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DT-3

MX

More and more improvements each year. Yamaha isn't sitting still and is making European manufacturers look as if *they* are.

■ The Yamaha International V.P., Terry Tiernan, at the District Managers meeting in Los Angeles, informed his men, prior to the introduction of the 1972 line, that Yamaha intended to overtake and surpass European motocross manufacturers.

"Yamaha's sights are aimed directly at producing a machine capable of winning a World Class or Trans-Am championship," Tiernan declared.

The 1972 motocross machines of Yamaha and their track records stand as a tribute to Terry Tiernan's effort, but the best is still to come in 1973. We had a unique preview of the DT-3MX back in August. We were astounded.

The technical advice given Yamaha by a variety of European and American motocross greats, the know-how of Japanese manufacturers, and Tiernan's diplomacy will give Husqvarna, CZ, Maico and the rest something to rap about in 1973.

From a technical standpoint the DT-3MX differs almost entirely from its predecessor. Again the basic color is silver, with yellow and black striping on the tank and fenders.

But the tank bulges, sausage-like, having a larger fuel capacity, 2.1 gallons. It tapers sufficiently where it joins the front portion of the seat, giving the rider a more secure feel of the bike in both a sitting and standing position with knees tucked in.

A tape measure is needed to discern



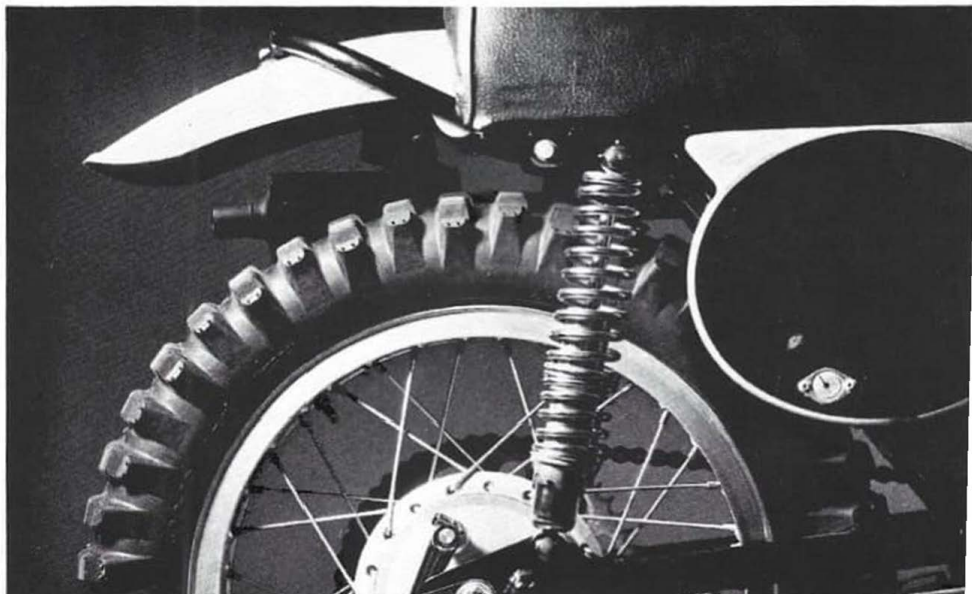
One of the first things that strikes the eye is the new, lower engine placement and the new up-and-across expansion chamber.

Both front and rear brakes are conical in design and are made of a light alloy. Still, they're not the lightest to be found but they work very well. Fenders are a flexible plastic.

the additional foam rubber cushioning Yamaha has added to their seats. The narrow front portion has a full 4 inches of padding, and the vinyl covering stretches 22 inches back to the rear fender. At that point the padding increases to 6 inches. Fanny fatiguers take note.

The increased saddle size is compensated for by a lower ground clearance. The double-down tube cradle frame is 1 1/4 inches lower than last year, making the saddle height only 32 inches above ground. That's low, for sure. We quickly became aware that the modifications done to the 1972 MX for 1973 are not drastic; the changes simply involve a 1/2 inch here, a degree of rake there. Carving a masterpiece? Could be.

