

**SPECIAL TEST: DG's Exotic IT175**  
**How to Keep Your Hot Bike Cool**  
**Christmas Guide to Beginner Bikes**



**Kawasaki's  
Six**

# CYCLE WORLD

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**First Test**  
**BMW R65**  
*Better Things Come  
in a Smaller Package*



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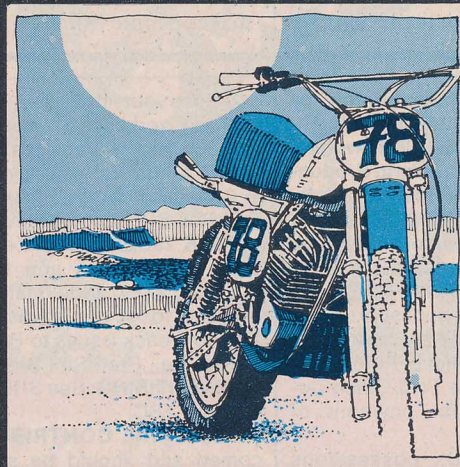
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**THE BMW R65, a portrait by Robert Monkton**



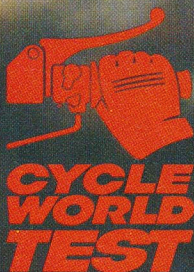
# BMW R65

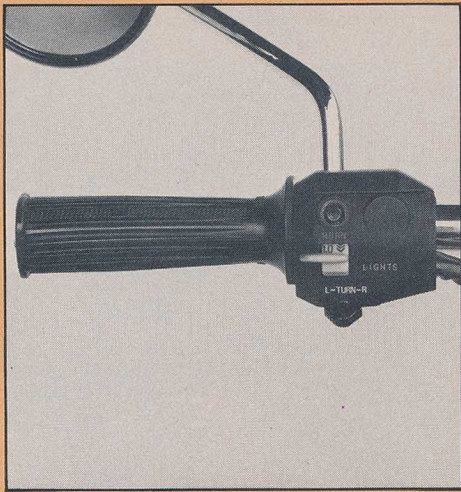
*The Bavarian Twin Gets Smaller, Lighter . . . And Better*

■ BMW's new R65 may be the company's most significant new model since the original four-stroke, horizontally - opposed, shaft-driven Twin of 1923. After years of ever-larger engines and innovations for the top-of-the-line BMWs, the R65 is smaller, lighter, more versatile, better handling and more fun than any of its larger brothers. It looks different, acts different, *is* different.

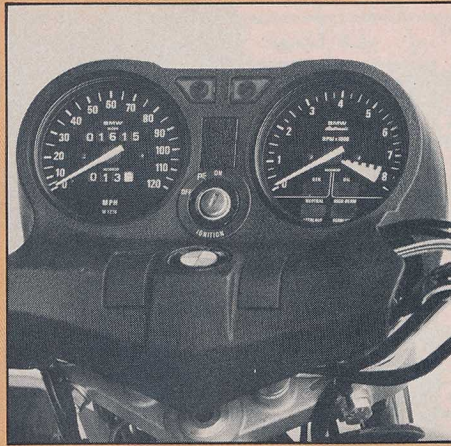
BMW earned a reputation for reliability and comfort back in the days when other motorcycles couldn't make it across town with much certainty and often used sprung seats for rear suspension. These days, just about anything from Japan will zip from sea to sea, and several machines from the Orient are more comfortable than BMWs on the interstate. Japanese motorcycles cost less, too.

But in an era of three, four and six cylinder bikes with dohc and as many carbs as pistons, BMW has stuck with the traditional, push-rod Twin and made it work. The Japanese bikes are generally faster, quicker and smoother. BMWs are >

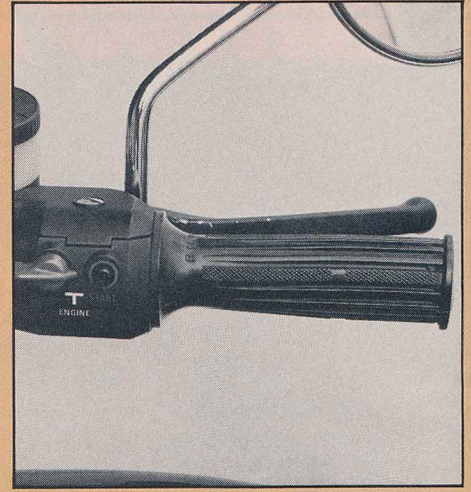




R65 controls are easier to use than those on earlier models.



Instruments are larger and easier to read; red light in tach face flashes when redline is exceeded; padded instrument dash extends over handlebars.



Handgrips are larger, smoother, reshaped.

lighter, simpler, easier to maintain, better finished and cost, in some cases, twice as much as Japanese machines of comparable size.

Paying attention to detail and keeping to the basic idea of a motorcycle as a lightweight, simple motor vehicle has preserved an enthusiastic following for BMWs in the motorcycle marketplace, in spite of exorbitant price tags on the German bikes and replacement parts. Some people will carry the price burden to own a motorcycle with perfect paint, flawless castings and detailing seldom seen in a mass-production world.

Even something as simple as the clutch lever is extraordinarily detailed. Shaped for easy reach while delivering normal travel, the lever is cast so that the cable end is inserted at the bottom, with no water-and-dirt-collecting opening facing forward.

