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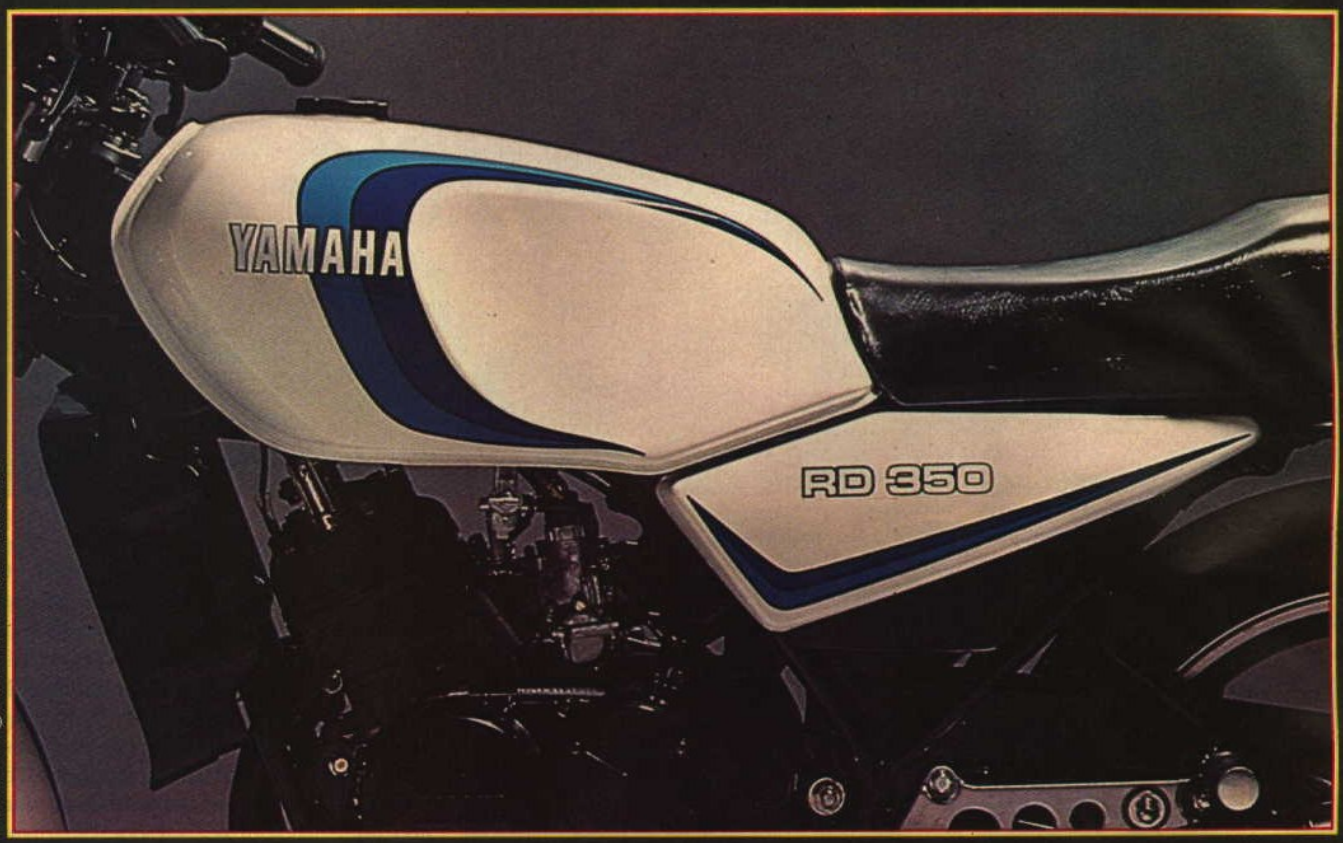
ROAD TEST:

Yamaha RD350LC

Portrait of a racer-replica—a water-cooled two-stroke engine and Monoshock rear suspension in the RD that dreams are made of.

BY MICHAEL JORDAN



For as long as Yamaha has built roadracing motorcycles, street riders have wanted a piece of the action. All they asked for was a street-legal motorcycle capable of reproducing the sensations of a Grand Prix racer with a single whack of the throttle.

At first, speed-struck hotheads had to settle for 250cc TD1 roadracing pistons and barrels bolted to their lumbering YDS3s. Then the R5 arrived in 1970 to quench their passion for faster machinery. It was patterned after the Yamaha 350cc two-strokes that had begun to humiliate four-stroke bikes on roadracing circuits around the world, and for a while it and its RD350/RD400 descendants satisfied hard-core Yamaha speed freaks. But ever since the water-cooled TZ250 hit the track in 1974 followed by the Monoshock TZ of 1976, Yamaha RD riders have fretted over the growing credibility gap between the RD and their roadracing fantasies.

But now at last it's possible once again to buy a piece of Yamaha's roadracing action—the RD350LC, a Monoshock, liquid-cooled (LC) example of race-wise technological trickledown. It has become one of the most lusted-after motorcycles of 1980, the ideal street-racer for legions of RD disciples, a TZ with lights. Even though nearly nine months elapsed between the bike's introduction and the arrival of the first production units, 10,000 examples already have been sold in Europe alone.

