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HONDA MX SECRETS REVEALED!!

**DIRT
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HARD-HITTING YAMAHA YZ125K

JUNE 1983

\$1.75
UK £1.10

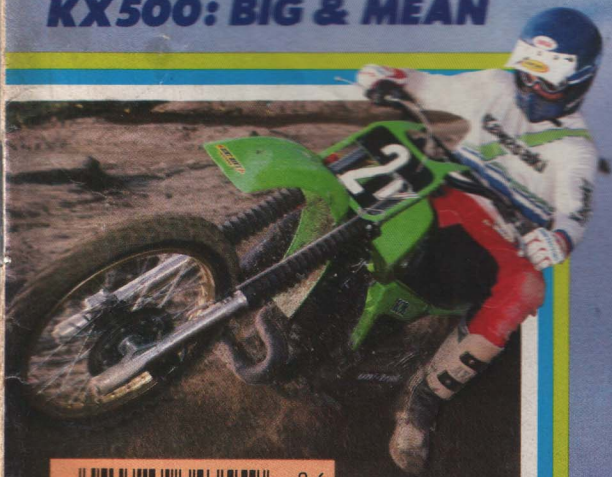


**SUZUKI RM250:
FROM MILD TO WILD
FOR ONLY \$45**

**HONDA XR350R:
LESS FAT - MORE SNAP**

**3-WHEEL SHOOTOUT:
HONDA vs. SUZUKI**

KX500: BIG & MEAN



**WIN!
"BARNETT
BOMBER"
SUZUKI RM
pg. 55**

ISSN0364-1546

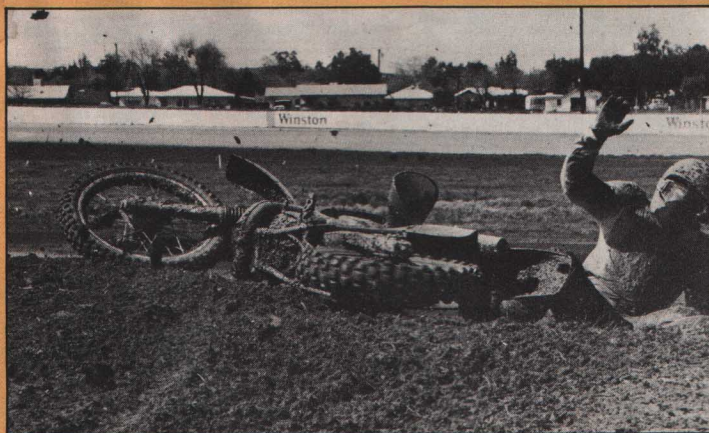




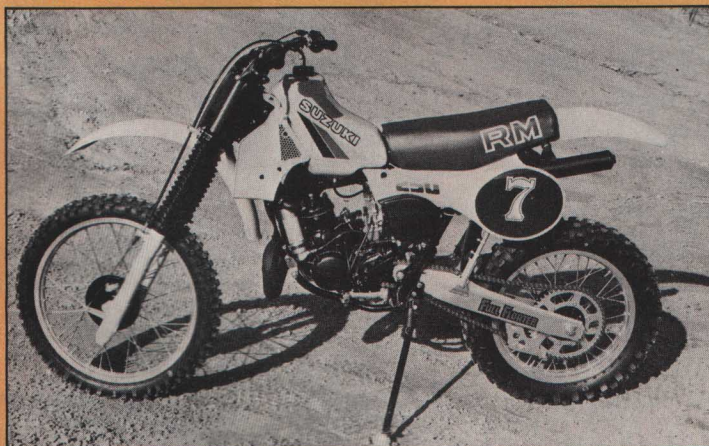
KAWASAKI KX500



HONDA XR350R



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SUZUKI RM250



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YAMAHA YZ125

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ON THE COVER:—
Gentleman Jim Holley takes to the skies once more. Startled birds immediately left the area.
INSET:— Tom Webb skids the KX500 through a loamy Dunes turn. Both photos were taken by the well-built but obviously malnourished Paul Clipper. Color separation by Valley Film.

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HONDA XR350R

M I S S I O N P O S S I B L E ! !

Your job, should you accept it, is to design and deliver a complete motorcycle. One that handles, is lightweight, and easy to ride. This machine must be rugged beyond belief, yet sensitive enough to be competitive. The final product must have the capabilities of a finely honed weapon. An enduro weapon. Its opposition will be tough, as they have all had years of experience conjuring up equipment for this purpose. One final note: Said motorcycle must be a *four-stroke*.