Self-locking nuts are used. Castings are fine enough that they don't have to be painted or polished to look good, and so aren't. The cylinders are cast around the iron liners, instead of the liners being pressed in, because, according to BMW engineers, the casting process mixes the aluminum and the iron at the point of contact and insures better heat transfer.

Then, too, BMW's desire for lightness shows everywhere.

It is apparent in the R65, which weighs 455 lb. Compare that to 478 lb. for the Yamaha XS650E Twin and 493 lb. in the case of the Kawasaki KZ650 Four. The R65 is also significantly lighter than the R80/7 BMW, which weighs 486 lb.

New styling and engineering has a lot to do with the fact that the R65 is significantly lighter than other current BMW models. The R65 is smaller than the R80/7, and weighs 35 lb. less. The R80/7 is smaller than the R100S, yet weighs the same. The R80 and R100 both have 6.3-gallon gas tanks with dual petcocks. The R65 has a new, leaner, slimmer, 5.7-gallon tank with one petcock. The restyled front fender is smaller and mounts differently. Center axle front forks are all new, lack the

rubber gaiters used on the R80, use smaller splitters than the R100S, and weigh 2.2 lb. less than forks used on the /7 series BMWs. The smaller headlight mounts to a lightweight formed piece of sheet metal which also holds the front turn signals and the instruments, and which bolts to the upper and lower fork triple clamps. The passenger seat grab rail has been replaced by a grab strap, and the snap-on plastic side covers are reshaped and smaller.

The R65 frame doesn't have oval cross-section down tubes like the R80 and R100, and lacks some of their bracing as well. (The theory is that the R65, which also has less power than the bigger BMWs, doesn't need the oval tubes and extra gussets.) The bike's swing arm is 2 in. shorter than swing arms on /7 series machines, which, with the new front forks, gives it a wheelbase of 54.8 in. compared to 57.7 for the R80 and R100. As in the case of all BMWs, the R65's swing arm rides on tapered roller bearings.

Passenger pegs bolt straight to the R65's frame—other BMWs have passenger pegs mounted on the end of perpendicular arms, allowing peg position adjustment, but also adding weight. The R65's battery is smaller than the batteries used for the /7 series BMWs, the reduction being made possible by a change in the electric starter/flywheel gear ratio for the entire range of BMWs last year.

Important changes aren't limited to the chassis. The R65 engine is 56mm narrower than the others. Previous BMW models shared a stroke of 70.6mm, and bore varied with displacement, 84.8mm for the R80, 94mm for the R100. The R65 has a bore of 82mm and a notably shorter stroke of 61.5mm.

There's more. A single-row roller timing chain with an oil-damped automatic chain tensioner replaces the dual-row timing chain with spring-loaded tensioner.

The R65's ignition points cam isn't part of the camshaft as in the case of other models. Instead, the points cam is a separate piece, driven off the end of the

camshaft via a floating tang-and-groove coupling. According to BMW representatives, the new ignition drive system isolates the points from the effects of camshaft flex and vibration, keeping timing more constant.

The ignition points now ride inside a housing much like a distributor on a car. The new system, which will appear on all 1979 BMWs, allows a mechanic to adjust the timing by rotating the housing. It's possible to hold a timing light in your right hand, look through the timing hole on the left side on the crankcases, and adjust the timing by turning the distributor with your left hand.

New cam followers reduce drivetrain noise slightly when compared to other BMWs. Each pushrod now fits inside the hollow cam follower, contacting the follower base and increasing engagement area. Previous models have pushrods which contact only the top of the cam follower.

Cylinder base sealing has been improved as well. Earlier models have O-rings around the cylinder stud holes which carry oil to and from the top end, and gaskets around the cylinder base. The R65 still has the O-rings around the studs, but also has a large O-ring around the entire cylinder base.

The R65 has the same crankcase castings, air filter housing, cast electric starter cover, and lighter front engine cover as 1978 BMWs. But the timing case casting is newly finned and the transmission case, which already had lengthwise exterior ribbing, has gained cross ribbing for more strength and heat dissipation. Those changes will appear on all 1979 BMWs, but only the R65's timing case will be black with the fin ends polished for accent. The latest BMW has the same 32mm Bing constant velocity carburetors found on the R80. The 1978 R80 and R100 vent the crankcase into the right carburetor intake tube, the R65 vents the crankcase into both carburetor intake tubes through a Y-connection. Because the R65 has a shorter stroke, the carburetors are tucked in closer



to the engine casting than on the other models, and don't tend to get in the way of the rider's shins.

While the R65 has the same five-speed gearbox as the R80 (with lower overall gearing) and the same /7 improved gear shift linkage, the driveshaft is new. A spring-loaded damper at the rear end of the shaft works with a similar (and common to recent BMWs) damper in the transmission to make shifting smoother.

Because the R65 doesn't carry a model designation plaque on the engine casting, it is difficult to tell the new engine from the others at first glance. That difficulty disappears the first time the motorcycle is ridden.

Like other BMWs, the R65 will chug along happily at low rpm, and normally will pull away smoothly from a light at 1000 or 1500 rpm. It's also rough at low engine speeds, the mirrors vibrating and the whole motorcycle shaking if the rider grabs a handful of throttle at 3000 rpm or below.

But the R65 is more eager to rev than other BMWs, makes good power above 4000 rpm, and runs its best over 6000 rpm.

