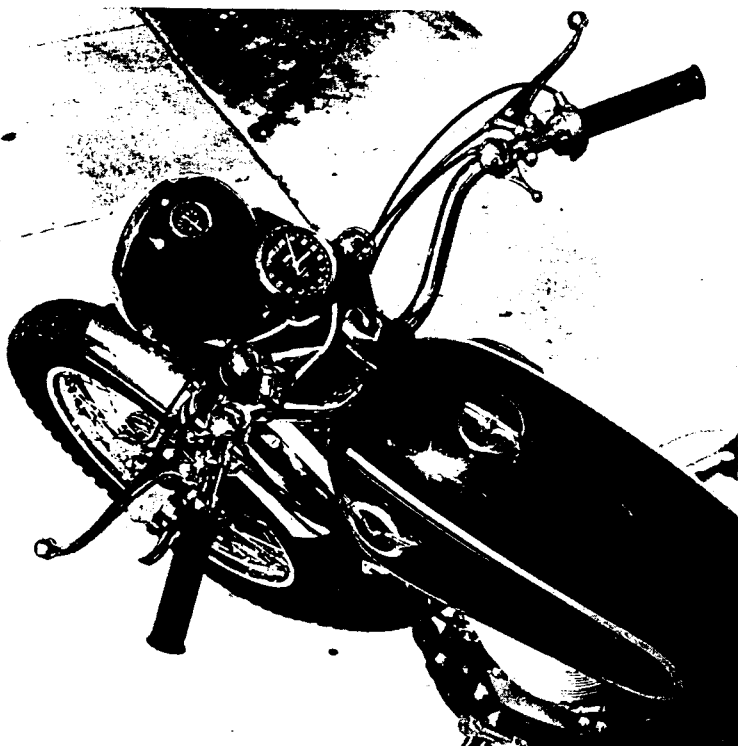
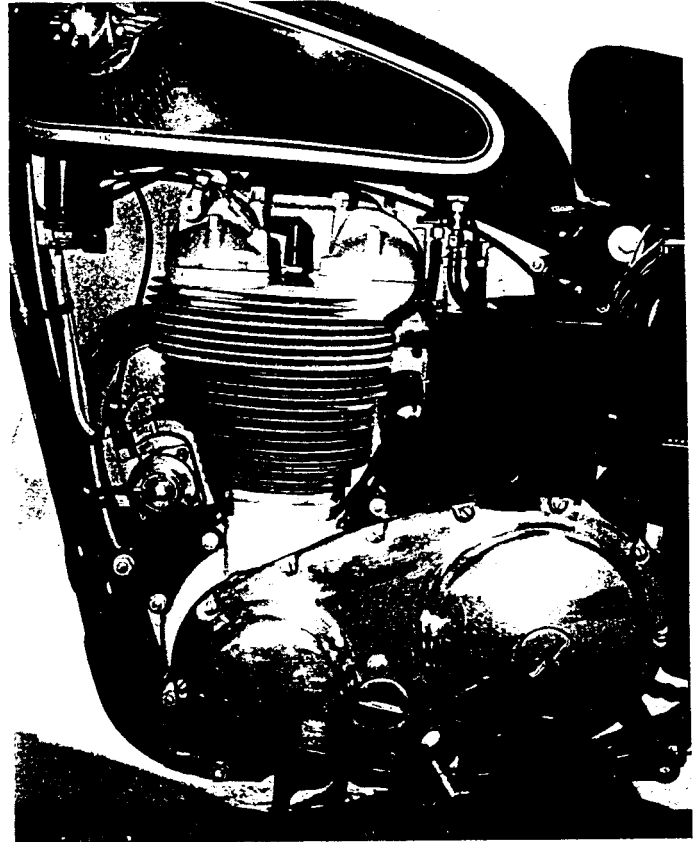
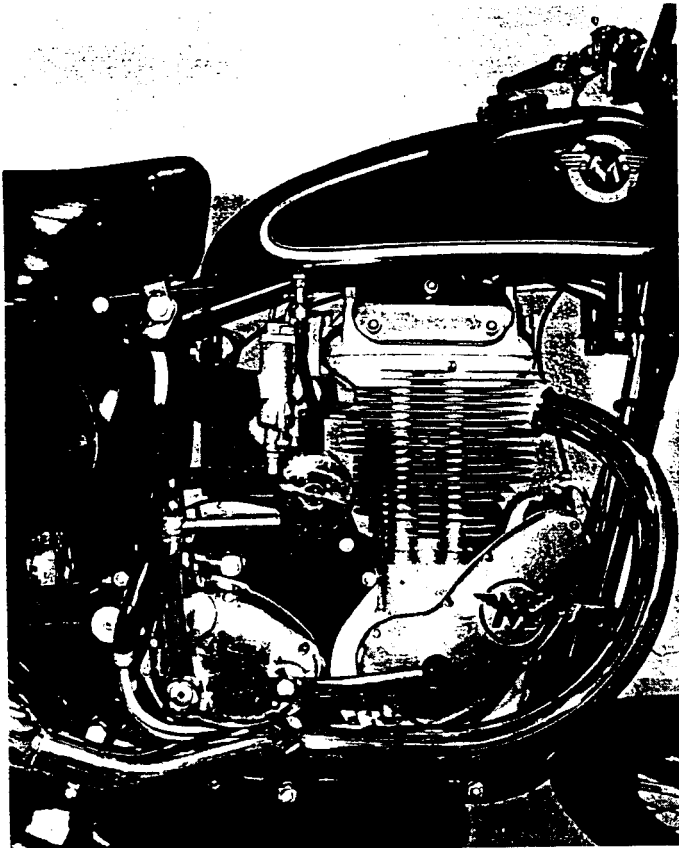


