

IF A CARTOONIST were to draw a caricature of the BMW opposed-twin he would probably conceive of it as a low-flying one-man cargo plane, skimming along just above the road surface, using its horizontal cylinders as stubby wings. The Bee-Em is a traveling man's machine and this month we renew our acquaintance with the "travelingest" one of the series — the 593cc R69S.

Bayerisch Motoren Werke (Bavarian Motor Works) makes two motorcycles in the 600cc range — the R60 and the R69S. The R69S is the punchier of the two, with 9.5:1 compression (instead of the R60's 7.5:1), bigger carburetors and slightly more radical cam timing, giving a peak horsepower figure of 42 DIN at 7,000 rpm, rather than 30 at 5,800, as is the case with the R60. Just because the R69 has an "S" in its name doesn't mean that one is buying into a fireball solo machine. It must be remembered that BMW does yeoman service pulling a sidecar, particularly in Europe; hence the popularity of the low-rev, low-compression, regular gas R60. The R69S must be regarded as an attempt, pure and simple, to add a few more beans to an essentially conservative machine which filled a great need in the 80-cent-a-gallon economy of Europe long before it ever captured the fancy of the two-wheeled vagabonds in America.

One would wonder how this massive-looking, non-sporting Sport built such a fantastic legend for itself among the far-flung touring clan. Perhaps one must ask the seasoned traveler what he wants in a motorcycle for touring. First, he wants reliability, for he is laying his health and peace of mind on the line by daring to venture far afield without a roof over his head. It is obvious that BMW has that attribute; it just begins to get broken in when many of its like-sized brethren start to fold up. Secondly, he wants a big machine with plenty of reserve power, one that will cruise all day at the legal limit (or higher if nobody's looking). Bee-Em has that attribute in all its big-bore models; the R69S has it in spades and boils along happily at just over 100 mph.

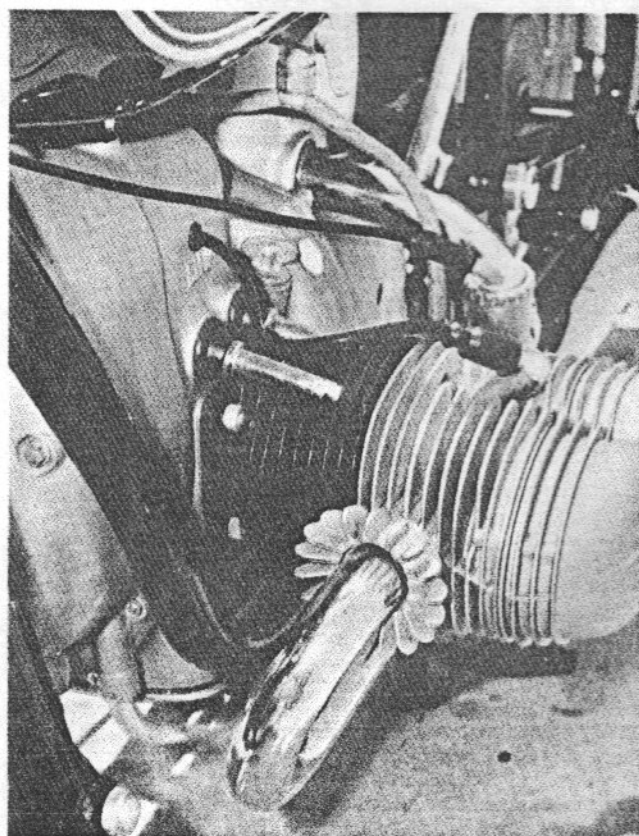
To say that the BMW is big is to put things too simply, and somewhat grossly. Those 480 pounds are gracefully assembled and it looks like nothing could break them or keep them from their destiny. Few motorcycles can boast the attention to detail found on the BMW, from the mirror-like black finish of painted components to the fine contrasting white striping on fenders and tank. All aluminum castings throughout the machine, even the larger ones, are of very high quality and fit with precision. An indication of how well they fit can be determined from the fact that no oil leaks whatsoever could be found during any of our tests. This would help explain why one rarely sees a dirty BMW.

The makers obviously put more importance on longevity and durability than on lightness, as heavy gauge steel is used on all sheet metal parts and the various sizes of tubing that go into making up a complete motorcycle. In the case of the wide double-loop frame, the tubing changes gauge as it passes from a highly stressed area to one that carries lighter loads. Large diameter tubing is found particularly in the main cradle, in the

front Earles-type fork down tubes and around the steering head. At the rear, the cradle continues beyond the normal double-loop rear extremity to a point just ahead of the rear suspension units. Formed sheet metal tabs extend from the side members to support the bottom of the suspension sleeves.

