

CYCLE STREET TEST

BMW R100RT

● RIDING BRISKLY DOWN A CURVING, RAIN-dampened road on the way to an early-morning photo session, one of our testers, surprised by an oncoming car with its lights off, hit a helmet-sized rock right between the eyes. This happenstance pointed out two items of interest: one, the R100RT BMW, despite ample provocation, managed to stay upright; and two, the retail price of a replacement front wheel was discovered to be \$404.45. The first of these items owes to good luck, to the inherent forthrightness and manageability BMW has been building into its motorcycles for more than a half-century, and to the eight inches of travel provided by street-riding's finest front fork. The second is due in part to the difference between a country which manages its currency properly (West Germany) and one which does not (the United States).

At \$6345 the BMW R100RT is the most expensive line production motorcycle in the world—only the Harley-Davidson FLH Classic, at \$5529, is even close. The Harley is a universe unto itself and is therefore exempt, at least in the minds of its supporters, from the odious comparisons of the competitive marketplace. The Electra Glide is the Electra Glide, and if you like the way you look on it, well, they only come from one place; here is what you pay, and that's all there is to it.

The BMW—all BMWs—have a foot in the door of the same exclusive clubhouse, but what keeps them from getting in all the way is their time-honored emphasis on function. It has never been enough for a BMW to simply be German, and a BMW; it has to do well all those things that superior motorcycles do at all, and add the dimensions of resale value, longevity, manufacturing quality, uniqueness and a kind of passive haughtiness that makes it reasonable to hold one in the same esteem that, earned or not, surrounds the Mercedes-Benz.

The new RT can best be described as a full-house touring version of the RS, which is a semi-touring version of the S, which is a sporting version of the pipe rack R100T, which is a bunged-out version of the R80/7, which is a slightly



Despite its lack of acceleration, its extra-tall gearing and increased weight, the old BMW magic is still there. The R100RT can lug your gear, keep you dry, get over 47 mpg and sing the song of the open road, all at once.

overbored and subtly refined update on the discontinued 750cc model. From carburetor inlet to exhaust pipe tip, all the 100-series motorcycles share the same engine: a longitudinal, horizontally opposed, air-cooled twin which now displaces just under 60 cubic inches.

Increasingly under pressure from a faction at BMW which would like to see a powerplant of more exotic mien to counter the ever more intricate and capable large-displacement equipment coming out of Japan, the flat twin endures—and for pretty good reason: with every Eastern escalation of cylinder count, cooling system technology, power output and weight, the BMW's simple virtues become more striking. It has but two carburetors—Bing 40mm CVs—to synchronize, and four valves to adjust (the proper feeler gauge is included in the ultra-complete tool pouch). Long steel-ended aluminum pushrods, hollow tappets, and a quartet of forged steel rocker arms coordinate the valves, a meager set of components which stands in obvious contrast to the chains, sprockets, tensioners, buckets, shims and jackshafts necessary to do the same job on, for example, the Kawasaki KZ1300. A camshaft with but four bumps is carried beneath a crankshaft with but two main bearings and two throws. A single-run roller chain, idled and tensioned this year for easier maintenance, lashes cam to crank. A self-aligning Oldham coupler is interposed between the nose of the cam and the points breaker shaft, isolating the good ol' (or perhaps just ol') mechanical points from whatever harmonic disturbances may emanate from the cam or the crank. The generator is driven directly off the front of the crank; these components are grouped beneath a common cover, reposing behind the grillwork at the front of the fairing.

What makes the RT different from the RS (and \$146 more expensive) is its more elaborate fairing, the hue of its cast wheels (light gold), the height of its windscreen (which also is adjustable for rake and height), and its Krauser-BMW saddlebags and mounting paraphernalia.

The fairing is the RT's most distinctive



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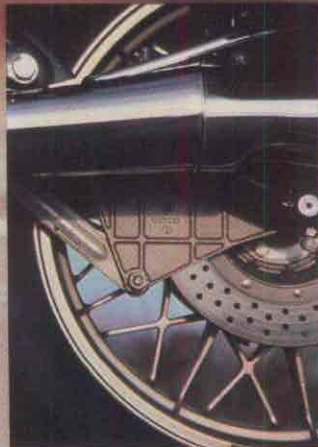
highlight. Although the slope of its nose and the orange stripes across its headlight cover match the RS's fairing, its upper section more fully encloses the rider and provides complete protection for the hands. The clock and the voltmeter are mounted on the dash directly below the windscreen; they are flanked by flat spring-steel fingers which provide the windshield's adjustability.

One of our complaints about the RS concerned the shape and height of the windscreen. We felt it was too short to provide Windjammer-level protection, too tall to replicate the café idiom, and we found that the curled top lip created turbulence and noise right at helmet level. None of these criticisms applies to the RT. It carries a full-height screen, and while we weren't thrilled by the two splayed vertical contours which produce noticeable distortion, we were very impressed by the degree to which the screen could be adjusted to suit conditions.