While the technical engineers watched

motorcycling public showed an interest in it. Honda's new master plan called for a bike with similar power characteristics, but more everywhere. Now the question was whether a bike equipped with a larger engine than the 250, yet smaller than the 500, was salable. As far as racers were concerned, the main objective was the four-stroke class. No sizes here. Just a division set aside for thumper addicts.

For the public interested in a trail bike, a little larger motor would have no effect on its salability. The decision agreeably

Finally, a competitive four-stroke



Light weight and snappy throttle response let the XR carve through sandy turns. Just stay forward and gas it.

the tape smoke, burn, then finally disintegrate, they stared, yet did not see. All of them were in deep thought about the proposed task. This would be one of the toughest yet; 100-percent conviction by all involved would surely be a must. Still, that might not be enough. A game plan was needed; first and foremost, the size of the machine would be critical. . . .

THE DEVIL'S ALTERNATIVE

For years, Honda has sold an XR250. It's always been a fun bike, too slow and too heavy, but a certain percentage of the

panned out in favor of a 350. For the Eastern woods freaks, a 350 would mean more punch than the old 250XR. Its main competition would come from 250 two-strokes. Also, it wouldn't try to convert the big-bore four-stroke enthusiasts. They want 500cc's or better.

Next, the type of powerband. For riders interested in competition, a snappy revver engine is preferred. Still, the trailer needs gobs of low-end that lets him cruise and lug the motor. A wide-ratio transmission with six speeds would accommodate the ma-



HONDA XR350R

majority. The engine would have to suit the masses: enough down low and still be able to hit some heavy upper Rs. This would not be easy.

MID-RANGE BIG-BORE

Without going into a stale synopsis concerning the various yeas and nays of the new 350 motor, we'll give you some pertinent facts about design and performance. First, stamped right on the head are the letters "RFVC." This translates to Radial Four Valve Combustion. The valves are aligned radially, letting them cover the greatest area possible. Add a flat dome piston and you have a mid-bore, high compression engine.

There are two carburetors. The primary carb handles all the jetting requirements. The secondary carb works from half throttle on up. It contains only a main jet, no pilot or needle jet. With two carburetors, the hitch normally found in four-strokes vanishes. This makes for better response down low, and gives the engine a chance to rev out with the secondary carb, or the high-velocity unit.

One of the drawbacks with most two-carb setups is fuel spit-back. This is raw gas that is shot back from one carb to the other, instead of into the combustion chamber. It gives the engine a stumbling effect, or a slight hitch, in the throttle response. Honda mounted a reed valve between the two intake ports. This is only open when the primary carb is working. From mid-range to full throttle, when the secondary carb is open, the reed valve closes. This lets both carbs supply the motor with a fuel/air mixture through the intake ports, and eliminates any spit-back into the primary carb.

FOCUS ON WEIGHT

Okay, the engine is all new. What about the chassis? Nearly all four-strokes suffer from a bad case of excess fat. The weight is carried high, making them handle like Pontiacs, rather than light, nimble fun machines. Fact: The '82 XR250 tipped the scales at 265 pounds—bone dry. No gas, no oil (forks or trans). Honda set a goal for the 350: take off 20 pounds. This would put it at 245 pounds, a livable figure.

With no gas in the tank, but everything else ready to go, we set the XR on the trampled but totally accurate *DB* scales (precise to .000124 octaves per quadriceps). Amazingly, it hit 249 pounds. Honda just about nailed its goal of taking off the 20 pounds of suet—and *not* at the expense of flimsy suspension components. All of the running gear is first-class: long-travel forks, Pro-Link rear—basic late-generation motocross stuff.

Big 41mm Showa forks have 11 inches of travel. Stock, they come with eight-weight oil, 6½ inches from the top of the tubes. The back half is equipped with a Pro-Link single shock that has 10.6 inches of travel. There is a four-way adjustable

rebound clicker and 12 settings for compression.

In an effort to keep the weight down, the shock body and all the linkage is made of aluminum. The triple clamps are aluminum and most of the big bolts have dished-out heads to help shave off more ounces.

Both hubs are small, but house excellent brakes. The front is a single-leading shoe model with plenty of muscle. This too saves on weight over a dual-leading shoe setup. The swingarm is steel painted aluminum. Slots in the back of the swingarm make for a quick-change rear wheel.

WORKIN' OUT

We had a chance to ride and race the XR on a variety of terrain. There's no doubt where the bike is most at home: the woods. Anything tight and twisty, slow and gnarly, and the 350 is the dream four-stroke. With a sharp 26-degree rake and a short wheelbase (55.3 inches) quickness is its forte.

