation was grip, not power. As mentioned earlier the soft power below the power band was a definite advantage for finding traction.

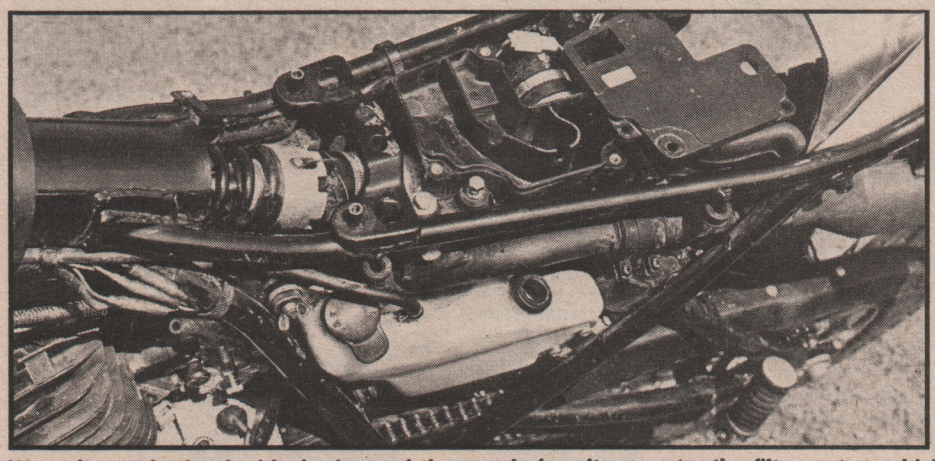
Sliding off and stalling in these conditions proved the worth of the flexible indicators and neat profile of the machine. Nothing stuck out and nothing got caught or damaged.

But by now some signs of use were evident. One of the "Enduro 175" transfers had come off a sidepanel and the kickstarter needed to be greased at its swivel point. The chain did not need tightening thanks to the tensioner, though frequent lubrication was obviously necessary.

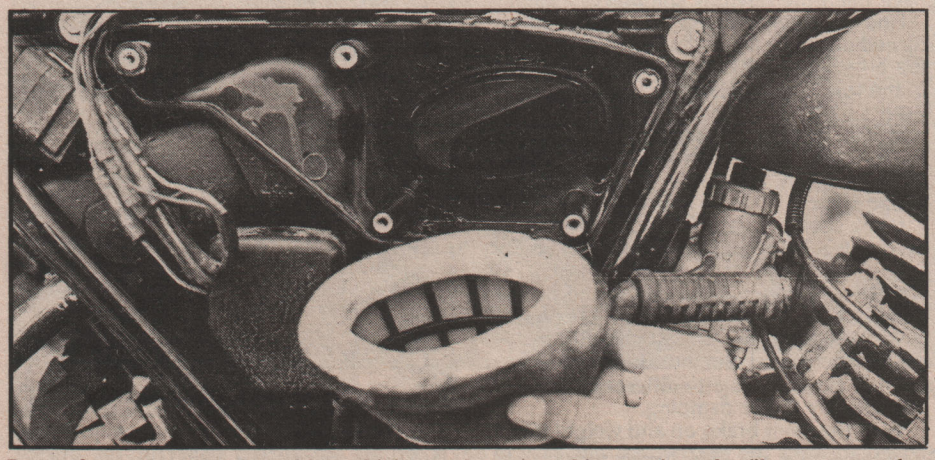
When the quickly detachable rear wheel had to come out for tyre changes it was a matter of undoing the brake rod wing nut, loosening the spindle and removing two vertical pins at the ends of the swinging



Seats act as part of mudguarding. Covers have been removed to show air filter system.



Water has to be level with the base of the seat before it can enter the filter system which features a small air reservoir compartment.



Foam element prevents anything which may have found its way into the filter passages from getting into the carburetter.

arm. With the chain taken off the sprocket the wheel complete with spindle could be withdrawn. The worst problem is balancing the bike which does not have a mainstand. When refitting the wheel putting the split pins back into the vertical pins is a fiddle.

As bonus concessions for road use the bike features a helmet lock and the front brake operates the brake light. The instruments feature a neutral warning light and red oil warning light which also comes on when the engine is in neutral. There is still a generous supply of oil when the light begins to flicker. The toolkit is partly covered by the right panel. Getting all the tools back inside their small plastic compartment is almost impossible.