MATCHLESS G-80 CS



OWNER SATISFACTION is the ultimate standard by which all motorcycles must be judged. The best handling, best looking, best performing machine in the world is still a terrible motorcycle if it displays a reluctance to start, or a fondness for time in the repair shops, or a habit of quitting out in the proverbial "middle of nowhere." Conversely, the bike that shows very little that is exciting in its basic specifications can, through sheer willingness, attract a devoted following. Reputation is, in the final analysis, as fine a thing for a motorcycle to have as overhead camshafts, solid-gold handlebars, or anything else one might care to mention. Taken on this basis, the Matchless 500cc single is a jewel beyond price: it is the very soul of reliability, has no handling vices, is reasonably fast, and there are a horde of people passionately fond of the bike who will cheerfully hang from the nearest tree anyone who suggests that they might be just as happy riding something else.

The Matchless G-80 CS that is the subject of this test-report is powered by a further refinement of the 500cc single that has been with us for years, in one form and another, developed from an original design laid down before the Hitler wars. Ancient though its origins may be, however, it is today as modern as any large-displacement single can be. Over the years, the stroke has been shortened and the bore enlarged, to bring it to the present near-square dimensions. The engine has all of its main



castings (cylinder head, barrel, crankcase) made of light aluminum alloys and this has done a lot for both the cooling and the engine's overall weight. Of course, the engine is still no lightweight; those flywheels, which even the torque so beautifully, are about the same size and weight as millstones and they do add considerable heft to the power package.

The cylinder head is heavily finned, and both valves and porting are of sufficient size to permit good breathing at high engine speeds. Hairpin valve-springs are retained as a feature in this engine, and the valvegear chests are unusually wide and low as a consequence. Also retained is the exhaust-pipe mounting system, in which the pipe is simply plugged into a bore at the mouth of the exhaust port. At one time, a great deal more reliance was placed on the ability of the pipe's mounting straps to hold the pipe securely in this bore than was completely justified, and riders found it necessary to add additional support to keep the pipe from creating a fretting corrosion where the pipe joined the cylinder head. Now, this added support has been provided by the factory.

The Matchless engine's lower end is much the same, in general layout, as any other big single, but it does have somewhat larger bearings. On the big-end of the connecting rod, for example, is an exceptionally wide bearing, which consists of triple-row rollers in an aluminum cage. Lubrication for these, and the other, bearings is supplied from a most interesting oil pump. The pump's working element is a double acting piston, which has gear teeth cut in its center. A worm gear on the timing-gear end of the crankshaft rotates this piston, and there is a cam-groove at one end that engages with a pin, and the action of the groove against the pin shuffles the piston back and forth. This provides a two-way pumping action, with more capacity on the scavenging side than in delivery, to insure that the sump does not load with oil. The oil supply is carried in a long, well-baffled tank, which has enough

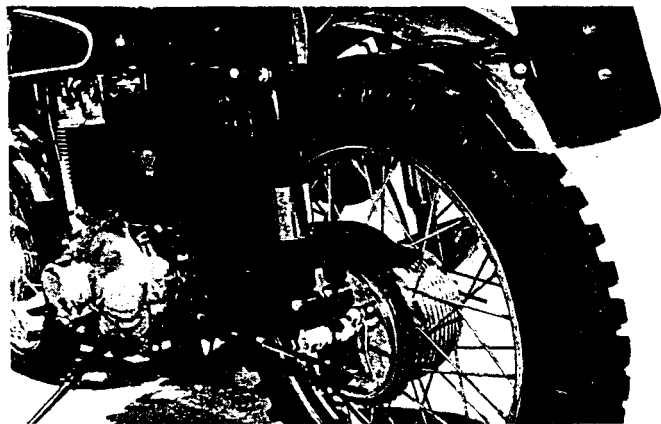
air-space provided to prevent the tank from foaming over under conditions of sustained, high-speed engine operation.