The flat steel fingers are attached to the corners of the screen. They ride in channeling mechanisms screwed to the fairing body, and their perforations index on pins. There are four adjustment heights and, since the screen pivots on a two-pronged metal plate in the middle, four rake angles



"At home on the long, the fast, the uncluttered and the unpatrolled, the RT is less so just picking around. The best word to describe its behavior in the twisties is 'truculent.' "





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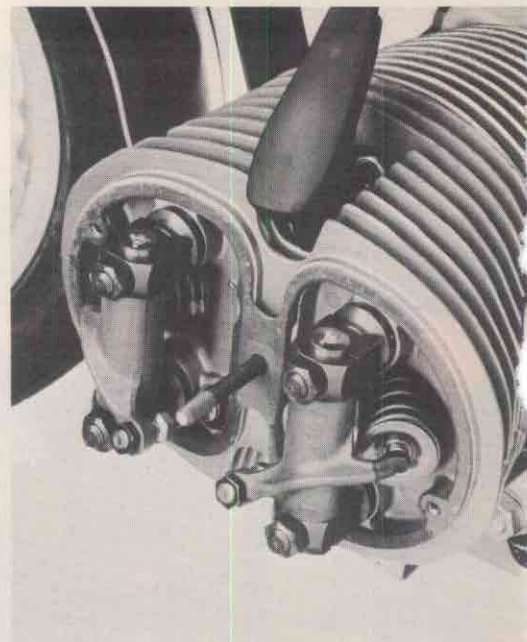
as well. We found that by carefully setting the screen height at just below eye level, the fairing would provide an average-sized rider with the next best thing to a still-air pocket. Why not set it there, and forget it? Because certain conditions—like riding through cities, or splitting traffic—call for a bit more unobstructed visibility. The screen can be lowered easily while underway—simply pry the fingers toward you and gravity takes care of the rest—but raising the screen is a bit trickier, since you have to work the fingers with one hand and lift the screen with the other.

Flanking the forward portion of the fuel tank is a pair of lockable compartments, each with a capacity of six liters. These are called "oddments compartments" in BMW's literature, and they are quite useful for the host of small items necessary for any decent-length trip. Unfortunately, access to them while cruising is difficult. The ones fitted to our test bike do not pivot; rather, they are fully detachable, secured by a rotating tang operated by key. Perhaps experience could produce the sure-fingeredness necessary to get stuff out and put stuff back without pulling off the road and stopping; we couldn't do it. Even so, an extra 12 liters of storage capacity is nothing to sniff at.

Forward and directly above the com-



Valve train (left); tappet, pushrod, rocker arm and valve. It's just as simple when it's assembled (below).

