

Cycle

AUGUST 1978 70p

**TESTS: YAMAHA DT175E MONOSHOCKER
CAN-AM 370 MX4, SUZUKI GS750EC
SNAP IMPRESSION: TURBOCHARGED
KAWASAKI ZI-R TC, THE MEANEST Z OF ALL**

**TOURING: WHY WE DO IT, HOW WE PLAN IT,
WHERE WE GO AND HOW WE GET THERE**

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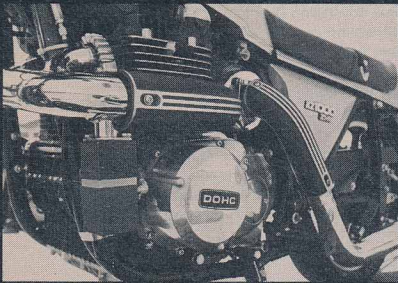
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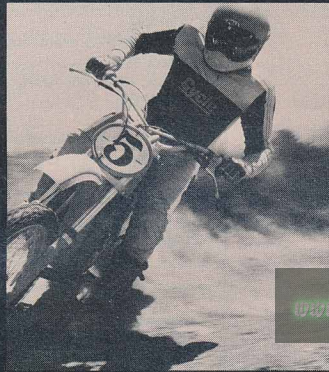
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This Month's Cover: Cycle presents its You-Are-There Touring Cover. You're on a Harley-Davidson FLH-80, and yes, you are speeding. Complainers should consider taking it up with St. Joan of Claymore. That's an inside joke, literally, so see page 8. Cycle's touring features begin on page 50. Photographic evidence of our highway perpetration has been provided by Robin Riggs.

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CYCLE ROAD TEST

YAMAHA DT175E

Reliable, versatile and light, the DT175E boasts of significant improvements, including DeCarbon rear suspension, CDI and a six-speed transmission. Unfortunately, to meet EPA-mandated noise requirements, Yamaha left the 175 gasping for air.

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YAMAHA DT175E

● NOW THAT SEVERAL HIGH-CALIBER JAPANESE enduro weapons are on the market, dual-purpose machines no longer need hide behind the "enduro" euphemism. Closet cow-trailers can proudly say they're in the dirt strictly for fun and mean it. But there's still a difference between dual-purpose machines and deadly serious enduros, and riders looking for ISDT-bike performance from a dual-purpose motorcycle won't find it in the 175E.

Yamaha's DT175E has been vastly refined since the C-model, which was sold last year in lieu of an updated D-model. The current machine includes high-performance items such as a DeCarbon Monocross rear suspension system, a six-speed transmission and capacitor-discharge ignition. Despite these refinements, the DT is still a compromise bike—which is a polite way of saying it's neither a first-rate road nor dirt machine. But the DT175E makes it as a fun-bike: it will supply the dilettante with endless low-speed thrills off-road and function perfectly as a round-town runabout.

One might reason that a small-displacement machine provides a small amount of entertainment, and a large-displacement bike more of the same. Not so. If anything, a 100 or 175cc dual-purpose bike offers the most sheer entertainment per pound available. In the dirt, the horsepower shortfall precludes any eyeball-opening speed runs. But this restriction virtually eliminates the possibility of a serious high-speed get-off and forces the rider to amuse himself by riding in tight woods or around a lilliputian track—the kind of riding that offers the most laughs per mile ridden. At the same time, most 175s have sufficient power to get to the supermarket, to school or even to the local off-road riding area.

The DT175E's engine produces reasonable amounts of usable power. The 171cc, low-compression (6.8:1) engine starts very easily with just a jab at the

starter lever. In the dirt, revs build cleanly and quickly from idle. For the most enjoyable riding, though, it's necessary to keep the crank spinning above 4000 rpm, where the two-stroke begins to make its power. Used at this level, the DT is comfortably at home on smooth trails or over medium-speed rough terrain. Around town, the 175 can propel the rider along in traffic without wheezing. Although the DT can legally cruise down the freeway at 55 mph, it strains at the task. Realistically, the Yamaha's street use should be limited to short-range commuting. On the street and in the dirt the engine seems to struggle in the upper gears above 6500 rpm. We suspect that its restrictive air box not only muffles the intake drone but takes the upper-rpm sting out of the DT175E.