New are the throttle and clutch cables, which have stronger vinyl sheathing. Cable guides are used for direction and support. The clutch and oil injection cables have spring coil heat shields and are secured to each of the frame's forward down tubes. The splayed portion of the throttle cable leading to the carburetor is strapped to the backbone of the frame. Yamaha's added detail



here eliminates haphazard cable direction and ensures more durability.

Beginning with the 1972 250MX, Yamaha employed the 1/4 turn or quick throttle mounted on the all-too-narrow 34-inch handlebars. The DT-3MX is no different. The clutch and front brake

levers are noted strong points of the handlebar accoutrements. They are made of sturdy aluminum which is hard to break in get-offs.

The kill button is mounted tight against the left handlebar grip, a stretch of a thumb away when needed.

1973 DT-3 MX

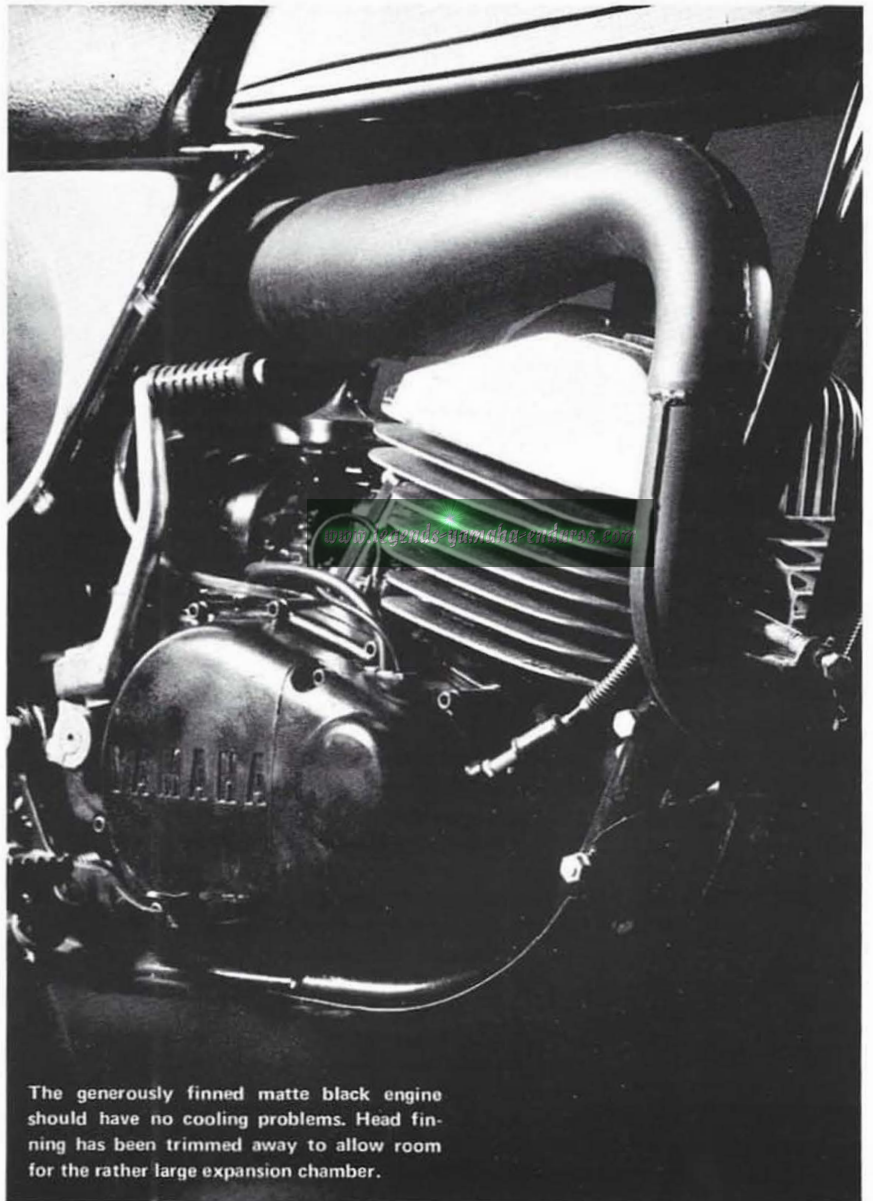
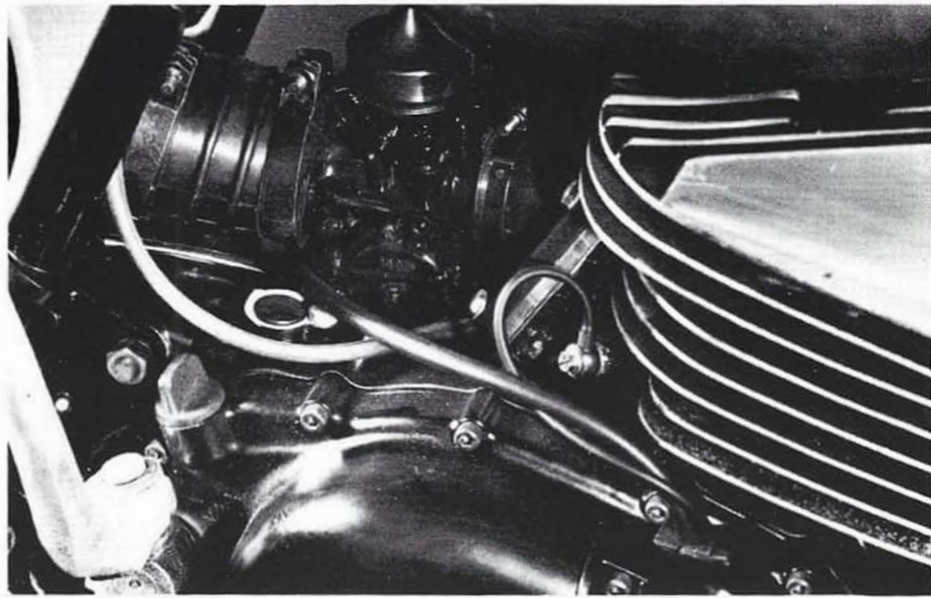
To obtain a proper impression of the DT-3MX power plant and suspension, eyeballing the unit would not suffice. We were further hampered by Yamaha's request not to allow the 1973 model to be seen by the dealers before official presentation of the line. In other words, no racing.

