

AJS 370

The first machine to come under the scrutiny of the tell-it-like-it-is dyno, was the 370cc AJS. A recent desert test of the very same machine was fresh in our minds at the time, so we were anxious to see just what kind of power had given us such an impressive ride. There had been more on hand at all times than we ever needed, so the results would be enlightening. We were surprised. The engine would not run at full throttle below 4500 rpm, but as we have said that does not mean the engine will not run lower than that. We had ridden it and knew better. We were just unable to record any full-throttle power below that figure.

Taking readings at the planned 500-rpm intervals, the AJS continued to improve its torque figures up to 7000 rpm. At 7500 it took a slight

"No vibration, no stuttering under full load, just a Caterpillar tractor quality low-rpm torque."

drop and would not run at 8000. The maximum calculated horsepower is therefore at the maximum rpm of 7500, a built-in governor preventing the engine from revving any higher. The recorded range covers a full 3000 rpm, with near-maximum torque from 6000 to 7500. Throughout this 1500-rpm range the torque figures vary only 1.1 lb.-ft., and is one of the reasons we were so impressed, for once the revs are over 5000 per minute the torque curve is virtually flat. With the overall gear ratio of a standard AJS, the rider has high-gear power on hand at all times in the 30- to 50-mph range. If you want to go, just turn the throttle.

Corrected horsepower figures throughout the range are not the impressive numbers you may have expected. But we told you horsepower isn't necessarily what makes an engine the ultimate for off-roading. At

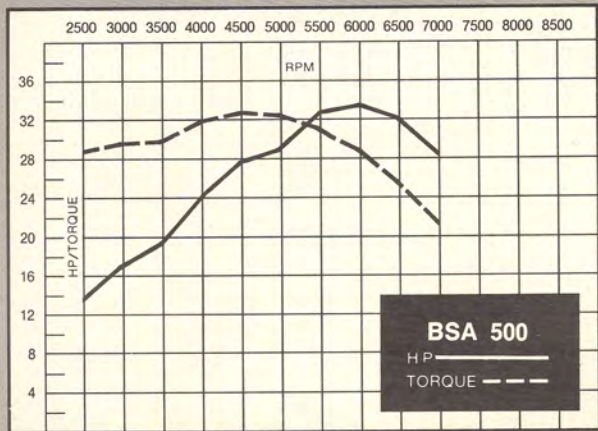
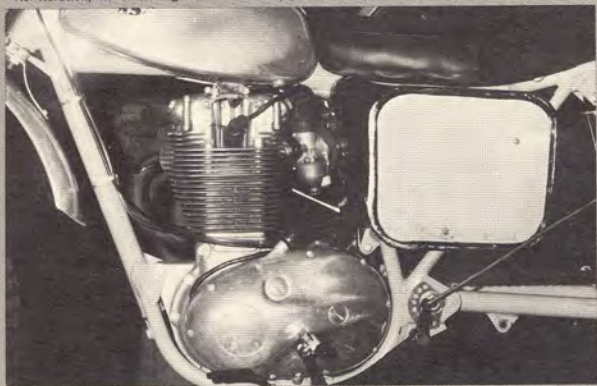
the first recorded rpm, 4500, the horsepower works out to 11.1. At 5500 rpm that number has increased to 17.1 and naturally increases still more as the revs go up. At 6500 the figure is 24.2 and at the maximum rev limit of 7500 the engine develops its maximum horsepower of 27.3. It's a high-revver, exceeded only by the Bultaco, and develops its highest output at the top limit of its rpm.

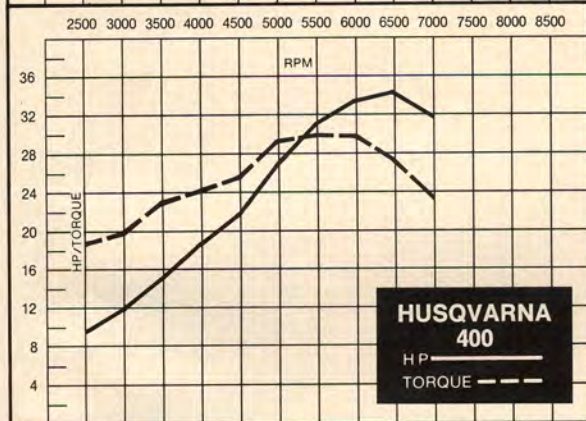
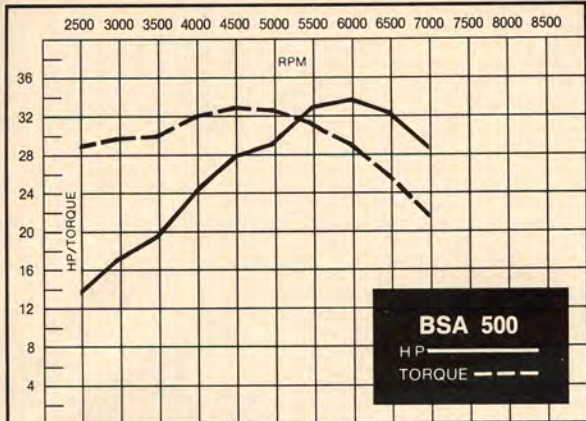
BSA 500