It's easy to see why the R65 loves to rev relative to the other BMWs—its flywheel weighs 6 lb., 6 oz., compared to 7 lb., 12 oz. for /7 series machines. The R65 also has a smaller clutch, (160mm vs. 180mm), and the combined weight of the flywheel and clutch assembly is 12 lb., 10 oz., or 3 lb., 2 oz. less than the 15 lb., 12 oz. flywheel and clutch assembly used in 1978 BMWs. A little more than 3 lb. may not sound like much, but when spun at 6000 rpm, it makes quite a difference.

The R65 isn't as smooth as the Japanese Fours and Sixes, but is the smoothest large Twin available with the exception of the 90-degree Ducati V-Twin. Cruising between 3000 and 4500 rpm, the low-level vibration isn't objectionable, although apparent. Between 4500 and 5000 rpm (about an indicated 70-75 mph), enough vibration reaches the rider through the footpegs and handlebars to be annoying, and the mirrors blur slightly as well. The engine smooths out again over 5000 rpm.

The R65 isn't as fast as the KZ650 Four, either, turning the standing-start quarter-mile in 14.3 seconds @ 92.49 mph, compared to the Kawasaki's 13.19 @ 98.46

mph. But, as noted before, the R65 is lighter and simpler. Engine maintenance is straightforward.

The R65 has four valves, with roller bearing rocker arms and adjustable tappets. The KZ650 has eight valves, and valve lash is adjusted with shims placed underneath the cam follower buckets—adjusting the valves requires removing the camshafts. The R65 has one set of points, the KZ650, two; the R65 two carbs, the KZ650 four. The wet-sump BMW carries 2 qt. of 20W-50 (or other weight, depending upon climate) engine oil and 1 qt. of 90W hypoid gear oil in a separate transmission case, which is how all motorcycles used to be. The R65 has a single-plate dry clutch. The KZ650 takes 3.7 qt. of 20W-50 engine oil in a common engine/transmission/clutch wet-sump crankcase. The Kawasaki, like most motorcycles now sold, is more convenient—one plug drains all the oil, one kind of lubricant takes care of everything. But BMW engineers say that engine oil was not designed to lubricate gears, that hypoid gear oil is best for transmissions, that their system makes it impossible for particles from normal gear and clutch >

wear to circulate in the engine, and that they see no reason to change.

Several staff members liked the BMW's subdued, but not strangled exhaust note, which is quiet yet sounds like what many people feel a motorcycle should sound like. Another difference in approach can be seen in the exhaust pipes. The KZ650's pipes are dual-wall, so exhaust heat doesn't discolor the chrome. The BMW's pipes are single wall, because that's lighter, and the yellow and purple hues of the blued pipes are accepted as part of the BMW character.

One fault which can't be attributed to character, and which may shock people experienced with the BMW legend but inexperienced with the actual machines, is the fact that the test R65 leaked oil. Like all BMWs, the newest model has a cork gasket between the oil sump and crankcase, and as sometimes happens, the gasket leaked.

Happily, the bike used less than a pint of oil in 1500 miles of hard use, including two 20-minute stints at full throttle in top gear. Except for the sump leak, the engine remained oil tight.

Thanks to the shift linkage changes introduced for the 1978 BMWs, the R65 shifts very well. It's possible to snick into first gear silently at an intersection, and upshift without the clunking sounds associated with earlier BMWs. The new drive shaft damper effectively reduces the tendency for the rear wheel to hop and skitter during fast downshifts, making the bike more controllable when ridden fast and more enjoyable in normal street use. With reasonable attention to engine rpm and blipping the throttle, perfect downshifts can be made.

The R65 carries the BMW strong point of having far less driveline snatch than other shaft-drive, constant-velocity-carbureted motorcycles. When a motorcycle

has a lot of snatch, opening or closing the throttle quickly at lower speeds will produce a jerk forward or backward as the drivetrain slack is taken up or released. How noticeable the condition is depends upon transmission gear engagement dog clearances, shaft drive component tolerances, carburetion and flywheel effect. In the BMW's case, a relatively heavy flywheel (although the R65 has a lighter flywheel than other models) and close tolerances reduce driveline snatch to a controllable standard-of-the-industry minimum.

Clutch action wasn't as good at first. By the time the bike had accumulated 524 miles, the clutch was grabby, intermittently making smooth starts nearly impossible when the engine was warm. Adjustment didn't help. After another 1000 miles, the clutch would unpredictably grab all at once when leaving a dead stop, often slamming into engagement the instant the rider started to let out the lever, jerking the front wheel into the air as the bike lurched forward. It was as if the rider had just let go of the clutch lever, even though he tried to feed it in at the normal friction point. When we returned the R65 to the BMW importer, Butler & Smith, for repairs, mechanics found excessive transmission input shaft end play and re-shimmed the shaft, curing the problem. BMW representatives said that the shaft end play was caused by a factory error, but would have been covered by BMW's unlimited mileage, 12-month warranty. After the repair, clutch action was excellent.

The new, stylish gas tank is rated by the factory as having a 5.8-gallon capacity. When we drained the tank and refilled it at the neighborhood gas station, it held 5.5 gal. at the bottom of the filler neck, and 5.7 gal. right at the top of the filler neck. BMW claims slightly more than .5-gal. reserve

capacity, but about .4 gal. of reserve isn't easily useable. That's the amount of fuel trapped in the right-hand side of the tank when the motorcycle is upright. There isn't any crossover tube to connect the two sides, and BMW representatives say that the gasoline will slosh over the tank tunnel in the course of normal riding.

