BMW R75/6

Touring suitability has been the 750's reputation for years.
Performance never entered the picture.
Now it has both.

● Touring machines are the most complex, sophisticated and expensive in the sport. The Japanese have run their computers beyond valve-float for the last half-decade developing bigger, faster and smoother road-burners. At the same time the Europeans have been honing, polishing and enlarging life-long designs. The result of these efforts is an array of open-road machinery beyond the comprehension of yesteryear's touring rider.

The recent past has decorated the present with handfuls of four-cylinder air-cooled four-strokes, liquid-cooled four-cylinder four-strokes, liquid-cooled two-stroke triples and single-rotor Wankels. It has produced air-cooled two-strokes in two- and three-cylinder configurations, ninety-degree four-stroke twins with overhead camshafts, four-stroke triples with pushrods. Science has fairly rained on the touring rider—yet the BMW endures. That it has endured for a half-century, and thrives today in the face of outrageous technological pressure applied by the Japanese, speaks volumes about the German firm's concern for function. Comfort in a touring bike is the essence of function. BMW has always cared about comfort—more than performance, more than engineering gimmickry, more than price-sensitive design—and it is this precise consideration that disengages BMWs from all other road motorcycles.

Most manufacturers, particularly the Japanese, produce separate engine, chassis and suspension components for their varied range of road bikes. BMW does not. The 600cc, 750cc and two 900s use the same chassis, suspension units and engine configurations. Excluding the Sport's trim, all the BMWs are mates with engine displacement and gearing the only variances. Therefore the R75/6 must be thought of as a BMW with more power than the R60/6 and less than the R90/6. There are no other differences.

The BMW fork is the most efficient in the touring field—regardless of machine size. Like the Maico fork, which is lauded as the best in motocross, the BMW unit is physically large and simple in design. The 36mm fork stanchions contain extra-long internal springs. Mated with lengthy aluminum sliders, the fork delivers eight inches of travel. This amount of travel, twice as much as many big tourers, allows the use of soft springs that compress two inches under the weight of the unladen bike. Even with this natural preload, the fork still has more working travel than other tourers.

The secret to the BMW's comfort and supple ride comes from more than just soft springs. The fit of the damper rod, damping control washers and springs, due to abundant clearances, produces a minimal of material friction. Friction has been further controlled by undercutting a section of the slider bore where the stanchion is supported. This undercut section reduces the frictional drag from the damping oil compressed between the two supports.

Cycle Test

The full-length bore of the slider makes for much closer working tolerances. The clearance between the slider bore and stanchion is far more consistent than with sliders that are bored into but not all the way through. Only the BMW and Maico use this fork manufacturing process. And only these two fork units work with proper smoothness and lack of frictional drag.

With the extra-long and largely stiction-free fork capable of absorbing most road undulations, the BMW's rear shocks are not overworked. Like the fork, the Boge shocks are softly sprung and gently damped. The Boges allow the rear wheel to move five inches. Only recent versions of LTS (Long Travel Suspension) motocrossers can match or exceed the BMW's suspension travel lengths.

While it is generally assumed that the heavier the machine the better the ride, the BMW is the lightest of all 750cc-or-over tourers. Conversely, the BMW has the highest Gross Vehicle Weight Rating of any road machine except the Harley Big Twin—which means the BMW can safely carry more weight in passenger poundage and luggage.

Comfort, the BMW's forte, is further enhanced by its saddle. The seat is no

longer or thicker than other saddles, yet it is by far the most comfortable. The pilot's section is ideally recessed and shaped to conform to any rider's buttocks. The passenger section is elevated with a mid-way kick-up separating the pilot and passenger sections. The padding, though not excessively thick or firm, keeps rider and passenger posteriors from finding rock-bottom after day-long rides. The finish of the vinyl cover is serrated and semi-porous to keep undesirable slipping and sliding to a minimum. For the passenger there is a full 180° hand-rail bar that provides additional security and comfort.

The use of common parts for all four BMW models provides an enormous amount of interchangeability. The crankshaft, identical in all models, is a one-piece forging which rides in plain main bearings. The rod throws are 180° apart. Engine castings are high-pressure-formed aluminum with a sandy rather than polished or smooth finish, which aids cooling and reduces sound resonance. Lubrication is *via* an Eaton wet-sump system. The gearbox resides in a separate oil reservoir.