For all but the most casual trailriding, the forks are far too soft. We pumped ten-weight oil into them, five inches from the top of the tubes. This firmed them up just right for all concerned. On the shock, we felt that, for the majority, the compression setting was fine. It's set at six clicks out. Rebound felt the best at either two or three clicks.

With the suspension balanced out, we could now get into some serious riding. First off, there's a drill for starting the XR. There are two compression releases; one's automatic, the other manual. We never used the manual lever. A sharp snap at the lever always got it chugging in just a few kicks. You can't rest your foot on it and then slop the lever down. This results in zip-poo. Simply jab at the pedal in one quick stroke. It'll fire up.

It takes a while to warm up, then proceed. With the forks firmed up, water bars and ripple bumps are handled in fine fashion. Even at high speeds, like desert use, the bike slams true and straight—amazing, considering the short wheelbase. Tight work requires nothing strange from the rider. Stay up on the tank, pivot and gas. It minds quite well, even considering the mild power delivery. Momentum is the key to riding the XR fast.

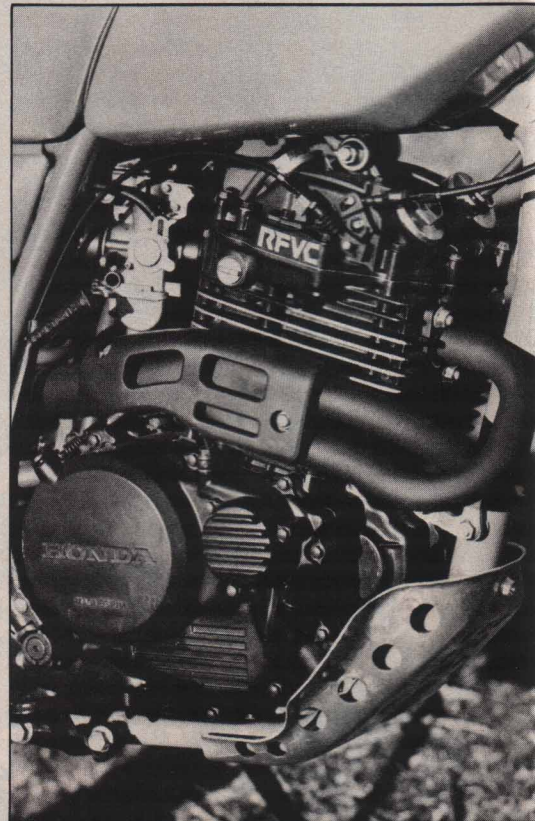
Trails and woods sections should be attacked. The 350 will rev far past the point of sanity. Racers should use this tactic. Don't short-shift and lug the motor. It'll go, but not real fast. You have to ride it like a two-stroke. Stay on the upper part of the power curve, then shift it at the melting point. Cruisers shouldn't fear the revving aspect of the bike. It can be ridden slowly. Way down low there's enough grunt to take even the sloppiest of riders up and over some gruesome territory.

Two things are a must: One is the jetting. Some of the first bikes were coming with a 45 pilot jet in the primary carb. This must be changed to a 48 (after the first batch received, this was done at the factory). A slight hitch in the mid-range could

A sharp 26-degree rake makes for quick handling, a nice trait for four-stroke-minded woods riders. >



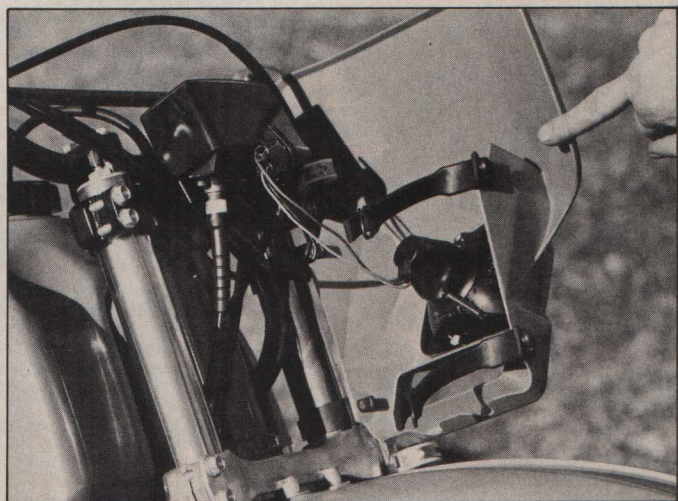
There's an optional quartz light for night riders. The front fender was designed in a wind tunnel, which is why it's flared around the forks. Supposedly, it forces air down to the motor.