You can't buy the RD350LC or its little brother, the RD250LC, from your local Ya-

Continued

maha dealer, though. The explanation can be found in EPA air-emissions regulations and Yamaha's market-think for the Eighties. But even so, private individuals have begun importing RD350LCs. And indeed, CYCLE GUIDE went to the same trouble (see page 40). Even if the LC was to be limited to a very exclusive audience in the U.S., we figured the ultimate two-stroke street bike represented an experience that deserved exposure. Frankly, the temptation of getting our hands on a piece of Yamaha's action proved too much. That's how each of us came to find himself peeling off into Willow Springs Raceway's notorious Turn Eight, a long, bumpy, right-hand sweeper, while tapped out in sixth gear on this Monoshocked RD.

And in that instant, we understood why the hassles of importing the LC had been justified. The repli-TZ made the transition into Turn Eight in a single, fluid movement that only a pure-bred high-performance bike could hope to produce. Where the RD400F would have been shaking like a cowardly mongrel at 99 mph, its engine surging and bucking at 7300 rpm, the RD350LC ran straight and true at 110 mph with its belly to the ground like a race bike, its engine begging to be permitted beyond the 9500-rpm redline.

You would expect race-bike finickiness from such a motor, and that's just what you get. Below 6000 rpm, the engine isn't strong enough to pull the wings off of a fruit fly. It tells you of its unhappiness by shaking fitfully in its rubber mounts. A flaw in part-throttle carburetion (it is too rich according to factory spokesmen) makes it all but impossible to accelerate in sixth gear at less than 6000 rpm. It even takes a good deal of delicacy with the clutch just to get the light-flywheel engine away from a dead stop, as a comparison between the LC's dyno curve and that of the RD400F reveals.

You're paid back for this discomfort, though, once the tach needle crosses the 6000-rpm border and the motor begins to accelerate. It finally uncorks at 7500 rpm as port timing, exhaust tuning and carburetion suddenly come together, and the bike leaps forward with a terrific rush. In the past, two-stroke street bikes were calibrated so that port timing, exhaust tuning and carburetion affected different areas of the powerband, providing a broad spread of less-than-optimum power. The LC, on the other hand, has been tuned to provide its power all at once, like a race bike.

Power like this might lead you to expect a watered-down TZ race engine in workaday harness. But what you get is something of a water-cooled RD350 street engine. It shares the same familial resemblance to racing engines that all RD engines have, but it is not a TZ replica.

The LC's bore and stroke reproduce the old RD350's dimensions, while the separate cylinder barrels and one-piece cylinder head incorporate lessons learned with the RD400. Yet the LC's two-ring pistons and built-up roller-bearing crankshaft do not mean the LC's engine is interchangeable with previous RD's. The motor uses technology gleaned from the TZ in its bottom end. To begin with, the crankpins are integral with the outer flywheels. The inner flywheels are pressed over them, lending the lightweight crank more rigidity. Also, the cases use locating pins to keep the main bearings from spinning. Both of these features prolong crankshaft life in a high-output two-stroke engine. A close-ratio transmission, designed to cope with a narrow, muscle-bound powerband, does the job of transmitting the horsepower.

Though the LC engine isn't exactly a clone of a TZ powerplant, its radiator is more than window-dressing. When you consider that 80 percent of the heat produced by a two-stroke engine is dissipated through the cylinder head and most of the

The Shocking Question

• Why bother with a Monoshock on a street bike? Well perhaps you should ask why we ever bothered with *twin*-shock systems. You see Monoshock, or more precisely monospring, was the basis for some of the earliest motorcycle rear suspensions. In 1919 the Beardmore Precision was lifted above the rigid-frame crowd by a triangulated rear end and a single leaf spring. HRD Vincents were similarly blessed in the late Twenties.

So why did we bother with twin shocks? An answer is difficult to justify because a Monoshock rear suspension really does have many advantages. Not least of which is the increased rigidity of the swingarm. The tube layout designed to support the lower shock mount also triangulates the swingarm in two planes, which helps keep the axle and chassis running in the same direction.

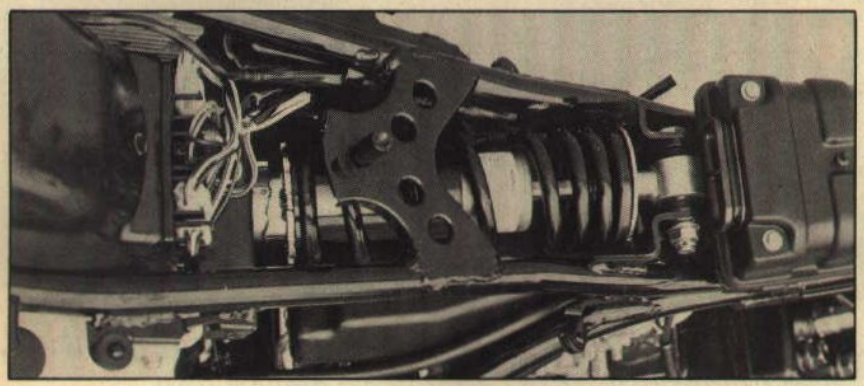
A similar advantage also comes from using just one shock. If it should fade, both sides of the swingarm are affected equally. That is not always the case with slightly mismatched twin shocks that can allow both sides of the swingarm to react at different speeds, causing flex. One disadvantage can be the slightly heavier weight of a single shock system. But while high unsprung weight is a definite disadvantage, a slightly high center of gravity can also be beneficial. It helps straight-line stability while trading just a little cornering agility.