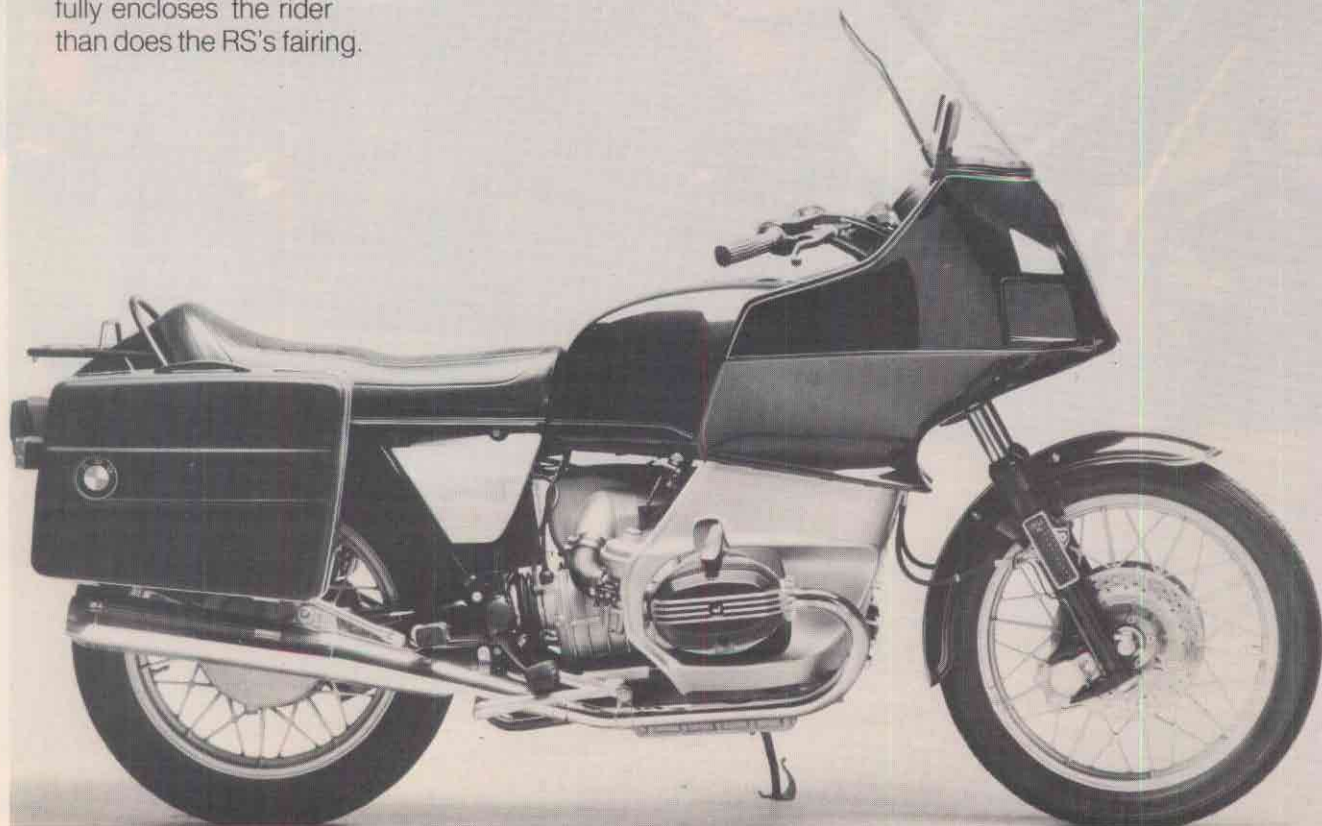


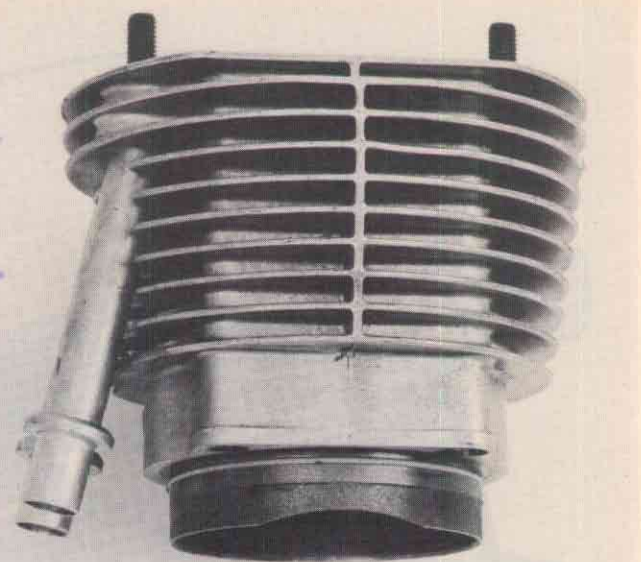
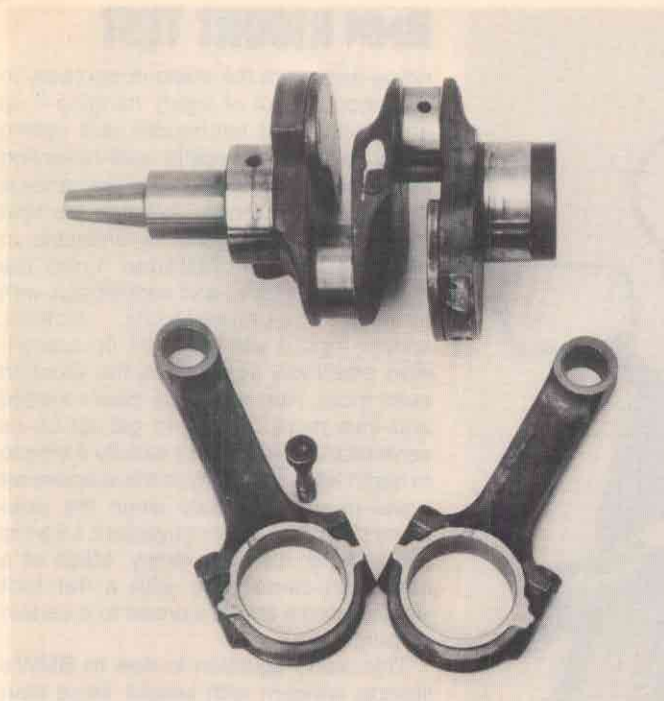
partments are the fresh air vents, fed by screened tunnels which open directly beneath the turn signal lenses. In really mucky going the vents can be blocked by optional inserts fitted on the outside of the fairing; otherwise the flow of air can be controlled by semi-circular plastic butterfly valves mounted in swivelling interior

housings. Turn the knob in the middle of the housing counterclockwise, and the valves close; clockwise, and they open. We suspect their value will be most evident during warm-weather tripping; it was cold when we tested the RT, and the vents stayed closed.