Four-strokes have been out of the hunt for several years now, but BSA obviously feels that it's time for a change. They have competed in motocross events over the last couple of years and have now introduced a 500cc single built just for off-road racing. They have had the Victor series of singles all along, but this new entry has but one purpose—winning races.

As soon as the first 2500-rpm run was recorded, we knew we had a thoroughbred bolted to the dyno. No vibration, no temperamental stuttering that often accompanies an engine under full load at low rpm, just a grunting Caterpillar tractor quality that is the sign of low-speed torque. At 2500 rpm the engine delivers 28.5 lb.-ft. of torque, 10 pounds more than the 400cc Husqvarna, which was the only two-stroke to run at that low a speed. Up through 3500 rpm the torque remained about the same. By 4500 rpm it had reached its maximum of 32.6 lb.-ft. but above that it tapered off as gradually as it had climbed. At 6500 it had dropped to 25.8 lb.-ft. and after that was all done. The amazing part of such a curve is the fact that it lasts over 4000 rpm with only a 6-pound difference between the high and low. This means you can ride the machine just about anywhere you want to go, lock it in high gear, throw the shift lever away and still ride it back.

Because the torque curve goes high up the rpm scale without a significant drop, the calculated horsepower figures are given a boost. Maximum is 32.9 at 6000, but based on the way the engine runs lower down, 6000 rpm is probably higher than you'll ever need to go. At 4500 rpm the figure is 27.9, more than the AJS develops at 7500 rpm. Even at 7000, a point at which the curve is already on its way down, the power is still over 28 hp. This wide spread of good usable power is reason enough to expect a rebirth of the four-stroke single. The two-strokes still have a weight advantage but the long power curve makes up for most, if not all, of the handicap.





none on the Victor MX, hand-lapping the valves will restore a proper seat. And that's about it. At the time of this writing Minert had ridden 17 hard races including the 100-mile Elsinore chase and a hillclimb, all with only one mechanical hitch, a blown condenser during the 15th race. A trace of smoke on the 17th week disappeared after installing new rings, but they are the only components replaced so far. The bike has also survived three torture sessions on the dyno unscathed.

At the track there are main jet changes dictated by riding conditions, such as a larger one for Elsinore's long full-throttle fourth gear sections, but all gearing changes are made with the lever on the right crankcase, thanks to the engine's expansive torque curve; Minert never alters the standard sprockets. Between heats a quick review of chain, spokes and fuel level readies the Victor for further combat.

To prevent being sidelined by damage in a crash or mechanical failure, Minert carries an elaborate collection of spares to each race. These include handlebars, a throttle, two wheel assemblies, a carburetor, complete ignition system, extra footrests, extra chain, extra inner tubes, a couple of sets of rear dampers and usually a pair of forks.

He too must be prepared for the ordeal by keeping his body in shape, because endurance and physical fitness is half the battle in moto-cross. As an L.A. County fireman, Minert participates in exercise programs at work, but presently feels riding once a week holds his muscle tone without extended workouts. When he does go into serious training, running, sit-ups, deep knee bends and more running are his main exercises.

Clements credits a large part of his successes to daily workouts in a weight training class at Pasadena High School where he was a senior this year, and to running. Evenings he dons the usual jogging garb of a sweatshirt and tennies for a 2-2½-mile flight in the residential neighborhoods near his home. The conditioning of both men was evident when, after 15 minutes of flat-out hot-lapping on the exhaustive Saddleback MX track, neither was even breathing hard. Such endurance is of unmeasurable advantage in the marathon of a 45-minute moto.

Maintenance on the Husky for Clements closely parallels Minert's routine. Between race meets he cleans the bike carefully with Tide and water before examining bolts, cables, chain and draining gas from the carburetor; the Filtron air cleaner receives special attention. Barum tires are kept always

RICKMAN-WESLAKE

This time last year, the Rickman-Weslake BSA was a unique motorcycle. The famous Rickman brothers had combined their chassis expertise with the tuning wizardry of Weslake Engineering and come up with a 500cc top end for the BSA 441 Victor bottom end in a deluxe-handling frame. But now BSA itself has enlarged the Victor to 500cc and built it into a competitive chassis. Rickman or BSA. Which one has the edge? Can Rickman build a better 500 BSA

than BSA?