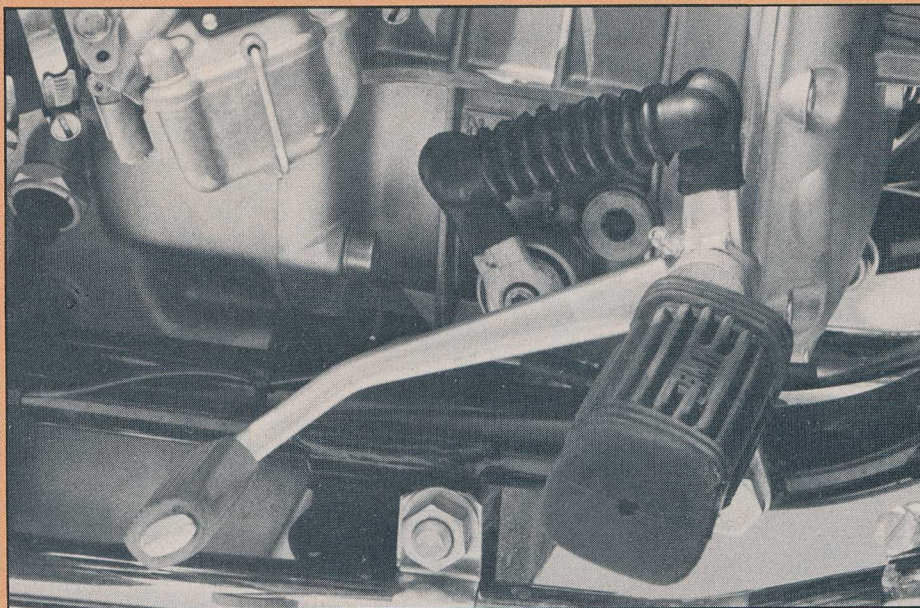
Gas mileage varied with use, from a low of 39 mpg when the bike was run very hard to a high of 49.5 mpg at a constant 65 mph indicated with a tailwind. Normal use yielded an average of 45 mpg. According to BMW capacity specifications, and using average mpg figures, a rider should be able to travel about 234 miles on the main tank and another 22.5 on reserve. In actual practice, riders had to hit reserve anywhere from about 200 miles to over 250 miles, depending upon use, and wary of reserve capacity, no one rode more than 15 miles before refuelling. Taking into account the trapped gas, a rider obtaining average mileage in normal use could, in theory, only travel 4.5 miles on reserve. However, some gas *does* slosh over during riding, and leaning the bike to the left makes the trapped gas flow over to the petcock side.

The fuel tank itself isn't symmetrical on the underside. BMW moved most of the electrical connections and relays to the main frame tube, so the right-hand side of the tank is notched to clear the electrics. The fuses and additional wiring connections have been moved out of the traditional location—inside the headlight shell—to a plastic housing underneath the right side cover. In addition, BMW separated the main wiring harness on the R65 into several sub-harnesses to improve serviceability.

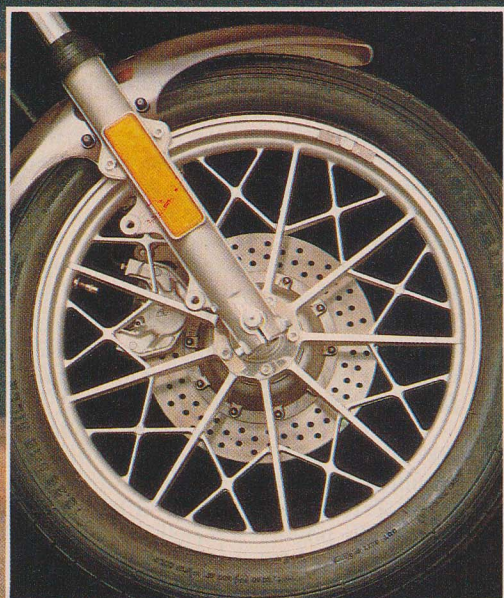
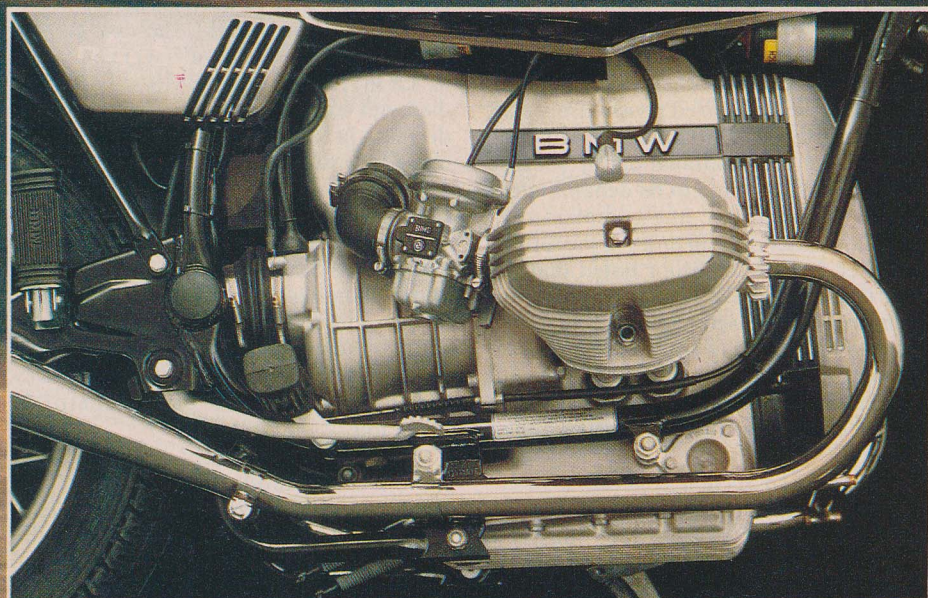
The new R65 taillight has two bulbs instead of the usual one. One single-filament bulb serves as taillight only. A second, dual-filament bulb serves as brake