Carried on racks at the rear of the RT

The RT's fairing has an upper section which more fully encloses the rider than does the RS's fairing.





Extra counterweight material is riveted (left) to inner surfaces of crank cheeks. Crank and rods are made of drop-forged steel. Crank turns in three-layer bearings; rod bearings are four layers thick. Rods are I-section. This year's cylinders (above) have additional circumferential sleeve O-rings.

are two really fine detaching saddlebags. Designed and manufactured for BMW by Mike Krauser, the bags are light (12.5 pounds per pair), roomy (1975 cubic-inch capacity per bag, among the biggest you can buy, and capable of carrying a full-coverage helmet), convenient and handsome. They ranked second only to the

Samsonites in our recent saddlebag comparison. The bags feature flush-mounted locks, scissoring support braces for the lids, a pair of interior securing straps, and spring-loaded locks attaching them to their brackets. One of the realities of saddlebagdom is that they can interfere with seats which pivot on hinges. The BMW has such a seat; to open it, the right saddlebag must be removed. But since the bag comes off in about three seconds flat, it is hardly an inconvenience.

Even though Japanese motorcycles like the Yamaha XS Eleven, the Suzuki GS1000 and GS850, and of course the now-veteran Honda GL1000 have made deep inroads into territory once considered the exclusive habitat of the BMW, the big German twin still rates very, very high in terms of delivering long-distance delight. The Eleven has a terrific seat; it's the only one that's close to the BMW's, which has the characteristic of becoming more comfortable the longer you're on it.

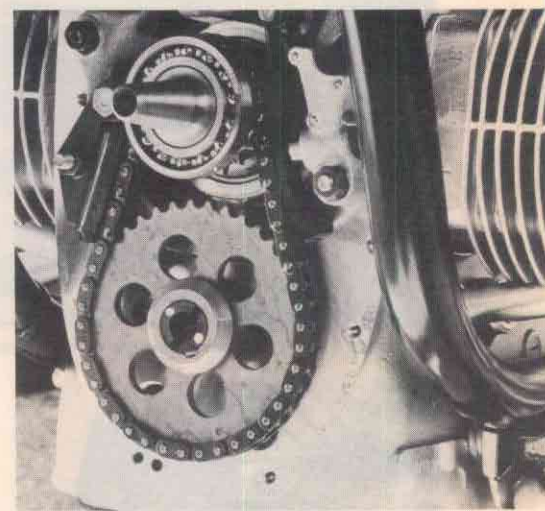
At first perch, the RT's seat feels, well, firm. And it is. It looks, well, small. And it is. But it has the knack of adjusting to the contours of the buttocks, and when other softer saddles have mushed down to the point where the rider is changing his position every few miles, the BMW's continues to provide fatigue-resisting support. The boundary stiffness is especially appealing. The seat feels stiffer around the edges than it does in the middle, and this additional peripheral firmness in the under-thigh area helps keep the rider's knees tucked in close.

Sooner or later, BMW's engineers are going to expend the same energy on the bike's stands as they have on the seat. Both of them—the centerstand and the sidestand—need a lot of work. The centerstand, made of thinwall tubing for lightness, is too narrow across the feet.

Parking on a lateral incline is not good business with this bike, and a gusting sidewind sets it rocking ominously. The sidestand is even worse. Because it is obscured by the left cylinder and head, BMW in 1973 redesigned it to retract by itself whenever the bike's weight was shifted upright. Given the alternative—



Beemer pistons, made either by Mahle or Kolben Schmidt, use external pin retainers and three rings.



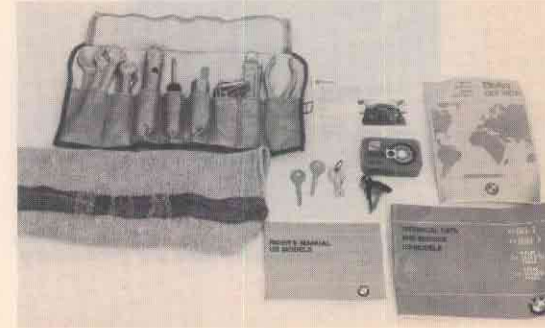
RT's cam drive chain is single-row, with a guide and a tensioner. Chain has a master link for easier service.



Power from the clutch is transmitted to the gearbox with this shock-absorber-equipped input shaft.



The RT's all-new shock-equipped driveshaft cushions rear end and gearbox, and helps gear disengagement.