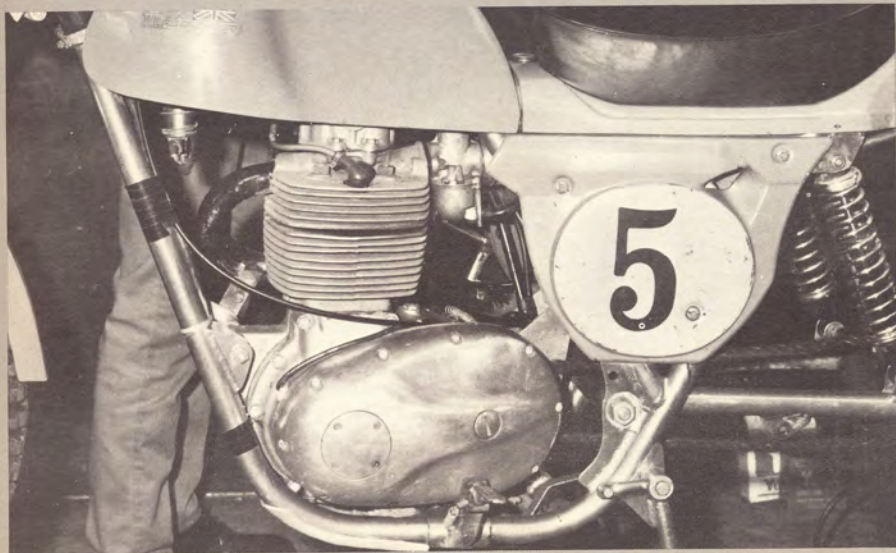
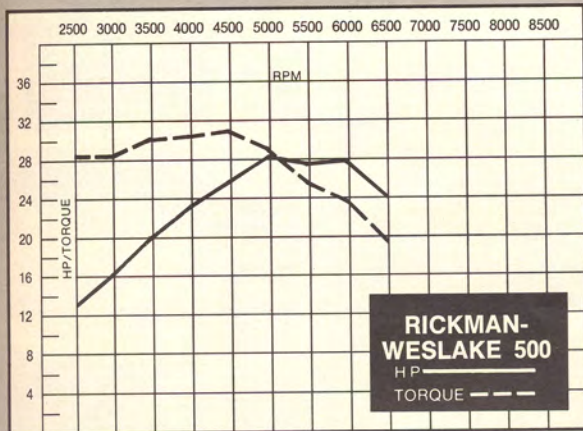
Running characteristics of both engines were similar. Both would provide that bottom-end grunt that the two-strokes could not approach. At 2500 rpm the Rickman has a definite edge on everybody, BSA included. A whopping 29.6 lb.-ft. of torque is over 10 lb.-ft. more than the Husqvarna, the only two-stroke that would run at that low a speed. Up through 3500 rpm the Rickman is still on top, but at 4000 it falls just a hair below the BSA with 31.6 lb.-ft. compared to 31.8 for the NEW Gold Star. At

4500 it registers its maximum torque of 31.7 lb.-ft., about a pound less than the BSA's maximum. After its maximum it fades farther away from the BSA as the revs go up. At its top rev limit of 6500 rpm it is some 5 lb.-ft. short of the BSA. What it had on the bottom it lost on the top, adding still more confusion to the search for what is ideal in an off-roader.

In common with the BSA, the Rickman is long-winded. From 3500 rpm to 6500 rpm there is but an 8-pound variation in torque. No peakiness that has the rider using the gearbox more than the throttle. It is down on the BSA figures but has the same smooth flat curve.

Maximum horsepower output is 28.6 at 5000 rpm. This places it in fifth place if you're keeping score, being topped by the Maico, Husqvarna, BSA and Suzuki in that order. Its maximum is only a hair more than the Montesa, 28.6 hp versus 28.5.

As with the BSA, the figures in the lower rpm ranges are impressive. That's probably where it's at when it comes to covering a lot of ground in a short time. The Husqvarna has it too, as does the Maico. The big horsepower numbers didn't materialize, but its record in California desert races vouches for the fact that it is competitive. If you shop the results lists rather than the specification sheet, 28.6-hp Rickmans consistently do the job on 34.7-hp Maicos. Confusing isn't it?



"The big hp numbers didn't materialize, but its record in races speak for themselves."