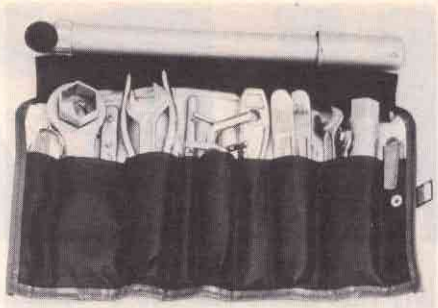
Huge variances in crankcase pressures are inherent with the pistons driving in and out simultaneously. These are compensated by a vacuum/pressure breather system that vents into the carburetion intake chamber. The chamber is located in the upper section of the engine's main tunnel housing (which also contains the air cleaner and starter motor), and silences both intake drone and crankcase pressure pulsations.

The camshaft is located under the crankshaft and is driven by a timing chain at half-speed. The ignition points and mechanical advance are located on the camshaft's end. Removal of the cast aluminum front tunnel housing cover will expose the ignition system and crankshaft driven alternator.

The valve train, simple by today's standards, is composed of old-fashioned pushrods, rocker arms and solid lifters. Located on the underside of the cylinders, the pushrods are external and enclosed in tubular covers. These pushrods are exceptionally long and relate to the engine's nominal 7000 rpm redline: over-revving will bend them in a hurry.

Power is transmitted to the five-speed gearbox through a single-plate dry clutch mounted on a large, automotive-type flywheel. The gearbox, turning at reduced speed, is located in line with the crankshaft. Power from the input shaft drives to the mainshaft into the layshaft; the rear of the layshaft, or output shaft, fits to the driveshaft; one universal joint fits between the output shaft and driveshaft, enclosed in a flexible rubber boot attached between the gearbox and right swing arm and shaft enclosure tube.

Inside the swing arm/shaft enclosure is a splined coupler that fits on the driveshaft's end. The shaft can move back and forth on the coupler and adjust for length variances as the swing arm moves up and down. The rear drive unit is, basically, an automotive-type ring-and-pinion assembly. BMW has six rear drive ratios ranging from 3.56:1 to 2.91:1. These have come from the 500cc through 900cc models, and all are interchangeable.



The best tool selection in the business includes a tire pump which is stored under the locking seat.

BMW has a neat cam-and-chain throttle but the blinker should operate horizontally from the left.

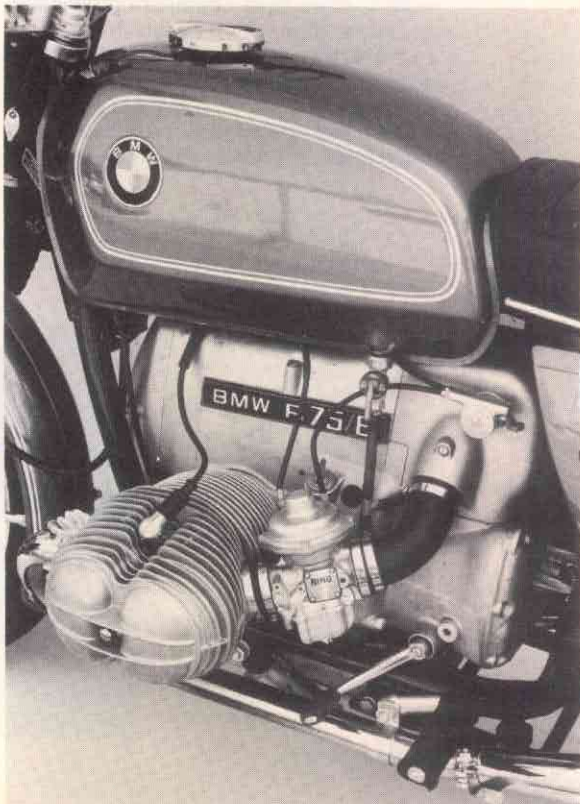
PHOTOGRAPHY: DALE BOLLER

No bike has a better reputation for two-up touring comfort. A soft seat and no vibration are the secrets.