The front forks are of the true Earles type, just as Ernie Earles felt forks should be when he first designed them more than 15 years ago. We see many derivations of the Earles pattern but there is still nothing much wrong with the original layout; it certainly keeps the front end stable under heavy braking. To minimize front end wiggle, BMW has installed a small-diameter hydraulic steering damper between the lower fork crown and a bracket from the frame, just below the gas tank. This miniature shock absorber has heavy damping both ways and tends to keep the front end pointed in the intended direction. Overall appearance of the front fork assembly leaves little doubt as to its robustness. However, it is not clumsy in any way; the Bee-Em floats along very easily.

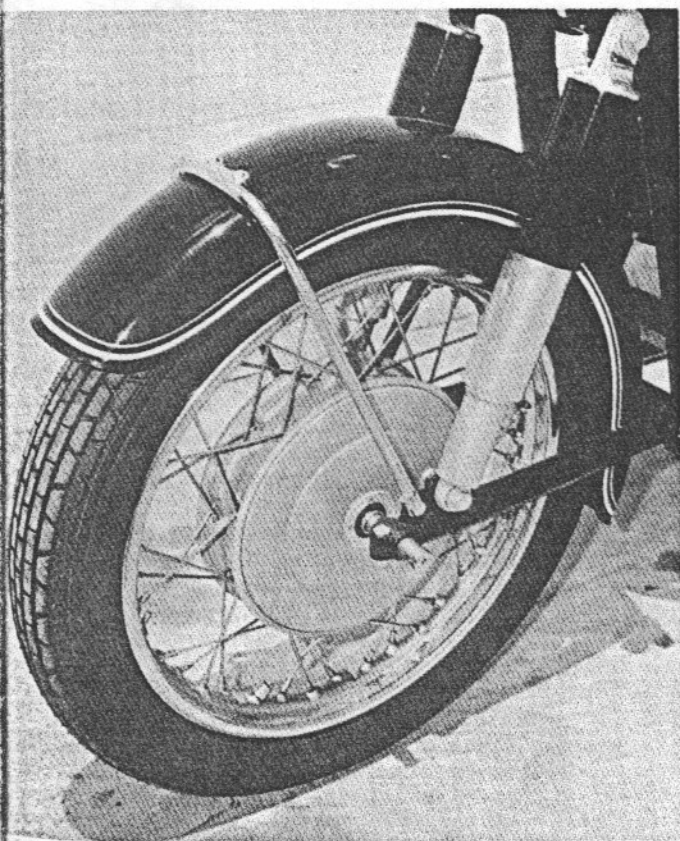
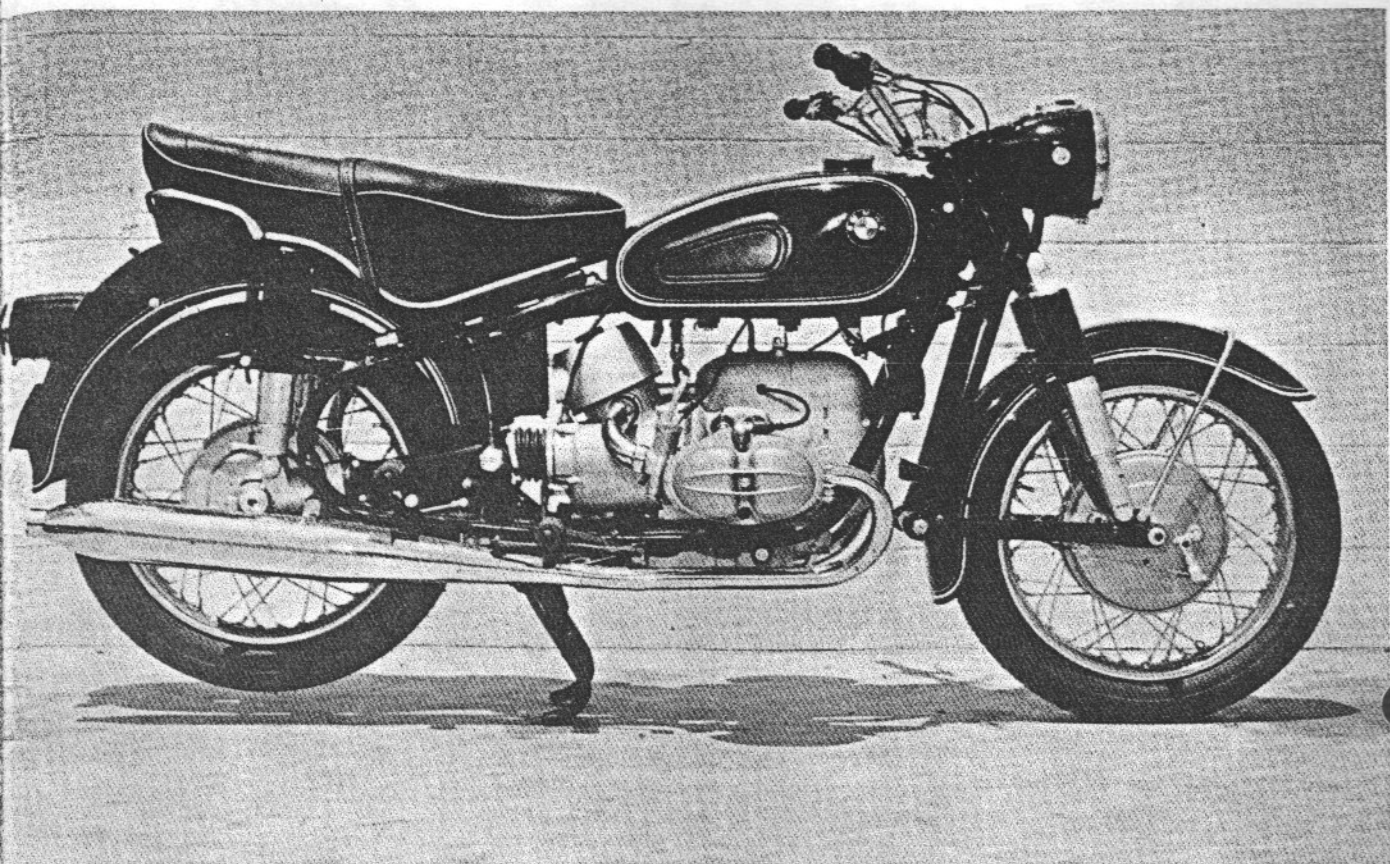
It is a marvel that the makers can get the R69S engine to turn over so fast, so smoothly. While 7,000 rpm is conservative in these days of the "buzz bomb," it is probably the limit of reliability for an opposed twin of this size (BMW does manage to squeeze 7,650 rpm out of the 500cc R50S). With a single, centrally-mounted camshaft, the R69's pushrods are long and heavy, and the valve gear must do a fair amount of shaking at high engine speed. BMW seems to know where the limit is, though, and the engine runs as smoothly as do the less powerful models in the line. Part of the smoothness is inherent in the engine design. Inside, plain bushings are scarce, roller and ball bearings plentiful. Crankpin