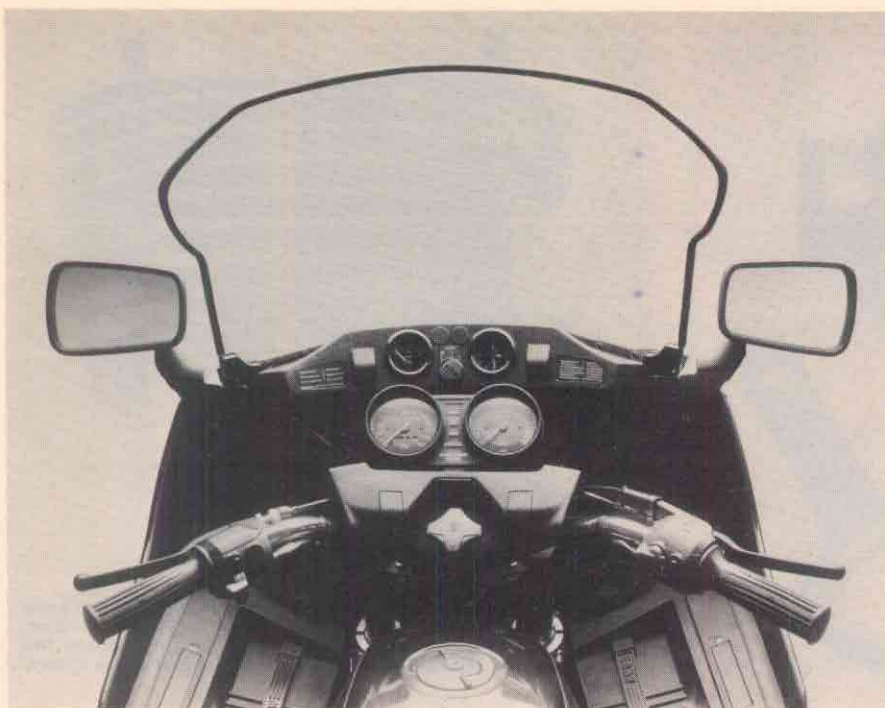
This is all the stuff that's under the seat: tools, a rag, keys, tire patch kit, service and owner's manuals.

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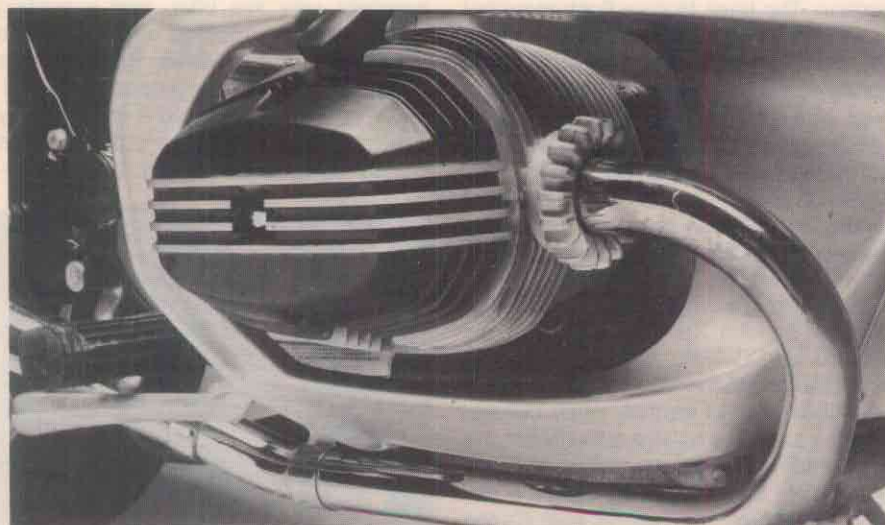
riding away with the stand down (easy to do, since it's out of sight), hanging it up around the first left-hander and calling every lawyer in a necktie—self-retracting makes sense. What doesn't make sense is the sidestand's length. It holds the bike much too vertical, and is unusable in nearly every circumstance. Load the bike's storage bins and saddlebags with touring equipment—tools, clothes, spares—and it sits lower on its suspension, effectively aggravating the situation even more. And when the bike's loaded and thus more difficult to get up on its centerstand—and it's not exactly a breeze to begin with, due partly to the suspension travel—that is precisely when the sidestand should be most convenient. Like the centerstand, it's a bit flimsy. Made of a cast multi-bend tube with a flat foot welded on the end, it's prone to a certain amount of flex.