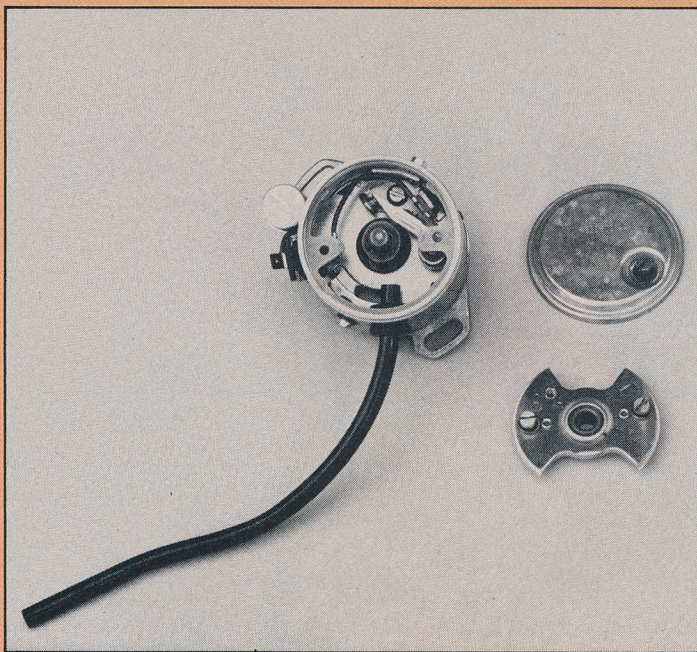


The new R65 front end: lighter forks with less travel; all-hydraulic brake system, double-piston caliper; one-piece mount for headlight, instruments and signals; cast-in reflector holders and a stylish front fender.

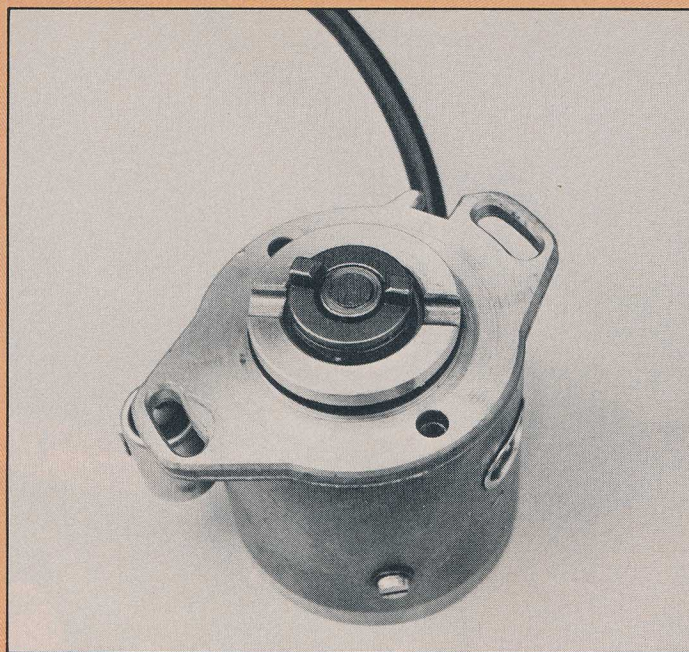


BMW introduced this shift linkage with the 1978 models, but it took the R65's lighter flywheel and driveshaft damper to perfect the German Twin's shifting.





Points are mounted inside distributor housing. Butterfly-shaped bearing holder supports end of points cam. Tube is for ventilation.



New distributor is driven off the camshaft by a floating tang-and-groove coupling.

light and a backup taillight. The quartz-iodine headlight is smaller than on previous models, but is still highly effective. An integrated sheet-metal mounting piece holds the headlight, front turn signals and instruments, and is lighter than the older, separate mounts. However, if the bike should fall over and bend the turn signal stalks, the whole piece would have to be replaced if the owner couldn't live with a bent stalk. The turn signals mount to the stalks by means of a dual-bolt clamp accessible by removing the signal lens and reflector. In the course of 1500 miles, both front turn signals worked loose and required retightening. A spot of LocTite on the threads should prevent loosening.

Instrument gauges are 100mm in diameter, versus the 85mm clocks on the other BMWs. Non-glare instrument glass is standard. The speedometer is optimistic, indicating 60 mph at an actual 56.4 mph. The odometer doesn't have a tenths dial, but the resettable tripmeter does.

A small, bright red light mounted on the face of the electronic tach flashes on if the rider exceeds a 8000 rpm red zone, a first in idiot warning lights. Generator, neutral, oil and high beam warning lights also are set in the face of the tachometer, but are impossible to read in bright sunlight. On dark, cloudy days, the idiot lights are visible, and at night are just right—not too bright. Night instrument lighting is excellent, with the exception of the resettable tripmeter, which is hard to see in the dark from a normal riding position.