Born to wander

BMW R69S

CYCLE WORLD
ROAD TEST

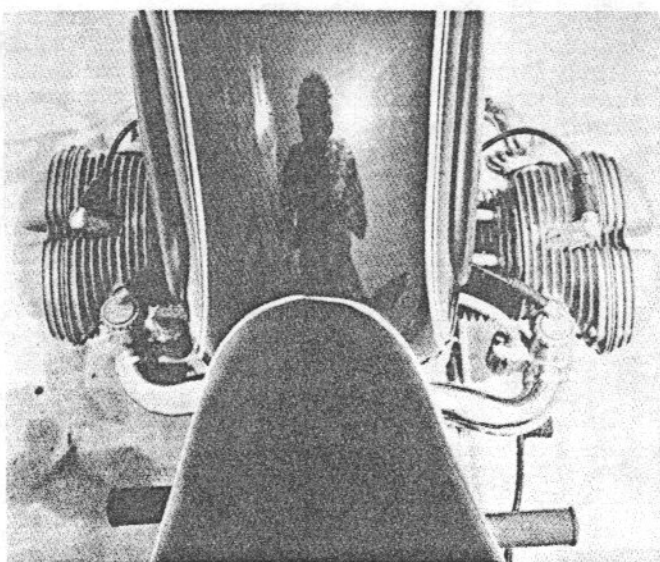
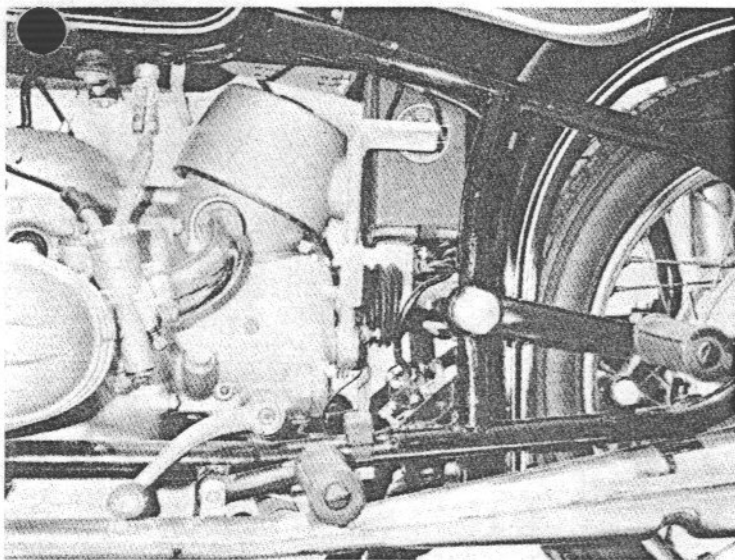
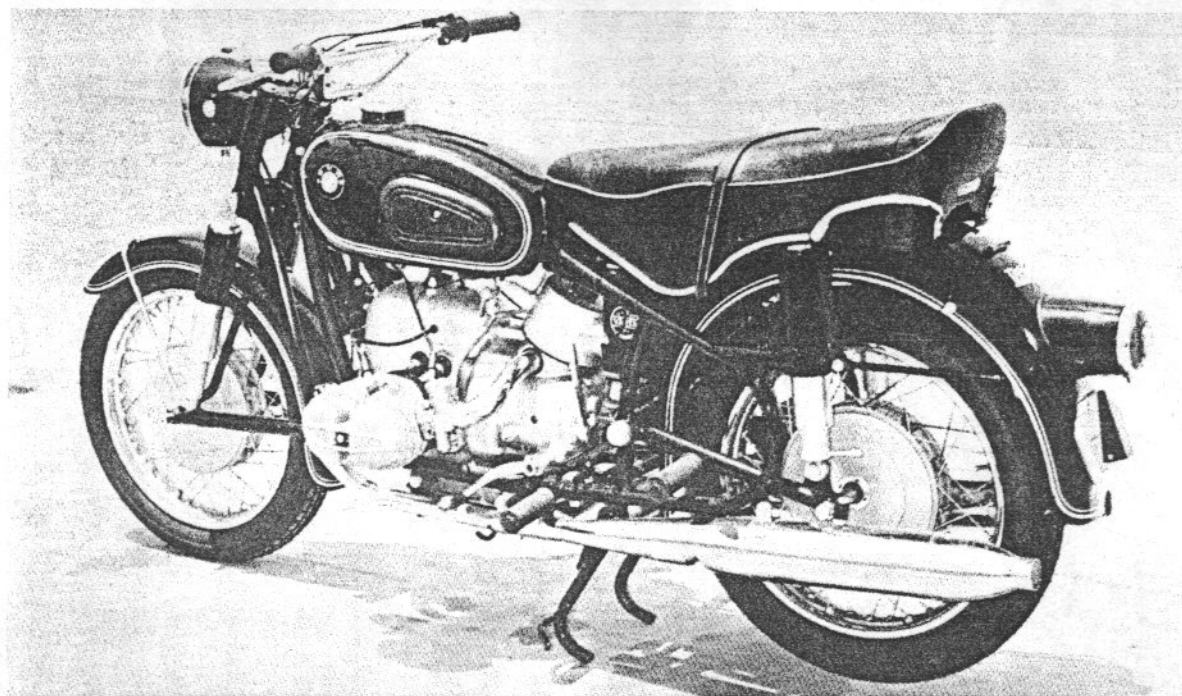


pressed into place on the three-piece crankshaft, permit the use of one-piece connecting rods. These crankpins are spaced at 180 degrees, so the pistons, moving in opposite directions, cancel each other's out-of-balance forces.

There has been much talk about the torque reaction of engine on frame when the throttle is turned; yes, it does exist and can be felt when the bike is sitting still. But, while this "torque" may have been a problem to riders of the old supercharged works racers of the late 30s, it is hardly relevant to discussion of the handling of the 1966 touring version. This might be a good moment to discuss another BMW bugaboo — the one about hanging up a cylinder by laying it over too far in a turn. It is rather evident that the tires will give way before one of those "pots" ever hangs up. And after all, a tourer is a tourer; one should buy a racer for racing.

BMW's sidecar breeding is most evident in the transmission system, which is quite automobilistic in nature, both in heft and design. A single-plate clutch, mounted on a heavy flywheel, car style, takes the drive to a massive gear train. Shifting is done with sliding dog-clutches, bike style, but the transmission is extraordinarily heavy and strong, as it should be to pull an added quarter-ton of sidecar and passenger. This heft does cause a slight problem for the solo rider accustomed to banging light, fast shifts. The Bee-Em takes its own sweet time, especially between first and second; result of a hurried first shift is a resounding clunk and a bearish lunge as the flywheel chews into that no-give clutch.