This stand situation is due to BMW's lifelong concern with weight. More than any other street bike manufacturer (except Honda, with the CBX), BMW has dedicated itself to a war on unnecessary poundage, and as of 1978 they were spectacularly successful. The 1979 RT shows the same concern; it has pressure-molded fiberglass fenders, a lightweight seatbase and tail section, an aluminum lower triple clamp, and a host of other small detail parts done expensively in light alloys. Still, weight is creeping up: the RT comes into the ring at 567 pounds full of gas (to be fair, the bike's 6.3 gallons account for just under 40 pounds), or 60 pounds heavier than the 1977 R100S, which had the same fuel capacity. Where did it come from? Certainly from the fairing, saddlebags and attendant bracketry; most of the remainder is contributed by the wheels, which are monuments to strength and to the metal caster's art, but which are six pounds heavier than the '77 R100S's alloy rims and stainless spokes. (BMW's brochure says the RT weighs 472 pounds dry—95 pounds less than the bike's wet weight. The gas weighs 40 pounds. If it's carrying 55 pounds of oil in the engine, shocks and front fork, that oil must be some special blend laced with large chunks of lead.)

BMW's come to market with improvements which can be labeled either lavish or subtle, depending on the year. The 1979 changes are of the latter type. The cam drive chain and tensioning apparatus, a microscopically different cam shaft, additional cylinder O-rings, the coupler between the camshaft and the points breaker: these are refinements of almost invisible delicacy. But there's a change in the drive shaft that's substantial, ingenious, and welcome. This year, all BMWs are propelled by a shaft fitted with a ramped coupler-type shock absorber. The coupler, similar in design to the one on the transmission's input shaft, is



The RT has a terrific cockpit: adjustable windscreen, instruments galore, and streamlined rear-views.



To remove RT's (or RS's) fairing lowers, exhaust system must be removed. Occasionally lowers can drag.



Krauser/BMW bags are roomy, lockable, relatively water-tight, one-key-detachable and good-looking.



"Oddments compartment" holds about six liters and needs a hinge. Air vent closes with a butterfly valve.

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loaded with a coil spring. It performs three functions: it cushions sudden torque surges coming at the rear end from the gearbox, it absorbs shocks coming back the other way, and it helps disengage the gearbox teeth during shifting, making for clunk-free progress from first to fifth. It's a problem BMW has been working on for years. Changing flywheel weight, adding a fifth ratio, and fussing with engaging dogs have all helped. None has helped as much as this coupler.

There are among the BMW faithful those who feel the 750cc twin was the epitome of the marque; that it provided the optimum blending of performance, weight, running smoothness, economy and all-around charm. But faced with ever-larger displacements thundering out

(Continued on page 56)



Make and model	BMW R100 RT	Wheelbase	57.7 in. (1465.6mm)
Price, suggested retail	\$6345.00	Rake/trail	28.5°/3.7 in. (95mm)
PERFORMANCE		Brake, front	Perforated double disc, 10.2-in. diameter, double floating calipers
Standing start 1/4-mile	14.16 sec. @ 92.68 mph	rear	Perforated single disc, 10.2-in. diameter, single floating caliper
Engine rpm @ 60 mph, top gear	3439.6 rpm	Wheel, front	1.85 B 19 aluminum casting
Average fuel consumption rate	47.1 mpg	rear	2.50 B 18 aluminum casting
Cruising range, main/reserve	261.4/37.2 mi. (420.6/59.9 km)	Tire, front	3.25 H19 Rille 12 Metzeler
Load capacity (GVWR less curb weight)	314 lbs. (142.4 kg)	rear	4.00 H18 C66 Metzeler
Maximum speed in gears @ engine redline	(1) 43.48, (2) 66.89, (3) 92.44, (4) 114.50, (5) 127.34	Seat height	787.4mm (31.0 in.)
ENGINE		Ground clearance	165mm (6.5 in.)
Type	Air-cooled twin-cylinder 4-stroke horizontally opposed shaft-drive	Fuel capacity, main/reserve	21.0/3.0 liters (5.55/0.79 gal.)
Bore and stroke	94 x 70.6mm (3.70 x 2.78 in.)	Curb weight, full tank	567 lbs. (257.2 kg.)
Piston displacement	980cc (59.80 cu. in.)	Test weight	732 lbs. (332.0 kg.)
Compression ratio	9.5:1	ELECTRICAL	
Carburetion	(2) Bing constant vacuum V94, 40mm	Power source	280 Watt, 3-phase alternator
Exhaust system	Two-into-two, one crossover	Charge control	Points-type voltage regulator
Ignition	Battery and coil, centrifugal advance	Headlight beams, high/low	60/55W
Air filtration	Micronic paper, replaceable	Tail/stop lights	5/21W
Oil filtration	Micronic paper, replaceable	Battery	12V 28AH
Oil capacity	2.25 liters (2.38 qts.)	INSTRUMENTS	
TRANSMISSION		Includes	Speedometer, odometer, resettable trip-meter, voltmeter, clock, warning lights for turn signals, oil pressure, generator, neutral and brake failure
Type	Five-speed constant mesh, 200mm single-plate dry clutch	Speedometer error, 30 mph indicated, actual	25.37 mph
Final drive	Enclosed shaft with torsional damper, ring and pinion with "Pallid" tooth design	60 mph indicated, actual	52.94 mph
Gear ratios, overall	(1) 12.80 (2) 8.32 (3) 6.02 (4) 4.86 (5) 4.37	CUSTOMER SERVICE CONTACT	
CHASSIS		Customer Service Department	
Type	Full double cradle with oval tubing, bolt-on rear frame	Butler & Smith, Inc.	
		Walnut St. & Hudson Ave.	
		Norwood, N.J. 07648	
		phone 201-767-1223	