There are major difficulties with Monoshock, but they mainly concern the designer. He has to find locations for the many parts displaced by the shock. On the Yamaha, the shock passes right through the airbox space under the seat. That is why the RD350 has a pancake filter far under the tank and a complicated connection with the carb bellmouths. The airfilter in turn takes up valuable gas tank space, which might account for the rather bulbous outer dimensions of the tank.

Adjustments to the shock are also difficult to make on the RD350, requiring removal of the seat for spring preload changes. But as Yamaha has shown with its dirt bikes and even the latest vee-twins, Monoshocks can be made simple to adjust.

When adjustable with a single flick of a gloved wrist, Monoshocks really do have few things going against them. The deciding factor is the ability of the designer to integrate the concept into his motorcycle. As the RD350LC shows, the benefits are many, but so are the problems.

—David Dewhurst



rest through the area around the exhaust port, you begin to understand how liquid cooling can reduce metal distortion and so permit high specific output without risking piston seizure. The LC employs an impeller pump to draw coolant down from the frame-tube-mounted radiator and then pump it through the barrels, into the cylinder head and finally back into the radiator. A plastic helical gear located just above the oil injection pump and driven by the primary gear powers the impeller. The cooling system holds 1800cc of coolant and its overflow tank is mounted aft of the injector oil reservoir beneath the right sidecover. Since there's no thermostat in the LC's watercooling system, there's no telling what the bike might be like while trapped in a mid-summer traffic jam, but it did the job on the racetrack.

Just as the engine reveals lessons learned from the TZ hardware, so too the chassis employs TZ-think if not actual TZ pieces. In broad outline, the LC frame and early Monoshock TZ frames look the same in terms of layout. Unlike the race bike though, the RD's nitrogen-charged Monoshock is foreshortened like that of a TT250, and only its spring preload is adjustable.

Compared to previous RD frames, the LC's chassis is just an inch longer and uses

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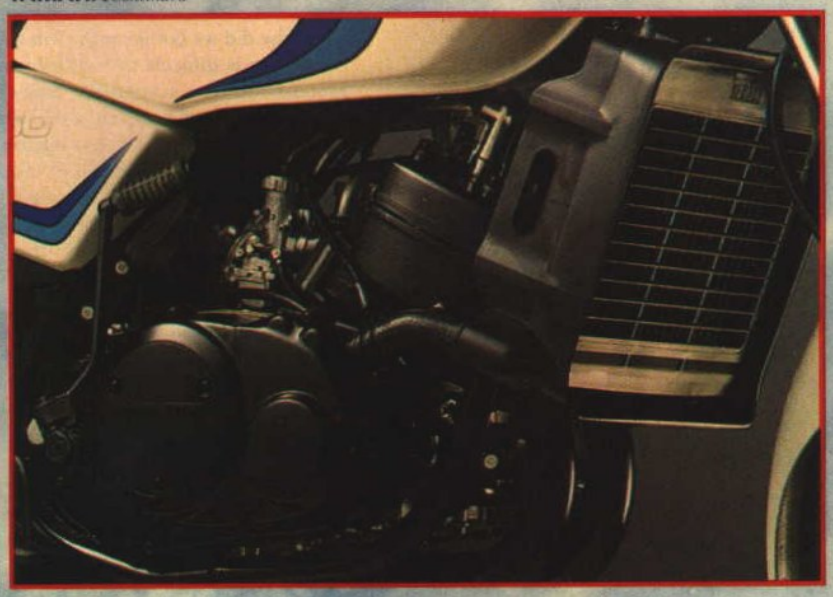
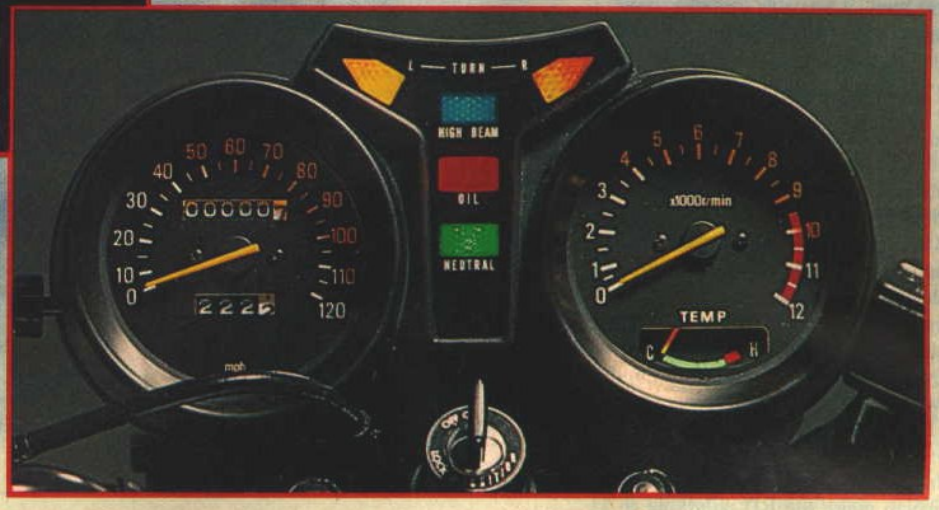


Passport to TZ-Fantasyland

With a Kenny Roberts-autograph riding position, a demanding 2000-rpm wide powerband, and a firm Monoshock rear suspension, it's just as well that the RD's American visa is stamped "For Racing Only."