The R65 has separate turn signal indicator lights—one for each direction—mounted in the new padded instrument console/fork crown cover. Like other BMWs, the bike has a piercing, obnoxious turn signal beeper, but also has clutch lever and neutral overrides. If the transmission is

in neutral or the clutch disengaged, the beeper is silent. The moment a gear is selected and the clutch eased out, the BMW loudly scolds the rider. The electrical connection for the beeper is a single plug located underneath the fuel tank, so silencing the electronic nag is easy if a rider doesn't care for it.

The single Bosch horn is very loud as motorcycle horns go. More important, the R65 has all-new switches that finally make sense. The new turn-signal switch moves left for left turns and right for right turns, as opposed to the confusing up-and-down switches on other models. The horn button is relocated and easier to find without looking in an emergency, and the high-beam/low-beam/flasher switch is new as well. New, larger-diameter, shaped Magura grips complement the new controls and replace hard, small-diameter spiny Magura grips used in the past.

A new, brown seat with a passenger strap is slightly raised at the front, middle and rear to form two pockets for rider and passenger. It drew mixed reviews from staff members. One 5 ft. 10 in. editor with long legs found the combination of footpeg height and seat shape to be debilitating after a 350-mile day, and complained of butt pains after only 50 miles in the saddle. Another 5 ft. 11 in. editor noted that the seat tended to make his pants bunch uncomfortably in the crotch. But a taller, 6 ft. 2 in. staffer with long arms praised the seat as being the best ever offered by BMW and entirely adequate in any case. Must be a matter of personal preference and riding position.

The seat tail section conceals a small, plastic storage compartment with enough room for a pair of gloves or maybe a sandwich. The latch on our test bike, however, broke and the compartment lid

wouldn't stay closed when the seat was raised. The seat itself wouldn't stay open unless the bike was perfectly upright, as on the centerstand—there isn't a seat prop.

The R65's new centerstand is the easiest to deploy we've ever seen. Lifting the bike onto the stand is almost effortless compared to the difficulties encountered trying to hoist some of the heavier Japanese machines. Although redesigned, the self-retracting side stand still isn't one of our favorites. At least the R65's stand, which must be spring-loaded to comply with German law, allows the bike to lean over further than the older models' stands. It used to be that the slightest nudge of a BMW parked on the side stand would unload the stand with a clang, followed by the crash of expensive machinery as the motorcycle tipped over. The side stand also has a new, smaller pad, which increases ground clearance in hard cornering.

Besides saving weight, the new center-axle forks have 6.8 in. of travel compared to 8.2 in. for the other BMWs. Fork tube diameter stays at the usual 36mm, but the decrease in travel lowers the front end and mitigates the dramatic front-end dive other BMWs exhibit when braked hard; thus making it easier to ride fast. The rear shocks are the same as on other BMWs, and feature preload adjustment levers that allow changing the preload without tools. Suspension compliance is good, but falls short of several softly-sprung Japanese motorcycles in absorbing concrete freeway expansion joints and other repetitive, small jolts.

An 18 in. front wheel (compared to 19 in. on other models) works with the shorter-travel forks to lower the front end, a change which is made feasible by the increased ground clearance offered by the narrower engine and new side stand. Ac-



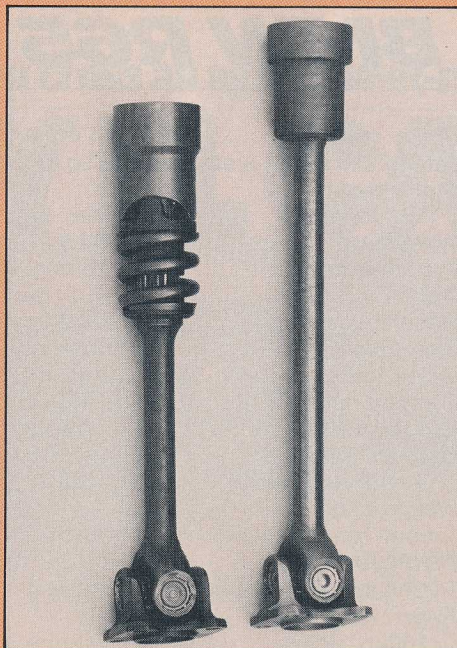
ording to Butler & Smith, the new cast wheels weigh about the same as spoked wheels, but of course don't require truing or adjustment. On the other hand, if a wheel should somehow get out round slightly, the rim alone can't be replaced. According to a source at a Japanese manufacturer, one reason cast wheels are gaining popularity is that casting a wheel is often cheaper than paying a craftsman to lace up a rim and hub with spokes, thus helping to cut down production costs.

The R65's all-hydraulic front brake system has a new double-piston caliper and handlebar-mounted master cylinder. Other models use a combination mechanical/hydraulic system, running a cable to a master cylinder (located underneath the fuel tank), which then operated a single-piston caliper.