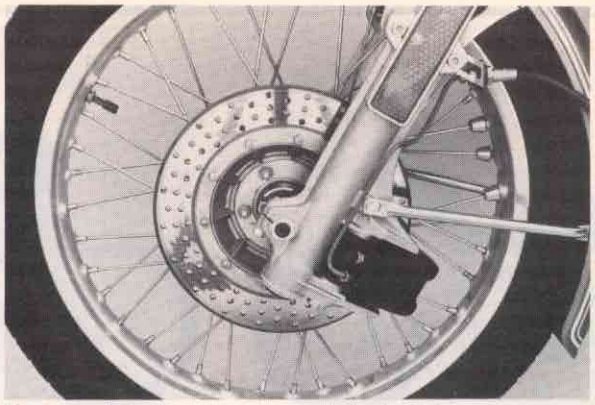
BMW has traditionally claimed a small, hard-core segment of the street and touring market. In an effort to expand their potential, BMW has made a number of major production changes during the past two years. To improve handling the swing arm was lengthened; to broaden versatility a new five-speed transmission replaced the four-speeder; a disc brake took the place of the sluggish drum binder; new carburetors, higher compression ratios and more efficient mufflers improved engine performance; and the 900cc models, including the R90S hot sport version, finalized major shifts in BMW marketing trends.

The R75/6 is a surprisingly quick road machine. Its quarter-mile figures of 13.51 seconds and 96.77 mph are two tenths quicker and two mph faster than those of the R90/6. Much of the 750's impressive standing-start acceleration is due to a new, lower final drive ratio. Increased touring accessories and passenger-load weights, and the slower 55 mph speed limit, mean that the engine of the R75/6 will be less-burdened if allowed to spin

Range from the hand-striped silver-blue tank is about 240 miles. The Bing carb is West German.

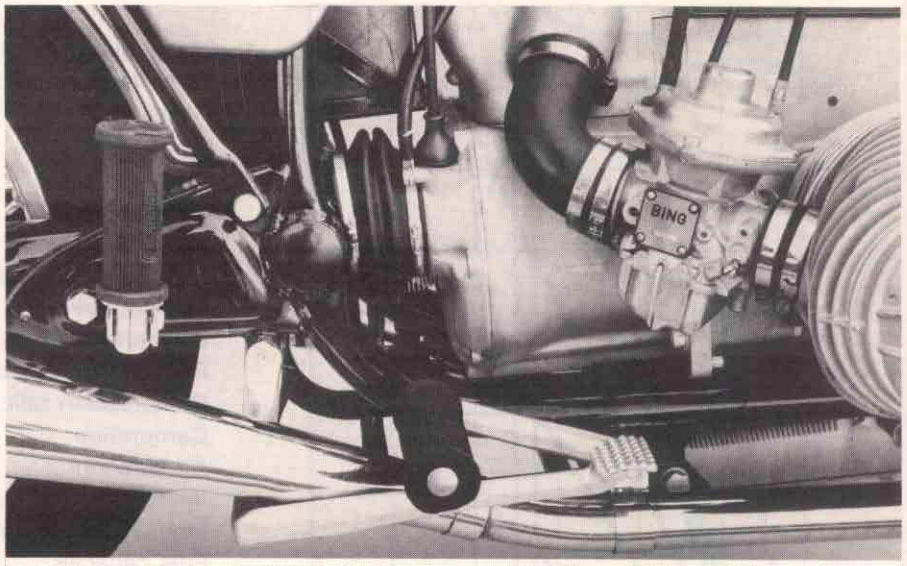


Spider hub-design uses straight-pull spokes which are stronger than ones which bend at the flange.