Continued


YAMAHA
RD 350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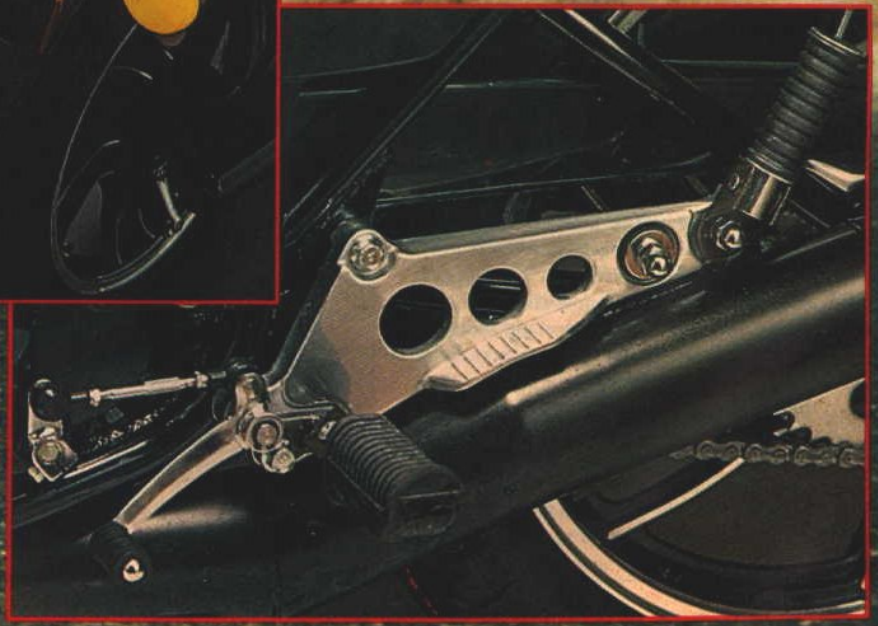


Portrait of a Two-Stroke Obsession

• Yamaha introduced its 350cc R5 in 1970 as a production replica of its racing bikes, meant to be the best-handling Japanese bike ever built. It was able to make its 350 trim instead of oversized like the YR-series because the 650cc XS-1 four-stroke had taken over the burden of being the "big" bike in the lineup. Yet even with this commitment to excellence in the R5, Yamaha was still worried whether Americans would understand the bike. So they made it purple and white and styled it heavily.

This sort of identity crisis plagued the Yamaha throughout its evolution from the R5 to the RD350 to the RD400. Its performance always earned the allegiance of sporting riders, but tastes changed and the motorcycle didn't, which meant fewer middlebrow riders found a reason to buy an RD over a Honda CB350. Sure, the RD would handle; but it wouldn't sell.

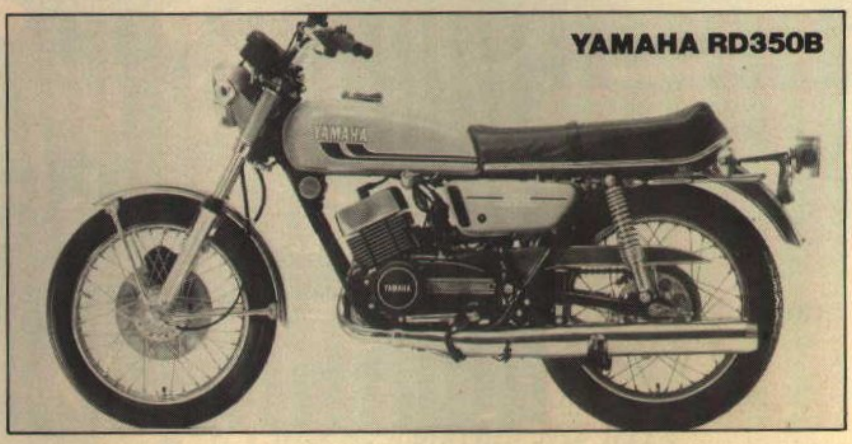
With the 1976 RD400C Yamaha tried one last time to make the RD palatable to a wide audience and failed. The RD400E and RD400F got the sporting togs that RD's deserved all along, but Yamaha had lost interest. Only 5000 units of the Daytona Special were sold in the U.S., guaranteeing its failure even though the bike found its natural audience and created renewed enthusiasm for 400cc sport bikes in general and RDs in particular.

Ironically, the Daytona Special became the accepted choice of young punks in cast-off motocross helmets, OP shorts and tennis shoes just as Yamaha came to the conclusion that the bike's lack of a natural audience and expensive EPA certification made it a losing proposition in America. And so the water-cooled RD440 never made it beyond the prototype stages. Strangely enough, Honda found the 400cc sport market attractive enough to release the Hawk model just as the RD disappeared.