Gas and air reach the powerplant via the four-petal reed-valve assembly from the 24mm Mikuni carburetor. Credit for the Yamaha's clean low-end power goes to this induction system. The rider can grab full throttle and the engine revs without hesitation. Exhaust gases exit through an average-size exhaust port to an up-swept expansion chamber that incorporates muffler and spark arrestor. The chamber routes above the cylinder head and through two frame members, tucking in completely out of the way.

Yamaha has retained the use of the Autolube oil injection system on their dual-purpose machines. Years ago Yamaha MX models used the system, but serious dirt riders immediately removed the pump, primarily to reduce weight. Most DT owners, however, retain the system; they appreciate its hassle-free, no-mess operation. As an added benefit, the oil injection system varies the oil/gas ratio under changing engine loads, thus conserving oil and preventing the engine from loading up with oil and fouling a plug at low revs.

A six-speed transmission and wet-plate clutch transmit the power to the rear wheel. The gearbox has ratios for everything from log jumping to boulevard cruising. Both fifth and sixth gears are

overdrives, with 0.957:1 and 0.800:1 gear ratios, respectively. Consequently, the DT can churn along at 55 mph without strapping the engine. Gearbox action is outstanding: shifts are smooth and the gear lever throw is short and precise. Similarly, the clutch operates easily; it will fade a moderate amount if the rider gets into trail riding situations in which he repeatedly slips the clutch.

Capacitor-discharge ignition is another refinement for 1978. This system eliminates ignition points and the almighty bother of checking and resetting the timing. The CDI system also generates a faster voltage rise time. The latter benefit is especially useful in two-stroke engines, where the charge in the combustion chamber is very oily and the combustion process leaves heavy deposits of all kinds in the chamber and on the plug. In a breaker-points system, spark plug deposits can bleed off the charge to ground because a battery-and-coil system takes longer than a CDI to build up its voltage. A good CDI's rise time is so fast that the deposits do not have a chance to bleed



The center-axle fork with stylish dust covers allows seven inches of travel and has acceptable damping.



the voltage off before the spark plug is triggered at the appropriate instant.

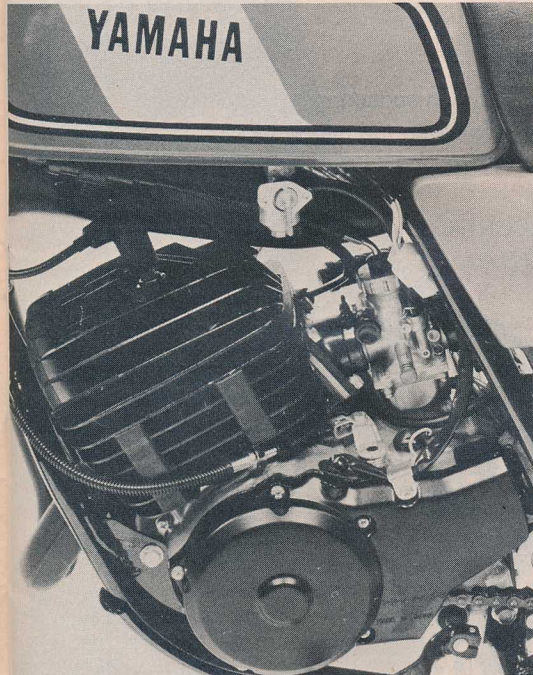
Holding the 175 engine is a chassis with one outstanding feature: its diminutive size. In fact, the 175 uses the same frame as the DT125E, which is small even for a 125. Indeed, the 175 and 125 are virtually identical except for the cylinder and piston, carburetor jetting, countershaft sprocket, chain, CDI and ignition coil.

The 175's frame has a 30-degree head angle, and the wheelbase measures 53 inches. Its 21- and 18-inch wheels give it an average seat height of 32 inches, but the bike still feels small to a five-foot ten-inch rider. This feeling tends to complement the engine's mild power and encourage the rider to seek tight terrain and keep the speeds down. Wheelies are easy in all of the lower gears, and with its trials tires

the bike slides at command. These antics are fun, but the rider should not attempt to cover any rough ground at speeds above 40 mph. The bike lacks high-speed stability in these conditions.