The frame design is based on the 1977 YZ125 moto crosser. For riders who want to experiment more than with the mono-shock's seven preload positions the heavier spring from the DT250 and 400 models will fit.

CDI ignition is employed to fire the offset combustion chamber. The head is fixed to the barrel by six studs while the barrel is held to the crankcase by four studs. Again this method has been proved on the YZ model and is said to prevent heat deformation.

An interesting point is that the left engine side case and the oil pump cover are made of plastic and not aluminium to save even more weight.

The method of clutch adjustment and gear selection is copied from last year's YZ125. There are a host of other smaller improvements over the previous DT model such as an aluminium top fork yoke instead of steel, bigger capacity battery and a leaf ring on the throttle to make it smoother.

It all adds up to a small white charger with enough enthusiasm to charm you away from the street to explore our ancient roads, your riding ability, and its perfection. ■

Performance & specification

ENGINE
Single cylinder seven port air cooled two-stroke with reed valve induction and 24mm Mikuni slide carburetter. Capacitor discharge ignition powered by flywheel magneto. Battery: 6 volt 6Ah. Headlight bulb 35/35W.

displacement	171cc
bore x stroke	66 x 50mm
compression ratio	6.8:1
claimed output	15bhp at 7,000rpm

TRANSMISSION:
gear primary drive to six speed gearbox via wet multiplate clutch. Final drive by chain.

primary reduction	3.227
final reduction	3.267

gearbox ratios: 3.500, 2.214, 1.556, 1.190, 0.957 and 0.800

CHASSIS:
Single downtube frame with cantilever rear suspension featuring seven adjustments for spring pre-load.

front tyre	2.75 x 21 Yokohama
rear tyre	3.50 x 18 Yokohama
wheelbase	53.1in
overall length	81.9in
overall width	33.7in
castor	60deg
trail	5in
claimed dry weight	216lb
fuel tank capacity	1.5gal
oil tank capacity	1.8pints

PARTS PRICES inc VAT

	£
handlebar	5.46
front mudguard	7.57
speedometer cable	2.82
exhaust system complete	34.34
piston	9.09
ring set	9.09
ring set	4.94
list price	570.00
delivery	10.80
warranty	6 months or 10,000 miles parts and labour

Importer: Mitsui Ltd, Oakcroft Road, Chessington Trading Estate, Chessington, Surrey KT9 1SA.

MAX SPEED	SS¼-mile	MAX SPEED IN GEARS (computed at indicated 8,000rpm redline)					
		first	second	third	fourth	fifth	sixth
72.5mph	17.3	14	25.5	37.5	48.5	59	72

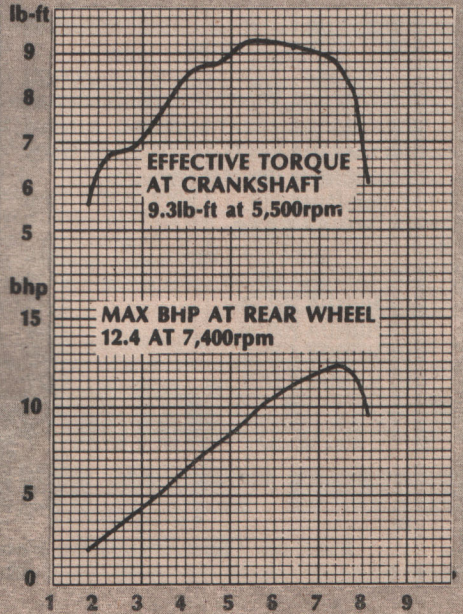
FUEL CONSUMPTION					OIL USED	BRAKES from 30mph
BEST	WORST	AVERAGE	RANGE TO RESERVE	RESERVE CAPACITY		
67	32	56	76-86 road use only	3-6 miles	405 miles per litre	28ft

Track conditions: Dry track, no wind. Ambient temperature 60deg F.

HOW IT COMPARES

Model	Price £	Max speed	Av mpg	SS¼	bhp+
Yamaha DT175MX	570	72.5	56	17.3	12.4
Kawasaki KL250	699	80	63	18	16.6
CZ 175	292	69	66	20	11
Harley-Davidson SX125	577	64.5	63	20.4	11.2
Honda CB200	575	83	68	18.8	—

+ measured at rear wheel on Heenan Froude DPX3 dynamometer



All tests run on a Heenan Froude DPX3 chassis dynamometer operated by Lincs Engine Development, School Lane, Baston, Lincs.