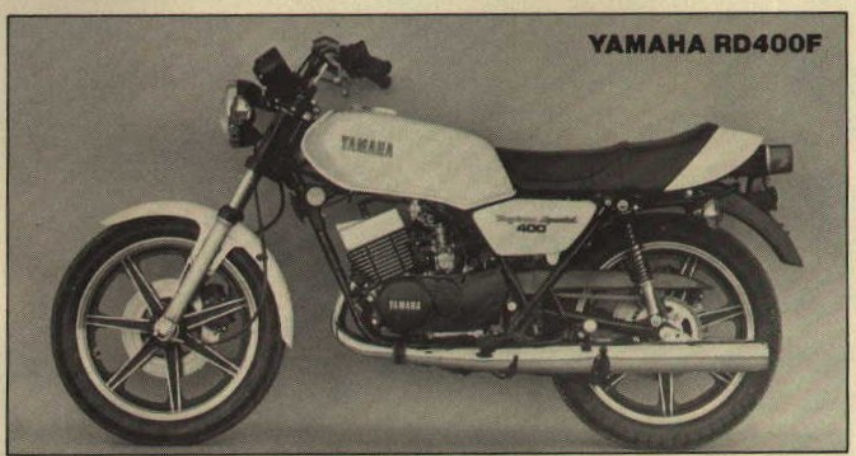
The accompanying pictures trace the evolution of the most exciting 400cc motorcycle ever built. With the clarity of hindsight, we can see now that Yamaha should have left well enough alone and continued to build the 350cc two-stroke twin just for sporting riders. Now it appears that the RD tradition must be handed over to the racetracks where RD production racers thrive still, reminders of times when racer-replicas could be purchased at your local Yamaha store.

—Michael Jordan


YAMAHA R5


YAMAHA RD350B


YAMAHA RD400C


YAMAHA RD400F

• When the R5 was introduced in 1970, it was a revelation. The racing RD56 produced the frame layout; racing also dictated the engine's design. And yet compared to contemporary two-strokes, the primative (pre-reed valve), peaky, vibrating, plug-fouling R5 seemed to be the model of docility, praised by many for its wide power-band. Only the drum brakes were regarded as sub-par.

The "American Wurlitzer" styling with its jukebox detailing did raise a few eyebrows, however, as did the pearl-and-lavender paint. Even so, the bike seemed as sleek as any GP racer of the time.

Importer: Yamaha International Corp.
P.O. Box 54540
Los Angeles, California 90054

Category	street
Suggested retail price:	$779
Engine type	two-stroke vertical twin
Port arrangement	one piston-controlled intake, four transfers, one exhaust
Bore and stroke	64.0mm x 54.0mm
Displacement	347.4cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	5-speed
Front fork/wheel travel	34mm stanchion tube diameter
Rear shocks/wheel travel	3-way adjustable spring preload
Wheelbase	52.8 in. (1341mm)
Seat height	31.1 in. (790mm)
Weight	326 lbs. (147kg)
Best ¼-mile acceleration	15.49 sec., 81.08 mph (130 kph)
Available colors	white with lavender

• In 1975, the RD350B represented the apogee of the RD's development as a performance bike. Reed-valve induction and a six-speed gearbox permitted the use of more radical port timing and a redline of 8500 rpm, 1500 rpm higher than before. A fixed hydraulic damper had been fitted to slow handling somewhat, but the bike still had a reputation for hair-trigger responses. A supremely powerful front disc brake was designed to keep you out of trouble, though.

Unfortunately, the RD350B arrived just in time for a fuel crisis and an emphasis on commuter bikes, which made it the wrong bike at the wrong time.

Importer: Yamaha International Corp.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price:	$1211
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfer, one booster transfer, one exhaust
Bore and stroke	64.0mm x 54.0mm
Displacement	347.4cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	34mm stanchion tube diameter/4.6 in. (117mm)
Rear shocks/wheel travel	3-way adjustable spring preload/2.7 in. (69mm)
Wheelbase	52.1 to 53.2 in. (1323 to 1351mm)
Seat height	31.1 in. (790mm)
Weight	327 lbs. (149kg)
Best ¼-mile acceleration	14.5 sec., 90.0 mph (145 kph)
Available colors	orange with white

• With the 1976 C-model, Yamaha hoped to make the two-stroke acceptable to everybody. The larger, longer-stroke engine with reduced compression produced more tractable power and better fuel mileage, but at the price of a 1000-rpm lower rev limit and a slower quarter-mile time.

There were also many changes made to the chassis. First, the engine was moved forward to reduce a tendency toward wheelies. Then came cast wheels and disc brakes fore and aft. Softer suspension and anti-stiction bushings for the fork were part of the package. Most important to the RD were a new soft seat and rubber engine mounting.

Importer: Yamaha International Corp.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price:	$1219
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke	64.0mm x 62.0mm
Displacement	398.9cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel trave	34mm stanchion tube diameter/4.8 in. (122mm)
Rear shocks/wheel trave	5-way adjustable spring preload/3.4 in. (86mm)
Wheelbase	52.4 to 53.4 in. (1331 to 1356mm)
Seat height	32.1 in. (815mm)
Weight	357 lbs. (162kg)
Best ¼-mile acceleration	14.31 sec., 89.3 mph (144 kph)
Available colors	red and green

• Kenny Roberts rode the Daytona Special onto the stage at Yamaha's 1979 dealer convention, indicating that at last the RD had rediscovered its natural audience. Besides the styling and flex-free fork from the XS400, the strongest indication of its new performance aspirations was the relocation of the footpegs from a bracket beneath the pipes—which often levered the rear wheel off the ground in a corner—to a conventional mount.

Yet even with a new, torquier, more powerful engine came a harbinger of the RD's demise: A complicated air emissions linkage on carburetors and exhaust ports.