RFVC: Radial Four Valve Combustion. The engine puts out some good power and is designed with Eastern riders in mind. There is a manual and automatic compression release.



The tank is large, but not cumbersome. There's a natural flow from the seat onto the tank. Bars are too wide for tight woods; hack an inch off each side.



By unhooking two straps, the headlight/numberplate swings out, letting you get to the wiring and the speedo.

HONDA XR350R

be felt with the smaller pilot jet. On a four-stroke, this lag is deadly. Once the 48 was installed, the lag was gone.

Secondly, on hard, rough acceleration, the clutch slips. Stiffer springs are a must. You can get them from American Honda. The code number is HC 150110. With the stiffer springs, the clutch pull also gets tougher. And, the problem isn't completely eliminated. Some slippage can be felt on uphill whoops when the bike becomes airborne and then lands under a full-throttle situation. It's an annoying trait, but one you'll have to live with.

SAMPLE AND HOLD

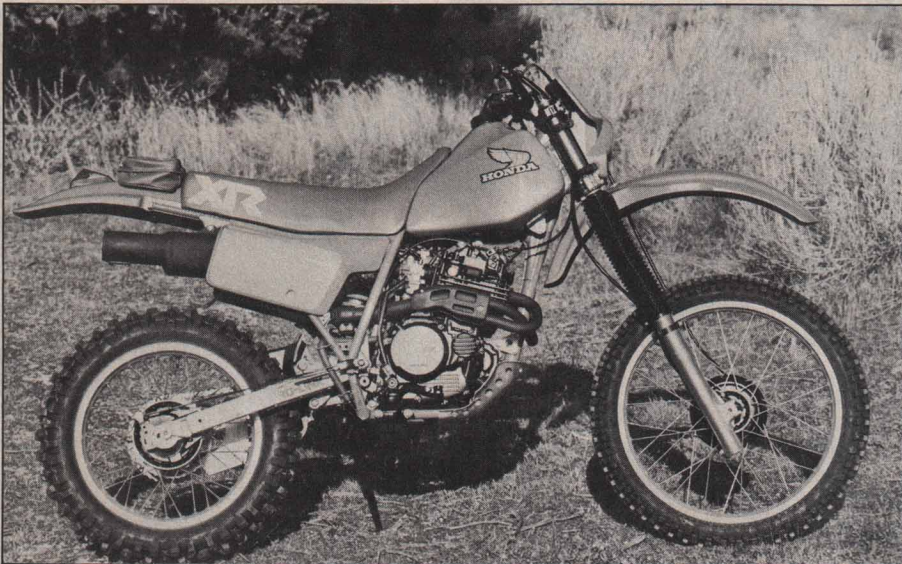
Like all the latest Honda off-rovers, the rims are the new Jaws style with rim locks. On the rim itself, the valve-stem hole is bigger than normal and comes with a little rubber cover to keep the crud out.

Tires are four-ply Bridgestones. The front works okay on hard-packed surfaces;



Wheelies are a snap. A little clutch, a lot of gas and that's it. The front end is lighter than previous XRs.

get near sand, and it's dismal. Shell out for a Metzeler or a Dunlop K139. We can't complain too much about the rear meat; it hooked up all right. One problem that might arise is the size. It's a 17-inch tire, and availability is sometimes a pain.



HONDA XR350R

ENGINE TYPE	..... Air-cooled, OHC, 4-stroke
BORE AND STROKE	..... 84.0mm x 61.3mm
DISPLACEMENT	..... 339cc
CARBURETION	..... 2—26mm Keihin carbs
FACTORY RECOMMENDED JETTING:	
MAIN JET	..... Primary/120; secondary/108
NEEDLE JET	..... N/A; N/A
JET NEEDLE	..... Primary/E3052C; secondary/E2053E
PILOT JET	..... Primary/45; secondary/N/A
SLIDE NUMBER	..... Primary/3.5; secondary/1.5
RECOMMENDED GASOLINE	..... All gasolines, 91-plus octane
FUEL TANK CAPACITY	..... 12 L (3.2 gals.)
FUEL TANK MATERIAL	..... Plastic
LUBRICATION	..... Wet sump motor
RECOMMENDED OIL	..... Honda 4-stroke
OIL CAPACITY	..... 2 L (2.1 qts.)
AIR FILTRATION	..... Foam type
CLUTCH TYPE	..... Wet, multi-disc
TRANSMISSION	..... 6-speed
GEARBOX RATIOS:	
1	..... 2.923:1
2	..... 2.000:1
3	..... 1.550:1
4	..... 1.273:1
5	..... 1.080:1
6	..... 0.926:1
GEARING, FRONT/REAR	..... 14/42
IGNITION	..... CDI
PRIMARY KICK SYSTEM?	..... Yes
RECOMMENDED SPARK PLUG	..... NGK—DPR8EA-9; ND—X25EPR-U9