of Japan, incessant scrutiny by U.S. regulatory agencies and an ever-weakening dollar, bigger Beemers were inevitable. The RT carries the top-of-the-line 980cc engine, and time spent in its company clarifies the point made by the 750-philes. As piston weight, power and compression have gone up, that band in which the engine operates with perfect ease has narrowed.

The RT is fitted with the 2.91:1 rear end ratio. Its rear tire is 80.5 inches in circumference. At a corrected 55 mph, the engine is ticking over at 3160 rpm—about 800 rpm below the beginning of the RT's

maximum comfort zone, which begins at 4000 and extends to 4500 rpm. Below 4000 the engine shudders—reacts to the explosions in its combustion chambers—and above 4500 it generates a very mild, low-frequency vibration. Problem is, get the RT into that engine speed envelope where it's at its happiest and you're going between 69 and 78 mph, or red-light city no matter how much Officer Friendly may like his own BMW, and yours.

Gearing like this may have been fitted for a number of reasons: maximum noise levels, emissions limits, long-term reliability, and fuel economy are four that spring to mind as possibles. But clearly the RT

would perform better and run smoother with final drive gearing that's a bit tighter. All 100-series BMWs are fitted with the 2.91 rear. The R80/7 carries a 3.20 third member, and the R65 is fitted with a 3.44. There are also 3.00, 3.09, 3.36 and 3.56 rear ends available. They're all interchangeable. If the RT used, say, the 80's ring and pinion set, 4000 rpm would deliver a ground speed of just over 62 mph. The 3.44 rear would have you going 57 mph at 4000, which might be too radical a jump but which could serve nicely if you're contemplating a long trip pulling a trailer through the mountains.

Slightly less demanding gearing would help the RT in another way too. The engine packs a lot of compression—9.5:1—and on occasion it can be heard to be detonating at intermediate throttle settings. We tried three different brands of high test, and all three produced pinging to a greater or lesser degree, most predictably when the bike was asked to accelerate in fifth gear without benefit of a downshift. With tighter gearing, the detonation field could be crossed more quickly. Too, it would make sense for the RT to carry tighter gearing than the R100S, because it weighs more and pushes more frontal area.

If you can find a place where you can cruise in peace 70 to 80 mph—and we did—you'll find that tall gearing or no, the BMW magic is still there. For covering a lot of ground in security, confidence, comfort and with some economy (our RT averaged 47.1 mpg when ridden with sense), the BM is hard to beat. Its smooth loping pace, its seat comfort, the angle of its handlebars, its footpeg position, the whispering *basso profundo* coming from its mufflers, the strong, clean beam from the Bosch quartz halogen headlamp and the unobtrusive glow from the instruments when darkness comes—all of these contribute to a sense of Gran Turismo elegance and intimacy that still is unique in all of motorcycling. Other bikes can get you where you're going faster, or cheaper, or both. But getting where you're going has never been what motorcycling is all about. Going there is. Pick a destination a long way off, settle in at 75 mph, and the RT will give you hours in the saddle that are hard to beat for the sheer pleasure of *traveling*.

At home on the long, the fast, the uncluttered and the unpatrolled, the big BMW is less so just picking around. The degree to which the RT climbs and settles on its suspension during stop-and-go running is disconcerting to those who have not yet become accustomed to it. High is the bike's favorite gear. Although it shifts now with almost Japanese precision, gear spacing can take you by surprise, especially downshifting into second. The best word to describe its behavior in the twisties is "truculent." The RT's weight and tall gearing make its corner-to-corner acceleration uninspired to the point of