Importer: Yamaha Motor Corp. U.S.A.
6600 Orangethorpe Ave.
Buena Park, California 90620

Category	street
Suggested retail price	$1696
Engine type	two-stroke vertical twin
Port arrangement	one reed-valve-controlled intake, four transfers, one booster transfer, one exhaust
Bore and stroke	64.0mm x 62.0mm
Displacement	398.9cc
Carburetion	two 28mm Mikuni slide/needle
Gearbox	6-speed
Front fork/wheel travel	35mm stanchion tube diameter/5.2 in. (132mm)
Rear shocks/wheel travel	5-way adjustable spring preload/3.8 in. (96mm)
Wheelbase	52.2 to 53.4 in. (1326 to 1356mm)
Seat height	31.7 in. (806mm)
Weight	355 lbs. (161kg)
Best ¼-mile acceleratic	14.16 sec., 90.2 mph (145 kph)
Available colors	white with red

fractionally quicker steering geometry, yet the difference between the chassis of the RD350LC and that of an RD400F is nothing less than astounding. For all its merits as a boy-racer, the RD400 combined hair-trigger steering with a soft suspension meant for freeway riding. A series of bumps at speed would unleash a diabolical wiggle from the rear end as the short-lived shocks worked against a flexible swingarm. In contrast, the LC chassis just hugs the ground while going around a corner. The Monoshock's impact on swingarm flex and rear-wheel deflection apparently is just as significant on a street bike as on a dirt bike. The RD350LC still steers with the same quickness Yamahas are noted for, but the slightly longer wheelbase and Monoshock rear suspension keep it from darting around like an RD400. The slightly higher *cg* imposed by the Monoshock also lends the bike a further measure of stability.

Suspension rates play a significant role in the LC's high-speed personality, as well. Occasionally, the Monoshock will prove a little short on rebound damping even for 160-pound riders, yet the damping is otherwise fairly firm, recalling an RD350 rather than the mushy RD400. The fork feels resilient but firm in much the same way. Naturally, this means you can expect a measure of harshness, especially in response to abrupt inputs.

When it comes to detailing, the LC's riding position produces the magic mean between braced and crouched, just like the Euro-XJ650 tested last month. The shape of the seat lets you move around on the bike with the effortlessness of Kenny Roberts. The gearshift linkage proves a little notchy and it's almost impossible to locate neutral because of the gearbox's weak detents. The powerful but progressive dual-disc front brake is capable of standing the bike on its nose without locking the front tire, making the rear brake largely ornamental. Only the Yokohama tires fail to live up to the TZ image. They skitter and slide long before the centerstand comes close to scraping the pavement.

Once you cut to the quick of the RD350LC's personality, you have to admit it's probably not the perfect motorcycle for everyday use. As one Yamaha spokesman commented, it's built for people who appreciate two-stroke power—and that means a kind of exaggerated peakiness that's supposed to be synonomous with high performance. Make a mistake while riding into a corner and you must downshift at least twice to regain your momentum. And after about 30 minutes, the handlebar gets very tingly and the suspension's harshness becomes apparent. Then

Continued

The Smuggler's Handbook

• If you plan on bringing a funny motorcycle—like our Yamaha RD350LC—into the country for use other than as an expensive wall display, you will have to deal with three branches of the Federal Government: Customs, Department of Transportation and Environmental Protection Agency. Prepare yourself for an arduous lesson in Practical Civics. Be ready to have your long distance calls put on extended hold or simply disconnected—ours were. Don't be surprised at conflicting information—we no longer are. Remember, above all, the feds wrote the rule book and absolutely own the game and, like the man said, it's the only one in town. You will play it their way, by their rules, or you simply won't play it at all. If this sounds like them against us—when they're *supposed* to be on our side—it is. It's also fact. Accept it before you begin anything else. Or forget about that exotic motorcycle.

Jas Rarewala accepts and deals with it. In return, he has a thriving business bringing expensive, exotic cars into compliance with U.S. regulations. How thriving? If his firm, Automotive Compliance Industries (25518 Frampton Ave., Harbor City, California 90710, (213) 539-4880) brings your Ferrari Berlinetta Boxer into DOT and EPA compliance the tab will be $22,000. That's above the price you pay for the car. It's not easy or cheap, but it is possible.

It is also possible with bikes. Since there have been few cases of single, non-complying motorcycles brought into the country for street use, there is little experience to draw on in this regard. But fortunately, according to Rarewala, much of what has been done with cars can be applied to motorcycles; the regulations apply to both four and two wheels, only the specifics differ.

When the bike arrives in the United States you must fill out two sets of forms to get it through Customs; NHTSA HS7 and EPA 3520-1. On these forms are several boxes to check, indicating your appraisal of the bike's intended use, such as racing, display, research, and so on. For an individual, the easiest way to get it out of Customs is to tell them you want to race it. If the bike is obviously a racer, there's usually no problem and, after paying the necessary duties and fees, you should be able to load it onto your truck. However, if it is not obviously a racing bike things can be more difficult. This used to be an old tongue-in-cheek ploy, in which you told some unsuspecting Customs official you really, honestly, sir, were going to race the thing—and then you drove home laughing.

No more. As Rarewala says, "Customs determines what a race machine is. They're not stupid; they've gotten very smart about it." Which means experience has taught them how to spot ringers. So, if you tell Customs you are going to use an obviously production bike in racing, be prepared to show your competition license, to back it up with solid information on the class and type of racing, and to sign an affidavit that the vehicle will never be registered for street use. With CYCLE GUIDE's RD350LC there wasn't much trouble. That does not mean it will be easy for everyone else.