We knew a place, a silt basin in a remote, seldom frequented area of Valley Forge Memorial Park outside Philadelphia, Pa. The terrain features mud holes, light pack silt, mogules and tree-bordered trails with tight turns and switch-backs — ideal for the DT-3MX track test.

We collected a few tools, spark plugs, and a can of Yamalube. A set of tie-downs secured the MX in our van. En route to Valley Forge, we pulled in at a local petroleum injection engineer's station to gas up. The small screw-on gas cap was awkward to manipulate. As we removed it, the gasket fell to the floor of the van.

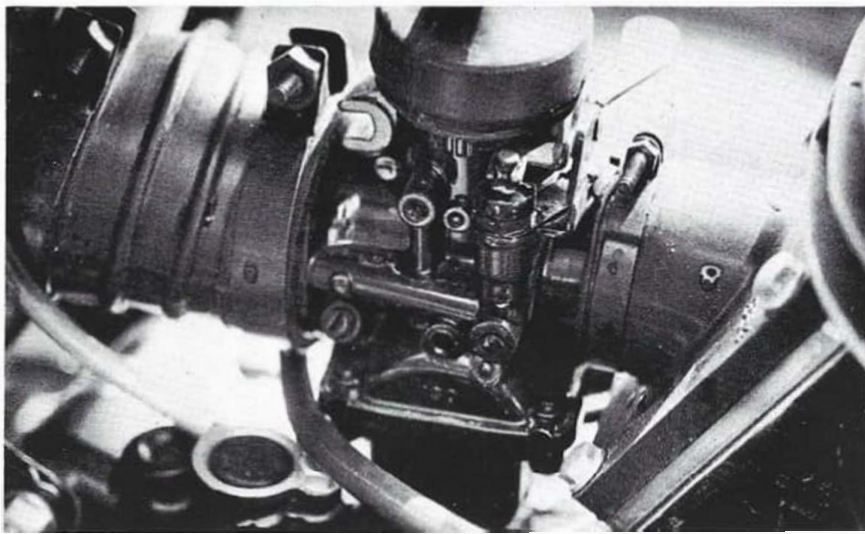
In order to feed the Yamalube into the oil injection pump, the right-side fiberglass number plate is removed. Simple task with a screw driver: turn the spring loaded lock screw in a counterclockwise direction. This done, the oil sump remote throat is revealed. The sump itself is mounted behind the left number plate, and the oil is drawn by osmotic pressure from the throat into the sump. This elaborate system was necessary due to the new style exhaust expansion chamber. The technical advisors, endeavoring to keep the machine lines slim, have maneuvered the expansion chamber through a series of oblique