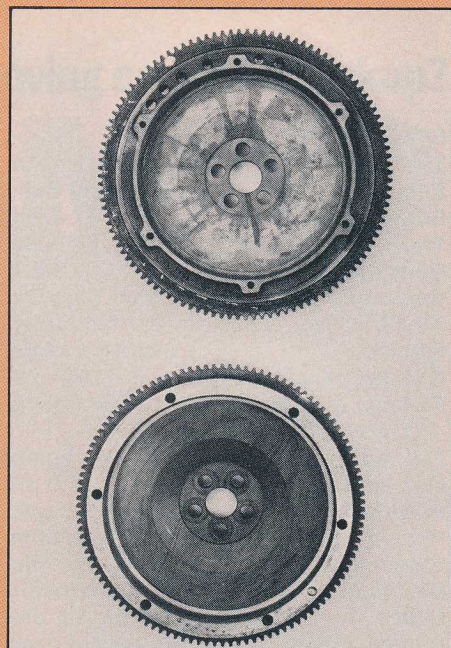
When first received, our test bike was fitted with European model low bars. Later, Butler & Smith mounted higher, American-market handlebars. The different bars required a longer hydraulic line from the master cylinder, and BMW mechanics used some handy braided steel line which may show in some test photos. Rubber brake hoses are standard, and machines will not be delivered with braided steel lines.

The new hydraulic system delivers better feel than the older system, but still requires a strong pull at the handlebar lever. European versions of the R65 have twin front discs, but the U.S. R65 comes with only one disc. Both versions have drum rear brakes. Stopping distances using front and rear brakes were good, 123 feet compared to 144 ft. for the Kawasaki KZ650 and 125 ft. for the BMW R80. Weight has a lot to do with stopping distances, and the R65, as noted, is lighter than the KZ650 and R80. Tire size and brand also come into consideration. The test R65's front tire was a 3.25-18 Metzeler, while the R80 we tested in July came with a Continental 3.25-19. In emergency stopping situations, the R65's brake was capable of locking the front tire on dry pavement if a very strong grip was used at the handlebar lever. Stopping was limited by available tire traction, not lack of brake power. Installing a second caliper and disc—offered as an accessory kit by BMW—and a larger, stickier front tire could substantially improve braking performance. For normal use, the R65 stops very well as it is, but the brakes will fade under repeated, heavy usage, as when tearing down a curvy road.

The disc is perforated, in theory allowing the brake to recover its braking efficiency in wet weather. When a film of water forms between disc and pad, it acts as a lubricant until squeezed out. The holes are said to give the water someplace to go, thus lessening the amount of time needed between first application and actual stopping action. Factors other than disc perforation also affect wet braking, such as pad composition and construction.



*R65 driveshaft with spring-loaded torsion damper helps the new BMW shift smoothly. Standard /7 driveshaft is shown in comparison.*



*The R65 loves to rev. A lighter flywheel (top shown with /7 series flywheel) and smaller, lighter clutch assembly make a big difference.*

While our wet-weather experience with the R65 was limited, past experience with an R80/7 showed that the perforated disc worked no better than a common, Japanese solid disc when first applied, but braking recovery time was marginally better.

The outside edge of the front disc and the inside of each perforation are plated for rust prevention. BMW cadmium plates each disc before final grinding of the working surface. After one night parked out in the rain, the R65's disc showed the first signs of corrosion breaking through the edge and hole plating.

The R65 is better in the rain than many machines because it has a drum rear brake, which isn't affected by water like a disc is.

The R65 may have the easiest-to-remove rear wheel in motorcycling. When it comes time to change the tire or repair a flat, all the rider has to do is loosen the axle nut and axle pinch bolt on the swing arm. The left swing arm end is beveled to allow insertion of a toolkit-supplied tommy bar to remove the axle easily and smoothly. The brake backing plate stays in place with the drive shaft crown housing, and the wheel slides right out. The BMW's upswept exhaust pipes don't block axle removal, an aggravating fault found on some machines. However, it is easier to remove the wheel if the left rear side reflector is unbolted from the fender first.

The upswept exhaust pipes are part of a carefully-thought-out effort to give the R65 excellent ground and cornering clearance. In spite of the smaller front wheel, the bike has 6.4 in. of ground clearance versus the R80's 5.5 in., and the R65 also has better cornering clearance. Combined with the shorter wheelbase, drive shaft damper, and new forks, the R65 is the best handling BMW in tight, twisty road riding.

The bike demands that the rider make fewer adjustments to compensate for machine faults, simply because it has fewer faults. The tendency for the shaft-driven rear end to raise under acceleration and to drop under deceleration seems to be reduced by the damper and magnification of the effect in turns by long-travel, soft forks is reduced because the R65's forks don't travel as far. In our test riding, we didn't find any situation when the bike wallowed or failed to do what the rider wanted.

The Metzeler tires on our test bike were the limiting factor in handling. The tires slipped under hard acceleration in turns and during fast transitions from hard right to hard left, and vice versa. The tires were also upset by freeway rain grooves. Because the drive shaft damping spring is located in the swing arm, the R65's swing arm diameter is larger at the point where the tire rotates past, limiting rear tire size to 4.00 x 18. There isn't enough clearance for a larger tire. Half the BMWs made come with Continental tires, which perform better than Metzeler's, and which will fit in the available space. (For a rating of performance tires, see the August issue.)

In spite of the tires, the R65 handled better than any touring bike has a right to, and toured better than most sport bikes. That dual capability in itself isn't unique—the Honda CX500 has it as well. But the Honda weighs a little more, has less range, and has a load capacity 60 pounds smaller than the 414 lbs. of rider and cargo the BMW's 881-lb. gross vehicle weight rating (GVWR) allows with a full tank.

For the rider who demands the best of two worlds—sporting and heavy touring capability—and who wants a simple, lightweight, extensively-detailed, traditional motorcycle, the R65 is ready and waiting.