For potential street use, however, on both the DOT and EPA forms you will have to check the box indicating the bike is under bond, pending compliance. For assistance, we suggest contacting a customs broker, preferably one who deals with vehicles. Customs will require a bond equal to the full value of the bike plus duty and you must have the original bill of sale and registration from wherever you bought it to prove ownership. (If you originally got it through Customs under the pretext of racing, you *are* allowed to verify you have changed your mind. However, you must go back to Customs and begin again with this procedure; in effect, having it enter the country again.) Once you have posted the bond and filled out the forms you can take it out of Customs. "And now," says Rarewala somewhat ominously, "the clock starts ticking." You have 120 days to bring it into compliance with the EPA and DOT. Within about four weeks both agencies will send you a packet of forms and information on what is required. If you wait until then to start you're down to less than 100 days. For a preview of the applicable DOT regulations, find yourself a copy of the 1191-page Code of Federal Regulations, Title 49, Parts 200-999. You are concerned with Part 571, which applies to safety standards.

DOT is interested in structural, mechanical and safety features, such as lighting, instrumentation, location and operation of controls, tire and wheel specifications, and the braking system. On some bikes these will be minimal concerns. On others it can mean drastic re-engineering of the motorcycle—the shift lever must be on the left and shift upward, the speedometer needle must rotate clockwise and have mph designations on 10-mph increments with marks showing 5-mph increments.

EPA wants the air clean, and satisfying emissions standards to make your bike streetable will be tougher than complying with DOT regulations. Here, you need an expert, some person or organization with the capability to design, build, test and verify an emissions control system that will pass requirements. To understand the depth of this, remember that Yamaha decided not to bring the 350 into the U.S. largely due to emissions regulations. This does not mean that certifying the 350 was impossible, simply that the expense involved was not justifiable when compared to the potential return on sales.

If you have a bike that resembles one available as a U.S. model, it will be easiest to have the manufacturer install all those necessary parts to make it, essentially, a U.S. version. If you don't, you're on your own, which is why you need someone like Rarewala. And it isn't enough the bike meet the standards, it must pass them in a certified lab for proof; this lab test alone can cost nearly $1,000.

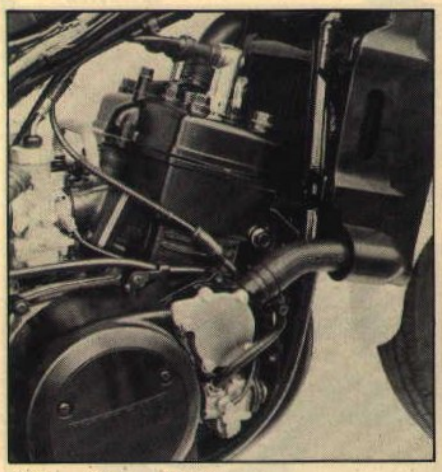
After satisfying DOT and EPA requirements, and submitting all the necessary paperwork certifying so, if DOT and EPA each accept your test results and engineering data they will mail a bond release to Customs, which then contacts the bonding company, the bonds are released and at that time the bike is legal. A trip to the local DMV to register it and you're home (but not free). One important point: The vehicle must meet only those standards in effect on its date of manufacture, which is an advantage to bringing in an older bike subject to less stringent regulations.

By the way, it is possible to register and license the bike with the local DMV without satisfying either DOT or EPA, since not all arms of the government know what the others are doing. Get it out of Customs under the pretext of racing, take the bike, registration, bill of sale and manufacturer's statement of origin to the DMV, verify the serial numbers and ownership, and you have a license tag. But it's not the smart move. If you let it go at that and don't bring the bike into compliance within 120 days and are caught, you've got big troubles. You might be granted another 60 days, but that definitely is the limit, and at that time you forfeit the bond, suffer a fine, and Customs will seize the bike and give you 24 hours to provide an address out of the country where you want it shipped. You also get to pay for shipping. And at the worst case the bike can be shredded into oblivion.

What about our 350? The liquid-cooled two-stroke poses special technical problems the factory chose to bypass, but Rarewala thinks he could probably make it street legal, by treating the exhaust gases downstream, for less than $1,000. Combined with the lab test fee, that would have the bike streetable for less than $2,000 total.

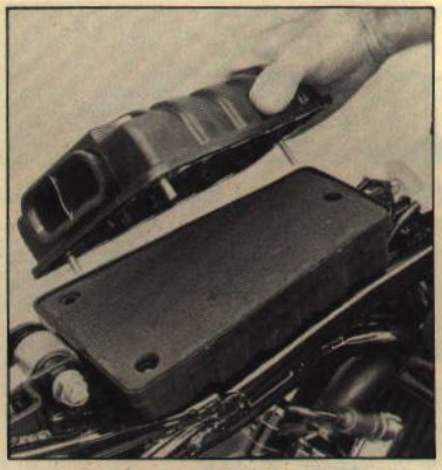
Dealing with the Feddle Gummint can be an exasperating chore at best, one where you often have to swallow hard. If you can put up with it, even while watching—and fighting—the spectre of your-tax-dollars-not-at-work, and have the cash to pay for every step along the way, the reward can be the enjoyment of owning something that you won't see on every street corner.