Suspension, especially the rear, has good damping and appropriate spring rates, but insufficient travel at both ends allows harsh bumps to bottom the suspension at any speed. A 170-pound rider will flatten the whole suspension system, even at 30 mph over moderately rough ground. The fork's damping fades with prolonged hard use; the rear monoshock, however, retains its damping very well.

Around town, the suspension of the agile DT175E provides a comfortable ride for short jaunts. The fork and shock soak up any city-street pot holes the rider is likely to find. Winding through some coun-



Reed-valve induction provides crisp low-end response; restrictive air box inhibits peak horsepower.



The swing-arm member rising from the axle adds to rear-end rigidity. Spark arrestor/muffler is effective.



YAMAHA DT175E

try roads, *Cycle* test riders found the bike pleasing for trips under an hour; after that the seating position became cramped and the two-stroke buzzing irritating. Generally, the bar-seat-peg relationship placed the rider in a natural though compact position. The seat, moreover, was comfortable for short or long rides in the dirt or on the street. We did a few freeway excursions, but factors other than horse-

power discourage the rider from making this a habit. The shortness of the bike makes it track along freeway rain grooves like a slot car, and every gust of wind causes the bike to sway and rock.

The DT175E frame has a large backbone which encloses the monoshock and so follows the design of the Yamaha motocrossers and IT enduro bikes. This enclosure system allows the DT models, with their extra electricals and wiring and need for a lower seat height, to use the monoshock design. The tubular swing

arm is also noteworthy. Because the swing arm secures the trailing end of the monoshock, the arm needs at least two extra members and additional bracing, all of which go a long way toward eliminating swing-arm flex. The arm is bushing-mounted and, though ours didn't give any problems, it ought to be checked often for excessive play.

Nothing in the DT's wheel assemblies is trick. There's one rim lock on each Takasago rim. A conical hub saves some

(Continued on page 113)

Make and model Yamaha DT175E
 Price, suggested retail \$869

ENGINE
 Type Two-stroke single, five-transfer, reed-controlled intake cylinder
 Bore and stroke 66 x 50mm (2.60 x 1.97 in.)
 Piston displacement 171cc (10.4 cu. in.)
 Compression ratio 6.8:1 (trapped)
 Carburetion One slide-throttle 24mm Mikuni
 Exhaust system Single upswept with silencer/spark arrestor
 Ignition Magnetically triggered, magneto-energized CDI
 Air filtration Foam element, washable
 Oil filtration None required
 Oil capacity 1.0 lit. (1.1 qt.)
 Bhp @ rpm 12.23 @ 7000
 Torque @ rpm 9.60 @ 5500

ELECTRICAL
 Power source Flywheel magneto
 Charge control Output shunt
 Headlight beams, high/low 35W/35W
 Tail/stop lights 5.3W/25W
 Battery 6V 6AH

INSTRUMENTS
 Includes 90 mph speedometer, 10,000 rpm tachometer, odometer, trip meter, neutral light, turn signal light, high beam light

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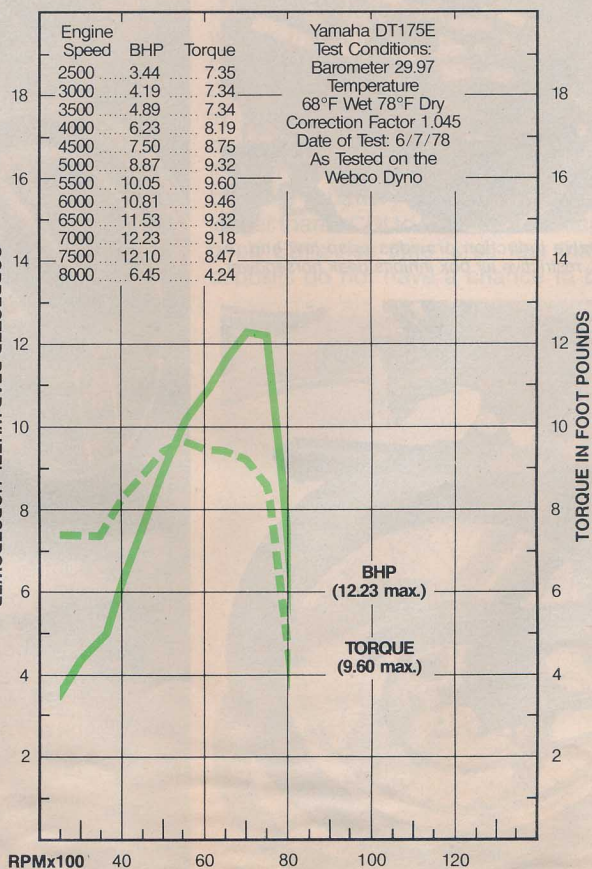
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 Buena Park CA 90620
 (714) 522-9444