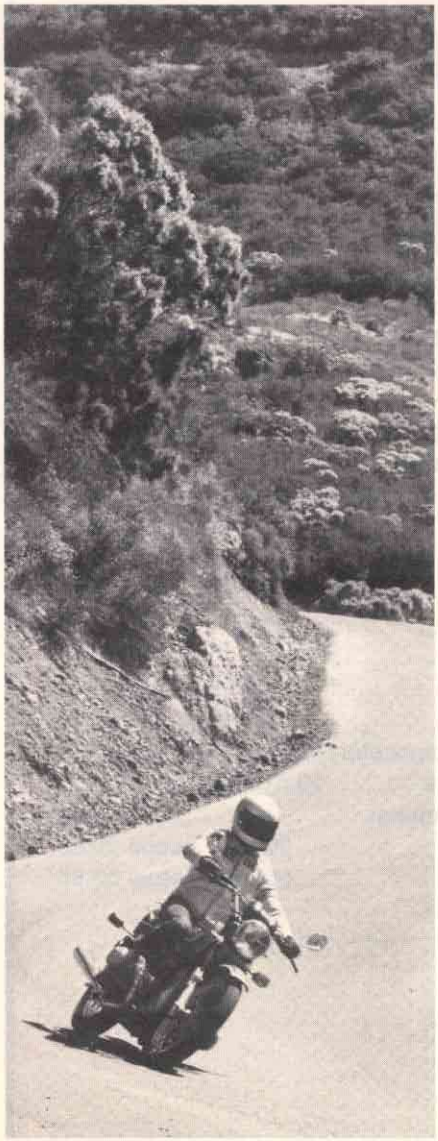


Rear-mounted caliper keeps mass in back of the axle for lighter steering. Holes punched in the disc help reduce unsprung weight.

BMW R75/6



Inside the pleated rubber boot above the footpeg is an automotive-style U-joint which joins the transmission output shaft with the driveshaft, which is located inside the swing-arm. U-joint retail is $98.60.



faster. The gearing change from 3.2 to 3.36 has not resulted in a large jump in engine speed; at 60 mph, the engine now turns 4064 rpm instead of 3870.

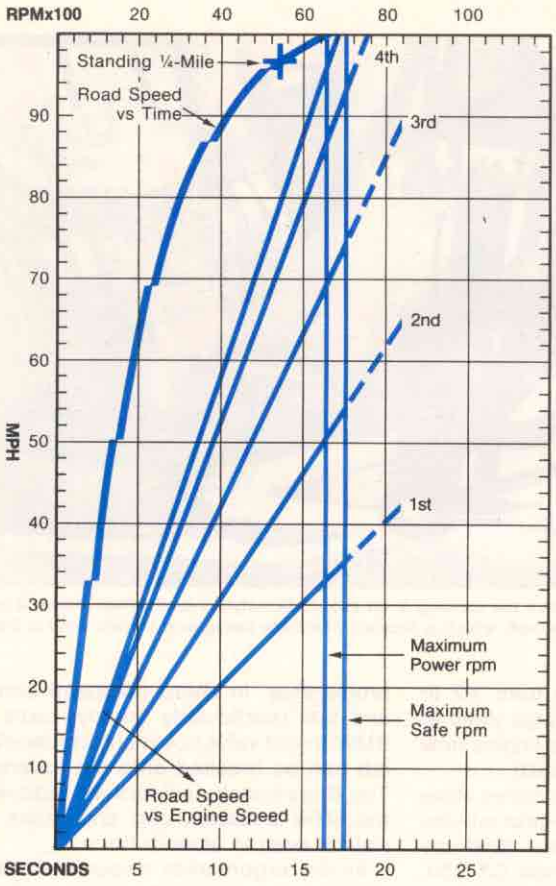
On the road, the R75/6 produces more impressive results in gear-to-gear roll-ons with other 750s. In top gear twist-ups against a freshly-tuned Ducati GT 750, the R75/6 comfortably walked away from the Italian V-twin. Against the Honda 750 four-piper or Suzuki triple the BMW stretches out an even wider gap.

Traditional BMW lightness and this year's shorter gearing make the 750 more responsive than before. Slow-traffic poking is simplified as the engine runs happier, and with less torque reaction, in the lower three gears. Handling is more than acceptable for long-distance commuting and open-road touring. The R75/6 runs true, with no tendencies to twitch or oscillate up to the bike's top speed. Most riders will not object to the BMW's characteristics on twisty mountain roads. Steering is predictable and, up to its ground clearance and tire limitations, the BMW performs adaquately on bending mountain roads.

The BMW's handling restrictions come from the flat-twin cylinder protrusions, supple suspension units and hard, low-profile tires. In sharp off-speed corners and fast (particularly bumpy) turns the BMW's right valve cover and center-stand tab can be brushed onto the pavement. The Boge shock dampers will fade when the BMW is ridden hard, and cause it to wallow even in smooth turns.