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The generously finned matte black engine should have no cooling problems. Head finning has been trimmed away to allow room for the rather large expansion chamber.

The new internal rotor Hitachi C.D. ignition system made the starting procedure easy. Also the reduction in flywheel weight noticeably improves the power delivery.



Exclusive to the Yamaha motocrossers is their very effective reed valve setup. This has also been carried over to some of their street bikes.

Mikuni carb is painted a glossy black. angles, from the exhaust up along the underside of the tank. It then protrudes between the rear down tubes, exiting behind the left number plate. The entire set-up is reminiscent of the 1967 Bul-taco Metisse.

In the midst of all this delightful pre-meditated confusion they've mounted the oiled, quasi-filtron, fiber air cleaner, attached by a rubber shroud to the 32mm Mikuni carburetor, which is easily serviced when the right number plate is removed.

The final items checked prior to rid-

ing the MX were chain tension, lubrication, and the heat range of the spark plug. The chain comes well lubricated new from the factory; its tension seemed adequate. *Cycle Illustrated* noted that the gearing was 14 teeth on the countershaft and 51 teeth at the rear wheel. Our experience with Yamaha five-speed, close-ratio gearboxes had taught us that the ride would be fast, very fast.

Yamaha fitted the 250MX with an NGK B-9ES spark plug. Proper heat range, certainly cold enough, but according to Yamaha technical wizard Amos Gardlin in a recent report, not the right plug for racing. For all-out racing

NGK B-9EN was Gardlin's preference. After warming up the bike we took his lead and changed the plug to a B-9EN.

We are happy that Yamaha has put another bend on the kickstart lever, which allows it to fold away completely out of reach of the right leg. After turning the petcocks to the "on" position and depressing the choke lever, our DT-3MX started right away.

After several minutes of riding to clear out the stale fuel in the bottom-end, we made our first run on the silt basin MX course. The course was very tight and at times we found it hard to get beyond third gear. There's been no change in the shift pattern — one-down and four-up. The clutch operation and gear changing was smooth and effortless. There was a noticeable change in the gear pattern over the 1972 close-ratio gearbox. The 1973 MX gear ratio is wider through the first three gears, allowing translation of more power to the ground over a longer rpm interval. Gobs of torque.

The course soon became noticeably tight the faster we went, and the constancy of on-again, off-again business with the throttle made us pull in for a plug change. Back to stay with the NGK B-9ES. After all, the factory knows best.

Out again for a test of the suspension. Our earlier measurements had shown us that the 56¼-inch wheelbase was a full inch longer than that of the



1973 DT-3 MX

1972. Given a lower ground clearance of 8¼ inches and the increased wheelbase length, it came as no surprise to us that, when sticking the front wheel into a super-tight turn, it stuck! Yamaha has come up with a motocross machine that really functions as a racebike should. There was no side hop or tendency to wobble. The fork travel had a good 7 inches before bottoming. It is advisable, however, to change the fork oil to a heavier weight, or use automatic transmission fluid.

The bottom slider legs are fitted with fork brace brackets. Many of the more serious Yamaha racers are eliminating as much unsprung weight as possible by turning down the slider legs on a lathe. If you are weight-conscious, use the slider leg diameter just above axle as a guide and trim carefully.