Drive to the transmission passes through a single-row chain to the tried and true Matchless clutch, which will stand more slipping and general abuse than almost any other. The primary chain is adjusted by moving the transmission on its mounting, which is probably a less desirable system than the blade-type automatic tensioners used with unit-constructed engine-transmission units; but it works for Matchless. In any case, there isn't much chain-snatch evident when everything is in adjustment, and one can't ask for much more than that. One feature that helps in producing the drive smoothness is the effective cushion built into the clutch hub.

The Matchless' transmission, although unfashionably separated from the engine and in its own casing, is a particularly nice bit of hardware. The ratios are well spaced, and that is always a delight, but what we found most impressive about the transmission was the smoothness and precision of the shifting action. The gears click right into engagement every time, without forcing, and the transmission could be nudged into neutral from either low or second with ease. And we are told by those who have been riding the "Big-M" in competition for years, and this includes no less than three staff members, that the transmission is all but unbreakable. No amount of stamping and yanking seems to distress it in the least.

A twin-tube, duplex-cradle frame supports all of this machinery, and it too is quite impressive. Very sturdy lugs brace the steering head and most of the other frame-tube junctions, and the makers have not been grudging in their use of masses of iron where the loads are heavy. This particular model, being essentially a competition scrambler (even though fitted with road-gear) had the skid-plates, etc., for that kind of work.

Conforming with what all of the competition riders have been doing anyway, the forks have been extended



on this new model, which accomplishes several things; increasing the fork angle and adding to ground clearance to name but two. These forks, and the swing-arm rear suspension, have a fantastic amount of travel, and are sprung and damped to perfection; this big two-wheeler will bound along over boulders and potholes without a trace of bottoming — or instability and with incredible comfort.

Full-width hubs are featured, per long-time Matchless practice, and this offers the major advantage of straight-in spoke lacing, as we have said many times. The brakes are not outstanding, but they are good; more than adequate for the service the bike will probably see. The front hub is, incidentally, a bit different from that used previously. Although not all of the reasons for the change are apparent, we would guess that the major motivation was added rigidity for the forks.

Another change, and rather unwelcome, is from those fine aluminum-alloy fenders that graced the Matchless for so many years to chromium-plated steel fenders. The new fenders will, no doubt, look better and be more dent and scratch-resistant, but we are not convinced that this change is an improvement. Also, the front fender is quite short, in front and below, and both rider and engine are subject to a steady shower of debris when riding in sand or mud.

Because of the height added by the extended forks, the over-center stand has been eliminated, and one must

rely entirely on the “kick” stand — which is not always convenient if service or on-the-spot adjustments must be done. There is some doubt in our minds that the kick stand will be left on many of the G-80 CS scramblers used in competition. On our first trip out through the brush, the stand’s return spring was torn away and the stand had to be wired up into place. Even more annoying was the fact that the stand is mounted in such a way that it reduces the ground clearance by approximately an inch — and ground clearance is, you will agree, important for this type of bike.

A mixed blessing were the foot-pegs, which were of the folding type and had a little upturned hook at their ends to prevent one’s feet from slipping. This last feature, and the positioning of the pegs, were much appreciated. What we did not like was the way the pegs would stick in the folded position. Several times, when flailing along through low brush, we found that if one’s feet are lifted to clear a high bush, the pegs would fold well up out of the way. This leaves the rider in the uncomfortable position of having to grope for the confounded things with his feet and, with luck, push them back down in position. The pegs need a stop, to keep them from folding too far, and should be free to fall down into place.

The seat we definitely did like, and a lot. It is a Bates seat, installed by dealers here, and it is soft enough, big enough, and shaped well enough, to take a lot of the Monday-morning soreness out of week-end riding.

Most of the staff agreed that the handlebars were not up to the high standard set by the seat, and that nearly everyone would prefer something a bit wider.