It's just a matter of paying the price. ☐

# BMW R65

## SPECIFICATIONS

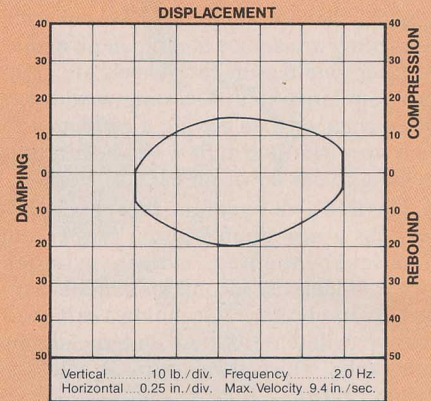
List price ..... na  
 Engine ..... ohv Twin  
 Bore x stroke ..... 82 x 61.5mm  
 Piston displacement ..... 649.6cc  
 Compression ratio ..... 9.2:1  
 Carburetion ..... (2) 32mm Bing CV  
 Air filtration ..... treated paper  
 Ignition ..... battery/points  
 Claimed power ..... 45 bhp @ 7250 rpm  
 Claimed torque ..... 36.8 ft. lb  
 @ 5500 rpm  
 Lubrication system ..... wet sump  
 Oil capacity ..... 4.8 pt.  
 Fuel capacity ..... 5.7 gal.  
 Recommended fuel ..... premium  
 Starting system ..... electric  
 Electrical system ..... 12v 280w alternator  
 Clutch ..... single-disc, dry  
 Primary drive ..... helical gear  
 Final drive ..... shaft, bevel gear  
 Gear Ratios, overall:1  
 5th ..... 5.17  
 4th ..... 5.75  
 3rd ..... 7.13  
 2nd ..... 9.85  
 1st ..... 15.16  
 Suspension, front ..... telescopic fork  
 Suspension, rear ..... swing arm  
 Tire, front ..... 3.25-18  
 Tire, rear ..... 4.00-18  
 Brake, front ..... 10.1-in. disc

Brake, rear ..... 7.9-in. drum  
 Total brake swept area ..... 119 sq. in.  
 Brake loading  
 (160-lb. rider) ..... 5.2 lb./sq. in.  
 Wheelbase ..... 54.8 in.  
 Fork rake angle ..... 28 deg.  
 Trail ..... na  
 Handlebar width ..... 25.2 in.  
 Seat height ..... 32.4 in.  
 Seat width ..... 10.0 in.  
 Footpeg height ..... 11.7 in.  
 Ground clearance ..... 6.4 in.  
 Curb weight  
 (w/half-tank fuel) ..... 455 lb.  
 Weight bias,  
 front/rear, percent ..... 44.8/55.2

## PERFORMANCE

Engine speed @ 60 mph ..... 4088 rpm  
 Power/weight ratio,  
 (160-lb. rider) ..... 13.7 lb./bhp  
 Fuel consumption ..... 45.6 mpg  
 Speedometer error:  
 30 mph indicated, actually ..... 26.6  
 40 mph indicated, actually ..... 36.3  
 50 mph indicated, actually ..... 46.6  
 60 mph indicated, actually ..... 56.4  
 Braking distance  
 from 30 mph ..... 32 ft.  
 from 60 mph ..... 123 ft.  
 Standing start  
 1/4-mile ..... 14.31 sec. @ 92.49 mph  
 Speed after 1/2 mile ..... 104 mph

## FRONT FORKS

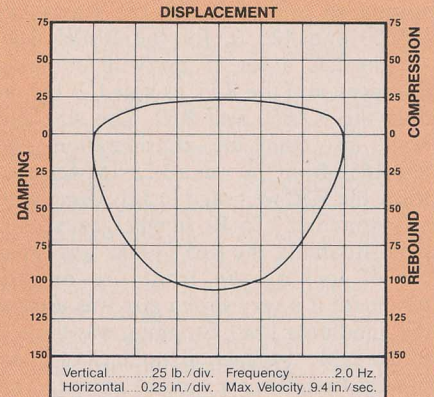


## BMW straight-axle fork

Fork travel ..... 6.8 in.  
 Engagement ..... 4.7 in.  
 Stanchion tube diameter ..... 36mm  
 Spring rate ..... 33 lb./in.  
 Compression damping force ..... 14 lb.  
 Rebound damping force ..... 18 lb.  
 Static seal friction ..... 14 lb.

In its conversion to a straight-leg fork, the newest Beemer has lost an inch of travel up front, and almost two inches of engagement. A medium-stiff linear spring replaces the very-light/super-stiff dual-rate spring of old, allowing full use of travel without an excess of nose-dive. Rebound damping is slightly insufficient, but the overall action of the fork is good, in terms of both comfort and control.

## REAR SHOCKS



## Boge shock, non-rebuildable

Shock length ..... 12.8 in.  
 Shock travel ..... 3.9 in.  
 Wheel travel ..... 4.8 in.  
 Spring rate ..... 95/165 lb./in.  
 Compression damping force ..... 20 lb.  
 Rebound damping force ..... 105 lb.

The R65 uses the same damper unit as the R80. The excellent rear-suspension action of the larger model BeeEm is maintained, and allows spirited cornering and good straightline comfort. The shorter swing arm of the R65 reduces travel by 2/10 inch, but few, if any, would ever notice. And, for the convenience of the rider, the preload cam still has the handy external adjusting lever. ☑

## ACCELERATION / ENGINE AND ROAD SPEEDS