In the ergonomics department (ease with which a rider and passenger fit and operate the bike) the BMW mixes excellent and mediocre qualities. Comfort relating to suspension compliance, seating position(s) and vibration control are, combined, the best in touring—solo or two-up. But other controls and BMW-inherent hindrances stand in the way of perfection. One annoyance that a BMW rider must live with is the constant contact between shin-bones and the air intake tubes from the carburetors. Hooks on lace-up boots catch on the tubes or carburetors. The rear brake lever arcs to near-excess when applied. Even slight rear brake free-play lets the lever carry the rider's toes too close to the ground in turns. The handlebar on the R75/6 is swept back sharply, causing the rider to bend his wrists awkwardly.

The throttle effort required is not acceptable. A combination of friction from the cam-gear-chain-driven twist grip, drag



BMW R75/6

Price, suggested retail	$3195
Tire, front	3.25 x 19 Metzeler
rear	4.00 x 18 Metzeler
Brake, front	1.375 x 10.24 in. x 2 (35 x 260mm x 2)
rear	7.87 x 1.18 in. (200 x 30mm)
Brake swept area	105.5 sq. in. (680.5 sq. cm)
Specific brake loading	6.2 lbs./sq. in. at test weight
Engine type	OHV opposed twin
Bore and stroke	82 x 70.6mm
Piston displacement	745cc
Compression ratio	9.0:1
Carburetion	2; 32mm; Bing CV
Air filtration	Dry paper
Ignition	Battery and coil
Mph/1000 rpm, top gear	15.5 mph
Fuel capacity	4.8 gal. (18 liters)
Oil capacity	4.7 pts. (2.25 liters)
Transmission oil capacity	1.7 pts. (.8 liters)
Electrical power	280 watt alternator
Battery	12V, 25AH
Primary transmission	Helical gear
Secondary transmission	Driveshaft, crown wheel and pinion, 3.36:1
Gear ratios, overall	(1) 14.08 (2) 9.15 (3) 6.24 (4) 5.34 (5) 4.80
Wheelbase	57.5 in. (146.5 cm)
Seat height	30 in. (76.2 cm)
Ground clearance	7 in. (17.8 cm)
Curb weight	480 lbs. (217.7 kg)
Test weight	640 lbs. (290.3 kg)
Instruments	Tachometer, speedometer, tripmeter
Standing start ¼-mile	13.516 sec.; 96.77 mph
Average fuel consumption	49 mpg
Speedometer error	30 mph actual 26.92 60 mph actual 53.85

in the throttle cable and stiff return springs aggravate the right wrist and forearm. Softer springs and well-lubed or nylon-type cables would greatly alleviate the problem. The clutch has a narrow friction point and requires a moment's thought before releasing the lever.

More discomforting are the electrical switches. They were designed specifically by BMW for federal regulation compliance—but unfortunately they were designed by automotive standards. The turn signal switch, located on the right (throttle) side, flips down for left and up for right—a directional control unnatural for a motorcycle rider. They should move side-to-side—right for right turns, etc. The light control for high, low and dip is on the left side, and also works in an up-and-down fashion.

The BMW's instruments are militaristic in simple, black-background design. They are, however, easy to read and glare-free. The speedometer is 10% fast while the odometer and tripmeter indicate mileage perfectly. BMW has the best headlight in motorcycling. The dual-filament quartz halogen light has a half-moon-shaped low beam and a high beam which are both much brighter than conventional sealed-beam lamps.

Lower final drive gearing has not affected the BMW's gas mileage. Riding two-up (and quite hard) we averaged 43 mpg, and watching the speed limits we saw 55 mpg when solo. An optional 5.8 gallon touring tank is available for long distance riders for an additional $60. Alternative final drive gearing set-ups are likewise available, but must be arranged through the dealer.

Despite scintillating engine performance that seems somewhat out of character, the BMW's hallmark is comfort—comfort over distances that riders of other brands would find more punishing than amusing. The suspension settings, saddle design and vibration control all contribute to a state of mind that is relaxed and serene. The R75/6 is composed in everything it does except hurtle through the mountains—and BMW figures if that's what you want, then you should do it aboard something else. The bike knows what it is, and what it can do—and makes no pretense about conquering other venues. Being the best 750cc tourer, and one of the best tourers in any displacement class, is more than enough for the BMW R75/6. ◉


750cc
BMW R75/6