The Matchless G-80 CS comes with full road equipment, as we have said, but we did not bother to take it out on the road. A short session at the drag strip was all of the pavement riding done with the machine, which accounts for the fact that no speedometer error tabulation is furnished in the data page. To make a full-fledged, competition scrambler out of it, one has only to remove the electrical equipment, which comes away with an ease that tells us the makers had something like this in mind all along, and install a short exhaust extension pipe to replace the muffler. The chain guard should be removed, as it is heavy and makes chain servicing a problem, although it is a good item to have under any but racing conditions. It is usual to fit a special air cleaner for desert scrambling, but this will not be required on the Matchless; the stock air cleaner, which has a large, washable element, will handle the dust problem very well.

As riders, we were most impressed with this big Matchless. It had a lot of power over a phenomenally-wide engine speed range — as long as the rider does not ask it to pull down too far, and the handling is absolutely without fault. Starting, either hot or cold, was easy; perhaps because of the first-rate Lucas racing magneto that supplies the spark. Performance on our test machine was limited by the touring-type gearing, which would have to be changed for serious competition.

Actually, performance, insofar as pure speed is concerned, is probably never going to be outstanding with this bike. It is, for one thing, as heavy as a sackful of anvils, and the engine feels like it is tuned for a wide spread of power instead of maximum power — which makes it a pleasure to ride, but not exactly a tiger at the drag strip.

Be that as it may, we gained during our association with this Matchless a very high regard for the Big-M, and we can understand how they command such owner-loyalty. The G-80 CS is a most impressive all-around performer on clay roads, up sandy washes, over boulder-strewn creek beds and just about every place but on a paved road — and it seems likely that with the right tires it would be pretty good there, too. •

MATCHLESS G-80/CS

SPECIFICATIONS

List Price	\$1,095 FOB L.A.
Frame Type	tubular, two-loop
Suspension, front	telescopic fork
Suspension, rear	swing arm
Tire size, front	3.50-19
Tire size, rear	4.00-19
Brake lining area, sq. in.	25.5
Engine type	single cyl., ohv
Bore and stroke	3.39 x 3.36
Displacement, cu. in.	30.4
Displacement, cu. cent.	497
Compression ratio	8.7:1
Bhp @ rpm	not specified
Carburetion	1 3/16" Amal Monobloc
Ignition	Lucas magneto
Fuel capacity, gal.	2.4
Oil Capacity, pts.	4.5
Oil System	dry sump
Starting system	kick, folding crank

POWER TRANSMISSION

Clutch Type	multi-disc, wet plate
Primary drive	single-row chain
Final drive	single-row chain

Gear ratio, overall:1

4th	5.80
3rd	7.10
2nd	9.90
1st	14.9

DIMENSIONS, IN.

Wheelbase	55.0
Saddle height	33.5
Saddle width	10.0
Foot-peg height	11.7
Ground clearance	6.1 (stand)
Curb weight, lbs.	380

PERFORMANCE

Practical maximum speed	90
(after 1/2-mile run)	
Speed in gears @ 6800 rpm	
4th	92
3rd	75
2nd	54
1st	36
Mph per 1000 rpm, top gear	13.6

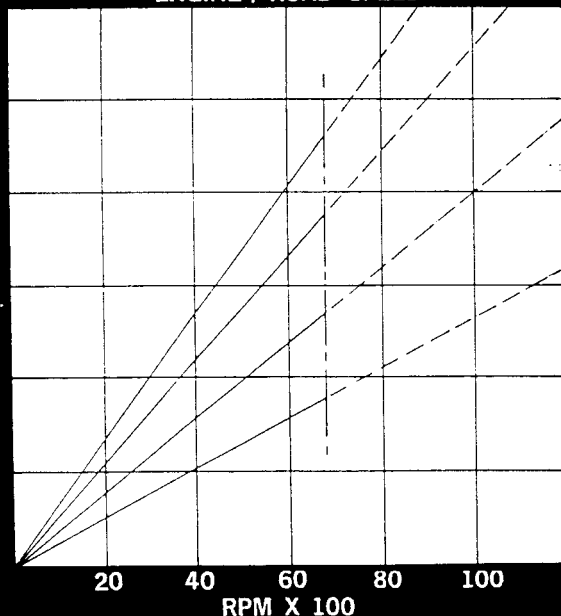
SPEEDOMETER ERROR

30 mph, actual	
50	
70 not tabulated (see text)	

ACCELERATION

0-30 mph, sec.	2.6
0-40	4.3
0-50	6.1
0-60	8.8
0-70	11.9
0-80	16.9
0-90	25.8
0-100	
Standing 1/4 mile	16.2
speed reached	79

ENGINE / ROAD SPEED



ACCELERATION