—Don Fuller



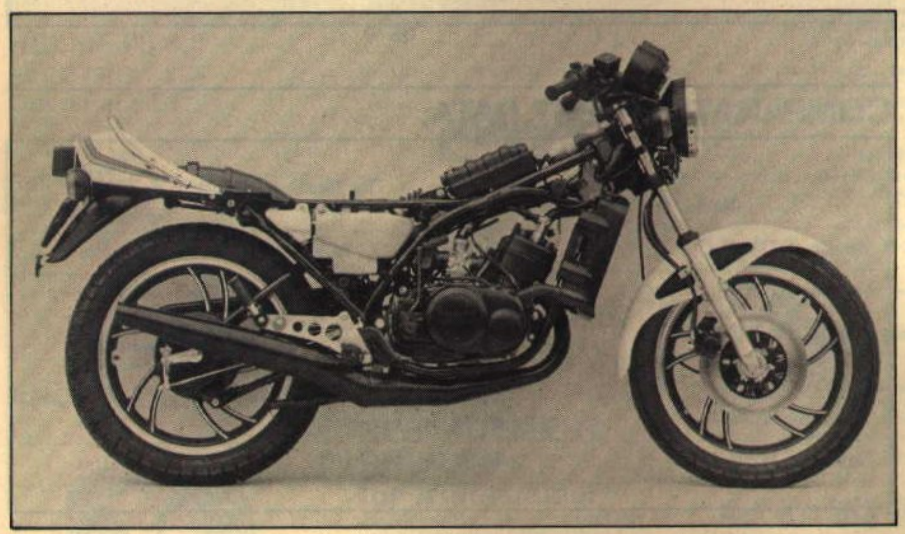
Finless twin is all business

Saving weight with plastic covers.



Foam-filled air box atop the frame

Safeguarding a 2000-rpm powerband.



Five-way adjustable preload Monoshock stuffed in a TZ-inspired frame

Rebound is a little soft, but still, closest yet to racetrack standards.

there's the fact that the engine refuses to cruise at 60 mph in anything taller than third gear. Also, you have to fold up the right footpeg before you can kick the engine over. The RD350LC is simply too much like a race bike to please very many people as everyday transportation.

Yet at the same time, the LC offers racebike virtues that express perfectly what we mean when we say high performance. When you strafe an apex on the LC, both ends of the motorcycle work together in a balanced way no previous RD could ever duplicate. Transitions are so easy you'll think you have the talent of a GP rider. Every move the LC's chassis makes is crisp, sure and confidence-inspiring. It's immensely satisfying to skewer an apex with a rapier-like thrust instead of thrashing away with some unwieldy cutlass of a hyperbike.

This is the quality CG's riders have longed for ever since we saw one of the first matte-black LC prototypes slip out of Yamaha's Iwata R&D facility headed toward the Yamaha test course—one of the most demanding roadracing tracks in the world. Even though the LC owes as much to previous RDs as to the TZ racers, the LC lives up to this promise of raceworthiness. As one of the reference points when high-speed handling is discussed, it reminds us of the benefits to be derived from bikes with light weight and lower center of gravity than the average DOHC four-stroke.

It might be true that the two-stroke street bike is irrevocably gone from the shores of America. It could be that Europe and Japan understand the language of the two-stroke better than we can. Even so, the LC proves that the RD-series should be perpetuated in this country in chassis if not in engine. Because as long as Yamaha builds roadracing bikes, there will be hard-core sporting riders who demand a piece of the action. The RD350LC gives it to them, and in a language that everyone—not just two-stroke devotees—can understand. •

Ride Review

• A world without water-cooled RDs would be noticeably duller, a few steps closer to living in shades of tan and gray. No other motorcycle allows you to so nearly reproduce the sensations of a full-on road-racer while still dangling the carrot of street legality—at least in some more-civilized countries. I'm fascinated with the RD's roadracy kinesthetics—incredible lean angles, smooth, faultless braking and the letter-perfect riding position—but that doesn't mean that I'd want it on the street. Racers belong on the racetrack, even thinly disguised racers like the RD. Coaxing one through slow-moving traffic would be hell. The powerband is thinner than a bureaucrat's promise; fall off the 7000-rpm ledge and you need serious gearbox rowing to keep moving. It's just too much effort to be fun. So give me an LC, Yamaha, but let me keep it at the track. *—Larry Works*

• The first lap around Willow Springs told the story: The RD350 L/C is nothing more than a race bike. It has the same basic powerband as my old—and incredibly fast, thanks to some magical porting—air-cooled RD350 racer. The suspension is taut, and when you point the front wheel into a turn it goes exactly where you want it.

Port specs and trick suspension aside, the true measure of a racer is how quickly it circles the course. And here, the stopwatch is the final authority. My best L/C time would have put me in the top 10 of an AFM 430cc production sprint. What slowed me down during our testing was that the stock Yokohama tires slip and slide through turns. Give me a set of good treads, and I could stop the clock at trophy-winning time. That's what I appreciate about the L/C—it's race-ready with just good tires and fresh plugs. *—Dain Gingerelli*

• The RD350LC could bankrupt me. It wouldn't be expensive to buy, but I don't think I could afford the speeding tickets. The little waterpumper doesn't have the sheer speed potential of a CBX or GS1100, true, but it will still exceed twice the legal maximum speed limit.

What is important is that it almost *demands* to be ridden at those speeds. It does more than look like a TZ roadracer, it *performs* more like a racer than any other street motorcycle I've ever ridden. That means narrow powerbands, high revs and not a little clutch slipping.

All of which adds up to a pretty unpleasant street motorcycle. But who cares? This is the world's best repli-racer and I loved every high-revved moment aboard it. The price of owning one wouldn't be too high if only I could get a season speeding ticket.

—David Dewhurst

Continued