SILENCER/SPARK ARRESTER/	
QUALITY	..... Yes/yes/very good
EXHAUST SYSTEM	..... Up-pipe, right side
FRAME, TYPE	..... Semi-double cradle
WHEELBASE	..... 1405mm (55.3 in.)
GROUND CLEARANCE	..... 310mm (12.2 in.)
SEAT HEIGHT	..... 920mm (36.2 in.)
STEERING HEAD ANGLE (RAKE)	..... 26°
TRAIL	..... 100mm (3.9 in.)
WEIGHT, DRY, W/OIL IN FORKS & TRANS	..... 249 lbs.
RIM MATERIAL	..... Aluminum alloy
TIRE SIZE AND TYPE:	
FRONT	..... 90/80-21 6-ply Bridgestone
REAR	..... 130/80-17 6-ply Bridgestone
SUSPENSION, TYPE AND TRAVEL:	
FRONT	..... Leading axle, 280mm (11.0 in.)
REAR	..... Pro-Link, 270mm (10.6 in.)
INTENDED USE	..... Enduro
COUNTRY OF ORIGIN	..... Japan
RETAIL PRICE, APPROX.	..... \$1998
DISTRIBUTOR:	
American Honda Motor Corp.	
100 W. Alondra Blvd.	
Gardena, CA 90247	
PARTS PRICES, HIGH-WEAR ITEMS:	
PISTON ASSEMBLY, COMPLETE	..... \$34.34
RINGS ONLY	..... 13.34
CYLINDER	..... 92.69
SHIFT LEVER	..... 12.15
BRAKE PEDAL	..... 16.01
FRONT SPROCKET	..... 10.96

The engine is a wet sump model. There's a replaceable oil filter that should be serviced every other oil change. The cam rides on ball bearings, and the cam chain tensioner has a long slipper with a hard coating and should wear well. Also, it automatically adjusts itself.

Stock chain is of the O-ring variety. More weight savings here, as it's 7.3 percent lighter than last year's chain.

The tool bag on the rear fender is a nice touch, but it bothered some of the testers when they got their weight back and over the fender. We took it off.

Check every nut, bolt, spoke and clamp for the first few rides. They all loosen radically. By the way, you can run any type of gas as long as it has an octane rating of at least 91.

Water poses no problem for the XR; it's a submarine. In one stream crossing, the water was flowing just under the tank, but over the pipe, and it never coughed.

Rubber disconnects let the front headlight/numberplate pivot out of the way, giving access to the headlight and speedo garbage. An optional quartz light is available for night riders.

The front fender is a wild-looking unit with flares. It supposedly directs air down to the engine. We felt it was too short and let crap build up on the engine in a mud situation. A Gold Belt DeFender solved this problem.

Like every Honda four-stroke we've tested, the bike refuses to be shifted under a load. This translates like so: You're revving the engine, looking for maximum power. At just the right moment you attempt to speed-shift into a higher gear. Forget it. You have to back off, use the clutch, and then shift. Sorry.

The front end is light compared with most stokers. Wheelies require no more than a fan on the clutch lever and a blip of the throttle.

A smart airbox, tucked up high, is easy to service and very waterproof. The filter can be removed in seconds and does a decent job of passing air to the carbs.

Once again, the kickstarter requires finesse. Proper placement of your foot is critical or you'll whack it on the footpeg. This makes for lumps on Mr. Shinbone.

You can expect to get at least 70 miles from a tankful of gas.

The speedo contains both an odometer and a needle-reading gauge. Enduro riders will tape off the video side of the unit and use just the odometer.

THREAT OR MENACE?

Bottom line—we liked the XR350 a lot. For a four-stroke, it's light and has razor-sharp manners, good for the woods-minded. In fact, enduro-oriented racers interested in the four-stroke class could hardly design a better motorcycle. It may lack the punch of a two-stroke, be a little heavier and somewhat tougher to maneuver when the going gets tight, but there's not a valved machine around that does it as well as the XR350R. □