TRANSMISSION

Type Six-speed, constant-mesh, wet-plate clutch with exposed chain final drive
 Primary drive Helical-cut gear, 71/22, 3.227:1
 Final drive #428 D.I.D. chain, 49/16 sprockets, 3.06:1
 Gear ratios, overall (1) 35/10 (2) 31/14 (3) 28/18 (4) 25/21 (5) 22/23 (6) 20/25

CHASSIS

Type Tubular dual-downtube full-cradle frame, center-axle fork, dual-shock swing-arm rear suspension
 Wheelbase 1350mm (53.1 in.)
 Rake/trail 30°/126mm (4.96 in.)
 Brake, front Cable-actuated, 129.4 x 28mm (5.09 x 1.1 in.) brake shoes
 rear Rod-actuated, 129.4 x 28mm (5.09 x 1.1 in.) brake shoes
 Wheel, front 1.60 x 21-inch rim
 rear 1.85 x 18-inch rim
 Tire, front Yokohama Trail Sport Y-620 2.75 x 21,4 pr
 rear Yokohama Trail Sport Y-620 3.50 x 18,4 pr
 Seat height 825mm (32.5 in.)
 Ground clearance 265mm (10.4 in.)
 Fuel capacity 1.8 gal.
 Curb weight, full tank 102.5 kg (234 lbs.)



YAMAHA DT175 Continued from page 48
weight on the front. Brakes are the same size for both ends (129.4 x 29mm); the front brake action is smooth and progressive, but the rod-actuated rear brake locks up far too often. Yokohama trials tires—a 2.75 x 21 and a 3.50 x 18—provide traction. The tread pattern offers acceptable performance on the street but does not give much control in sand or mud. Fortunately, the little bike's mild power breaks the rear tire loose far less often than a large-displacement machine.

Having produced dual-purpose machines longer than any other manufacturer, Yamaha has long experience playing the detailing game. The handlebar has a comfortable bend for dirt or street riding. The instruments (speedometer, tachometer, trip meter) and controls (turn signals, horn and high/low beam) are all easy to read and to reach. The choke knob on the carburetor and fuel petcock can be covered with one hand swoop. Throttle actuation is smooth, and all the cables tuck completely out of the way. The turn signals are rubber-mounted units. The stylish fork boots effectively seal out dirt and mud. Yamaha has offset the large gas cap so that the owner does not splash fuel directly onto the backbone hump in the fuel tank. Although not as wide as some fenders, those on the 175E did a reasonable job of warding off mud and water. Snail-cam chain adjusters make that service a bit less of a chore to perform.

In two respects the DT175E had aggravating shortcomings. The tool kit cover was somewhat difficult to remove, and then the tools seemed to expand and only seven would fit where 10 resided before. The news was no better in the air cleaner department. After unscrewing five bolts to remove the air cleaner cover, the owner discovers that Yamaha is still using a thick foam air cleaner that has a short service life.

For the beginning rider or for the fellow who wants to test himself gently on easy trails, the DT175E provides an excellent combination of mild power, low weight and small dimensions. Those characteristics make the 175 a logical choice for younger riders who aren't strong enough to arm-wrestle a heavier, faster and more powerful motorcycle off-road.

No one expects that a genuine street-legal dual-purpose motorcycle can match a bonafide enduro bike of the same displacement in any off-road contest. On the other hand, dual-purpose motorcycles like the DT175E spend most of their time on the street, precisely the place where enduro bikes are outlawed in most states. As a class, dual-purpose bikes have been getting better as off-road machines in the last five years. And motorcycles like the DT175E testify to this progress: When the pavement turns to dust and the road narrows to a cow trail, the DT175E rider knows that what lies ahead is still fun. ●

AUGUST 1978

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