The BMW begins to reveal its touring qualities at the back of the engine-transmission unit, from which issues



that noiseless, easily maintained and trouble-free drive shaft. The value of this system to anyone who has rolled off a quick 500 miles on a chain-driven road burner is easily seen.

The Munich twin has other small features which show the great deal of thought put into improving the machine's capabilities for touring. For one thing, the two-way adjustable rear damper units require no separate tools, should one wish to change the setting; handles to change tension are cast in place. Two, the oil level is easily checked with a dipstick built into the cap. Three, the ignition key handle is shaped to fair itself in with the molding of the headlight switch assembly and thus keep water out when it rains; a sliding cover moves over the keyhole when the machine is stopped. Four, a single air cleaner feeds both carburetors and is placed inboard out of dust's and water's way; it is easily opened for cleaning with one knob. Five, demounting either front or back wheel for tire repair is a cinch, involving removal of but a few bolts and then the withdrawal of the wheel spindle further, there is no struggling to get the back tire out from under the rear fender, which is hinged just behind the seat and folds up for just that purpose. Six, the muffling system is the most efficient made for any motorcycle in this size category; noise may excite a street racer, but is useless and fatiguing for the man who rides 10 hours at a time. Seven, that big 4.4-gallon gas tank gives the R69S a cruising range of about 250 miles at 60 mph.

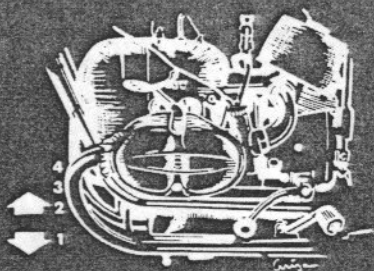
And then there is the ride. One would expect such a big motorcycle to be a handful, but this is not the case. Once it is rolling, the machine steers lightly and tracks well. We also discovered that it is a very easy machine to ride at a snail's pace in traffic. Much of this lightness of feel and slow-speed stability is owing to the low center of gravity offered by the opposed twin design. The so-called ride is further enhanced by the big dual seat, comfortable both for rider and passenger. At faster speeds, the machine stays firmly attached to the ground and doesn't bounce the rider about the way more "competitive" (whatever that means) roadsters do when surfaces get rough or uneven.

Combine the small features with the ride and the machine's ability to run all day at any speed demanded of it, and one has a near-perfect choice in a machine for serious traveling.

BMW R69S

SPECIFICATIONS

List Price	POR.
Suspension, front	"Earles" Leading-Link
Suspension, rear	swing arm
Tire, front	3.50-18
Tire, rear	3.50-18
Brake, front	7.8 x 1.4
Brake, rear	7.8 x 1.4
Total brake swept area, sq.-in.	68.8
Brake loading (test weight/swept area)	
lb./sq. in.	8.9
Engine type	opposed twin, ohv
Bore and stroke	
(inches-millimeters)	2.81 x 2.85, 72 x 73
Displacement (inches ³ -centimeters ³)	36, 593
Compression ratio	9.5:1
Carburetion	(2) 26mm (1.02") Bing
Ignition	Bosch magneto
Bhp @ rpm	42 DIN @ 7000
Oil system	wet sump
Oil capacity, pts.	4.1
Fuel capacity, gal.	4.4
Starting system	kick
Lighting system	battery, generator
Air filtration	paper element
Clutch	single-disc, dry-plate
Primary drive	none
Final drive	shaft & bevel gear
Gear ratios, overall:1	
5th	none
4th	4.81
3rd	6.05
2nd	8.51
1st	13.05
Wheelbase	55.7
Seat height	28.5
Seat width	14.0
Foot-peg height	9.0
Ground clearance	5.3
Curb weight (w/half-tank fuel)	452
Test weight (fuel and rider)	612



PERFORMANCE

Top speed	101.5
Maximum speed in gears (@ 7500 rpm)	
5th	none
4th	118
3rd	92
2nd	66
1st	42
Mph per 1,000 rpm, top gear	15.6
Speedometer error	
30 mph indicated, actually	29.4
50	47.5
70	66.2
Acceleration, zero to —	
30 mph, sec.	2.4
40	3.8
50	5.8
60	7.6
70	10.7
80	14.5
90	19.8
100	32.7
Standing 1/4-mile, sec.	16.20
Terminal speed	82

ACCELERATION AND ENGINE / ROAD SPEED