(Continued on page 60) CYCLE

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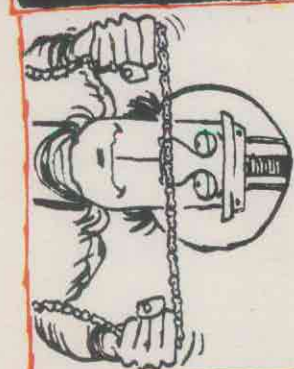
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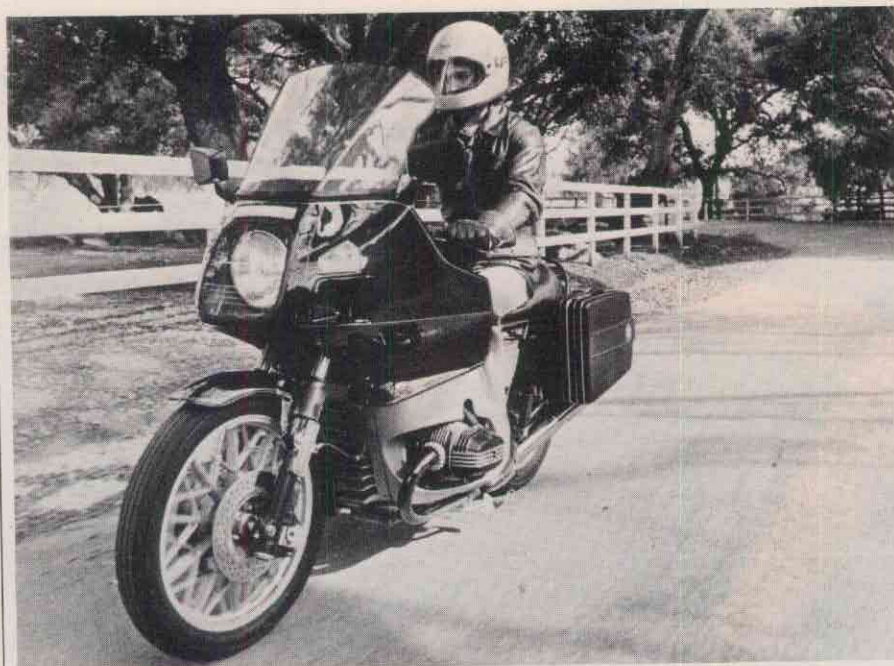
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somnolence, and the turning-braking combination is still confusing to its chassis and suspension.

Nor does it have all the cornering clearance in the world. With the shock spring preload set soft it drags the sidestand on the left and the rear brake lever on the right; jack the springs up and the RT begins to drag the fairing. It should be noted, however, that the Metzeler tires will stay with you until something flat lifts them off the ground, and they perform better than average in the rain. So does the front brake. With rotors punched full of holes in an alternating two-by-two pattern, the forward discs provide all the stopping force you could need in the dry and a level of predictability in the wet that the Japanese brake manufacturers have not yet been able to match. The rear brake assembly—including an Italian Brembo caliper (also found on Ducatis, Laverdas and Moto Guzzis)—is especially smooth, progres-

designing the turn indicator switch along conventional lines (left for left, right for right), the factory might take another shot at the headlight dimmer switch. Up gives you the high beam and down gives you the low, and below the "down" position is the headlight flasher circuit—high beam again to signal oncoming traffic, or the car in front that you're trying to pass. The flasher circuit is spring-loaded. The spring isn't strong enough, nor the detent in the "low" position firm enough. You can go for the low beam, shoot right through it, and end up burning a hole in the windshield of the oncoming car.

BMW's historically have been excellent open road motorcycles, and the RT is no exception. With a beautifully coordinated presentation of handgrip and footpeg position, a marvelous seat, bump-sucking suspension and an engine texture during cruising that is sheer delight, the R100RT in its zone of particular capability, is awfully, awfully good. If there is a prob-



sive, and well calibrated to the deceleration characteristics of the engine. Our only complaints in this area are that none of the calipers carry brake pad wear indicators, and the back brake takes longer to get to work in the wet than we'd like.

Our test RT remained oil-tight until it had to face the drag strip. After several full-blast passes, oil weep became evident around the cylinder bases on both sides. The '79 BMWs have special circumferential O-rings fitted to solve this precise problem; on our bike they must be viewed as a limited success at best. There was also an almost unnoticeable accumulation of lubricant where the speedometer cable exits the transmission housing.

Two other minor nettles: the headlight beam is not readily adjustable, which might be a bit of a problem considering the loading variations the RT will be subjected to; and while we applaud BMW for

lem—and there might be—it is that as time goes by, the BMW zone gets slimmer and slimmer. This is the narrowest Beemer we've tested in some time. It's heavy, overgeared, only adequate in traffic, more than a little sullen when asked to snap down twisting roads, and when compared to its ever-increasing Japanese big-bore opponents, it is—let's face it—stone slow.

But what it does well—traverse enormous distances while holding itself and its rider aloof from the unpleasantness and the monotony inherent in those distances—it does better than any other standard motorcycle built. It is truly a bike for the horizons.

And if you ever find yourself in pre-sunrise darkness on a wet, snaking road with a rock to run over, you could do far worse than an RT to run over it with. Especially if you find somebody else to pay for the wheel.