During wheelie jumps over mogules and traversing dense wooded areas, the rear shocks with 3½ inches of travel and double string tensions (stiff) did not dampen or absorb shock satisfactorily. Even with the presence of a free-floating rear brake, the rear wheel continually crow-hopped, resulting in a loss of traction. A solution to this is simple: spring for a set of Koni or Curnutt shocks.

Back at the shop we unbolted the top-end for a peek inside. The added torque and horsepower must come from the porting modifications. The cylinder and head look entirely different this year. Yamaha has increased the size and width of the finning for better cooling. Unlike the 1972, the DT-3MX cylinder and head are torqued separately. The cylinder is torqued to the cases at about 40 lbs. psi, while the head is torqued to the cylinder at 20 lbs. psi.

The "torque induction" or reed valve

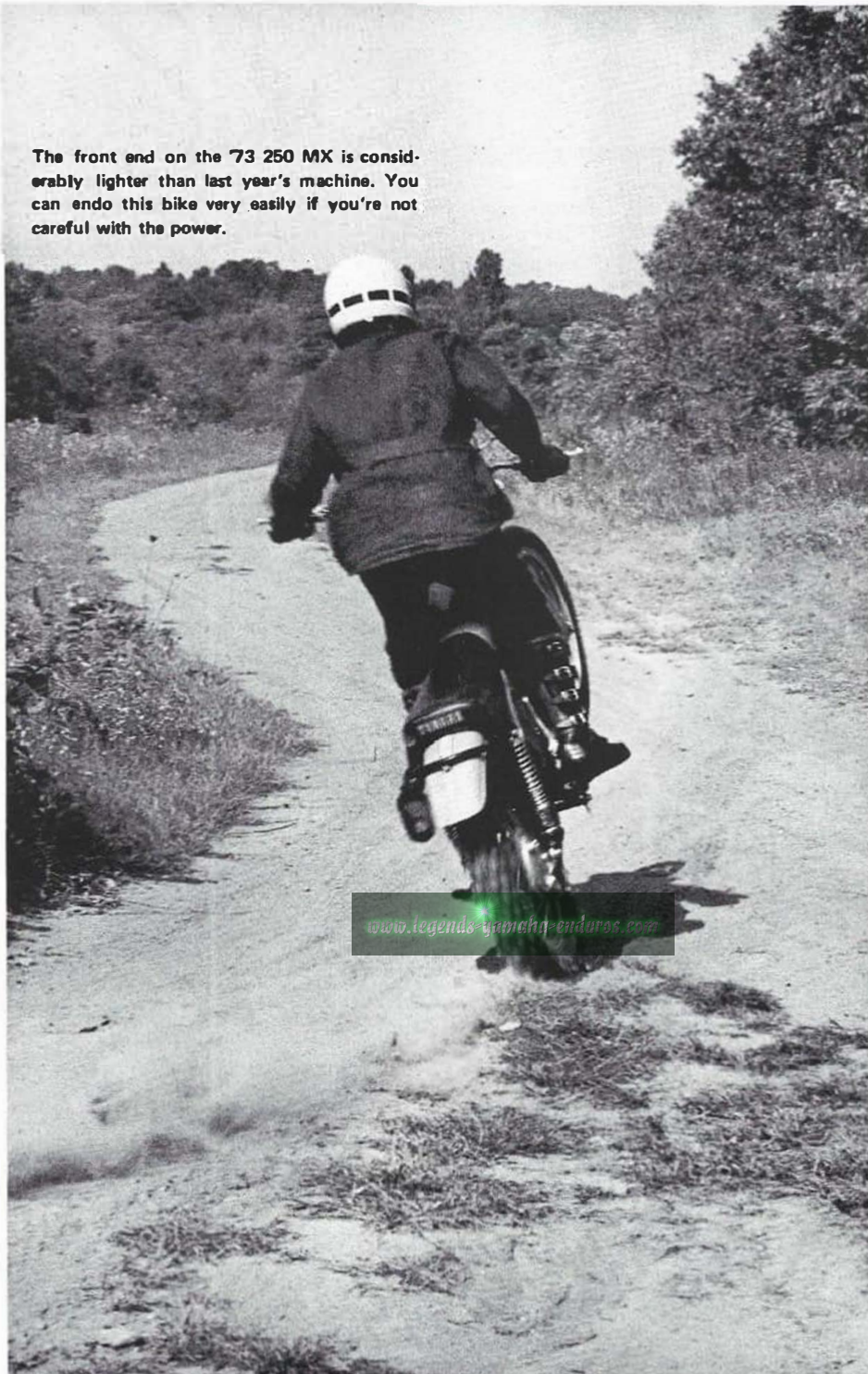
intake system has been enlarged by the addition of a third reed. This is where the added torque was coming from. The transfer and exhaust ports have remained the same, but the new expansion chamber configuration may be the reason for the added horsepower.

When the left side case cover was removed the new CDI ignition system was revealed. The cases are secured by 5mm allen screws. Thus, no threat of stripping in hasty pit work as with Phillips-head screws. Inclusion of the "set-it,

forget-it" CDI ignition eliminates the problem of timing your bike before each race and the accompanying fits of paranoia about point fouling. Yamaha has done a very thorough job of improvement with the 1973 DT-3MX.

With a 1973 DT-3MX and \$100 for different handlebars, tires and shocks, you'll be astride a winner. Someone once said, "Yamaha's future is in the East." The future may well be worldwide if Tiernan and Yamaha continue their mission. ●

The front end on the '73 250 MX is considerably lighter than last year's machine. You can endo this bike very easily if you're not careful with the power.



1973 DT-3 MX

Price NA
 Warranty none
 Distributor Yamaha International Corp.,
 Buena Park, Calif.
 Resale value after one year 75%

ENGINE

Type two-stroke single
 Displacement 246cc
 Bore & Stroke 70 x 64mm
 BHP @ rpm NA
 Advertised c.r. 7.05:1
 Actual c.r. 7.05:1
 Valve area (sq. in.)
 intake NO
 transfer NO
 exhaust NO
 Con rod/stroke 1.98
 Carburetion Mikuni VM 30SC
 Overall gear ratios
 First 22.45
 Second 16.46
 Third 12.58
 Fourth 9.98
 Fifth 7.91

RUNNING GEAR

Frame tubular steel
 Rake & Trail 31° & 5.5 inches
 Suspension hydraulic
 Tires
 front 3.00-21" knobby
 rear 4.00-18" knobby
 Brakes
 front 130 x 22mm s.l.s.
 rear 150mm x 30mm s.l.s.
 Electrics Hitachi internal rotor
 C.D. ignition

GROSS MEASUREMENTS

Weight NO
 Wheelbase 55.5 inches
 Seat height 31 inches
 Ground clearance 8 inches
 Handlebar width 33 inches
 Fuel capacity 2.11 gallons

COMFORT RATING

1. Vibration 8
 2. Suspension 8
 3. Noise level 7
 4. Seat 9
 5. Handlebars 6
 6. Start mech. 8
 7. Controls 7
 8. Stand 9
 9. Shift mech. 10
 10. Switches and instr. NA
 Adjusted overall rating 81

PERFORMANCE

¼ mile NO
 0 to 60 mph NO
 braking dist. from 60 mph NO

SUMMARY

In 4 short years Yamaha has moved from a rugged but heavy trailbike to a truly competitive motocross racer. Handling is stable although the front end feels a little light. Power is competitive but not overwhelming.

c.r.—compression ratio
 D.N.E.—does not exist
 N.O.—not obtained
 N.A.—not available
 Overall gear ratio—engine vs. rear-wheel speed
 s.l.s.—single leading shoe
 d.l.s.—double leading shoe
 Comfort rating—maximum of 100
 in.—intake
 ex.—exhaust
 trans.—transfer
 Con rod/stroke—the connecting rod length
 divided by the length of the stroke

GLOSSARY

