



AJS Competition Single Tested Following Big Bear Victory

By Bob Greene—Editor

GULLEY

HERE IT IS! Hot on the tail of the annual Bear chase, a test on the bike that has been cleaning up in every type gully scrambles from Kokomo to Cucamonga.

A week ago, I could only have told you that for some strange reason riders of very short experience could climb aboard one of these mechanized mountain goats and "go like the wind," finishing up in the money overnight . . . Why? . . .

Deciding that hearsay and personal observation weren't enough to satisfy either CYCLE'S readers or myself, a call was put through to Frank Cooper, California distributor of this famed single cylinder acrobat. First plan was to commandeer Del Kuhn's very own machine, but was dismissed when we

found that it had been plugging away the better part of the year without a coke job. So in all fairness a brand new replica of the winning Ajay Competition Scrambles was checked out to your tester. There's no mistaking the purpose of this special breed. Each part is fitted with one thought in mind: that this machine be capable of getting through the worst imaginable terrain with the highest speed, comfort and ease.

A 21 inch block tread tire fitted up front boosts frame clearance, adds delicate steering. At first it was felt that the narrow front hoop would prove too sensitive in sand or soft ground. This might ordinarily be the case, but some factor in the Ajay's makeup—presumably steering head and fork angle—

make the bike feel as though each end were actually suspended by strings in mid-air. This sensation is so pronounced that I, not being accustomed to the Ajay, noticed a slight hesitancy to turn the bars when entering my first corner. To check my reaction, another rider took over and came back with the same unprompted comment. By the end of the day, however, this inherent tendency to remain upright had changed from a strange sensation to one of assurance.

In contrast to the slight appearance of the front forks and wheel are the brutish, strictly business hind quarters. Massive $\frac{3}{16}$ in. wheel spokes carry the knobbyest tire possible. When this wheel turns, something moves, and it's usually the bike. Near impassable

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General Specifications

ENGINE. 500 cc displacement, bore 3.25 inches, stroke 3.65 inches. Compression ratio 7.5 to 1. Aluminum alloy cylinder heads, cast-in cast steel valve inserts. Hair pin valve springs enclosed in oil. Aluminum alloy pistons, aluminum alloy cylinder with a permanent cast-in, cast-iron liner. Extremely large lower end of three rows of $\frac{1}{4} \times \frac{1}{4}$ in. rollers. Two large ball bearing races on drive side of main shaft. Magneto and generator both operated by chain drive, contributing to longer life of electrical parts.

CARBURETOR. Amal $1\frac{1}{2}$ in. diameter venturi. Air cleaner optional at extra cost. Choke lever on handlebar.

TRANSMISSION. A constant mesh direct gear to gear system eliminates usual spool or sliding gear. Shifting by dogs, similar to sychromesh.

LUBRICATION. Circulating dry sump system; two-way plunger type oil pump actuated by sliding worm gears. Built-in filter in oil tank easily replaceable. Oil system through internal passages. Only outside leads are flexible mounted pipes from oil tank to engine, pressure lubrication to top end.

IGNITION. Lucas magneto. Chain drive and shielded by metal deflector, manual control.

ELECTRICAL. All electrical equipment is Lucas, new long type heavy duty 6-volt generator has voltage regulator, chain driven. High and

low beam headlight, taillight and parking light. **CLUTCH.** New heavy duty 5-stud with fibre inserts. Multiple disc dry type.

DRIVE. Pre-stretched Mark 10 Reynolds racing chain, shock absorber on engine sprocket. Single row $\frac{1}{2}$ in. pitch by $\frac{3}{16}$ in. wide roller primary chain. Rear chain is $\frac{3}{8}$ in. pitch x $\frac{3}{8}$ in. wide roller, same size as American big twins. 18 tooth sprocket instead of standard 21 tooth.

GEAR RATIOS. Top 5.83; 3rd, 7.47; 2nd, 12.20; 1st, 18.44 to 1.

FRAME. Single loop front section with rear suspension swinging arms set in large, wide journal bearings. Huge rear main springs are 6 in. long by 3 in. in diameter. $3\frac{1}{2}$ in. travel on rear swinging arms.

FORKS. Teledraulic, fitted with metered pistons for constant control with oil on both sides of piston to buff counter recoil as well as recoil. This same system applies to rear forks.

MUFFLER. Short, upswept, pipe chrome-plated plus extra straight pipe for competition at no additional cost.

HANDLEBARS. Chrome-plated competition, rigid mounted. Left bar: clutch, compression release, spark control, dimmer switch. Rear bar: front brake, throttle, choke lever and horn. Clutch and throttle have extra control cables at no additional cost.

WHEELS. Mounted on Timken type roller bearings. Safety washers on hubs prevent spokes from tearing out. Rear wheel: $\frac{3}{16}$ -in. spokes and extra heavy rim.

BRAKES. Internal expanding 7-in. front and rear, shoes $\frac{3}{8}$ in. wide.

TIRES. Front: 300x21 Trials Dunlop. Rear: 400x19 Dunlop Sports knobby.

TANKS. Pressed steel 2.8-gallon competition type with double outlet, single filler cap.

INSTRUMENTS. Smith's 120 mph illuminated speedometer, ammeter and light switch in headlight shell.

SADDLE. Wide Lycette, leatherette covered. Sprung with conventional coil springs.

FINISH. High temperature baked enamel black finish. Very hard and durable.

FENDERS. Lightweight high polished aluminum alloy sports type with braces over outside of fender.

TOOL KIT. Complete set of tools, grease gun, tire irons and ignition tools. Tire pump mounted on left side of frame.

WEIGHT. 375 lbs. with oil.

OVERALL LENGTH. 85 $\frac{1}{4}$ in.

OVERALL WIDTH. 29 $\frac{1}{2}$ in.

WHEELBASE. 55 $\frac{1}{4}$ in.

GROUND CLEARANCE. 7 in.

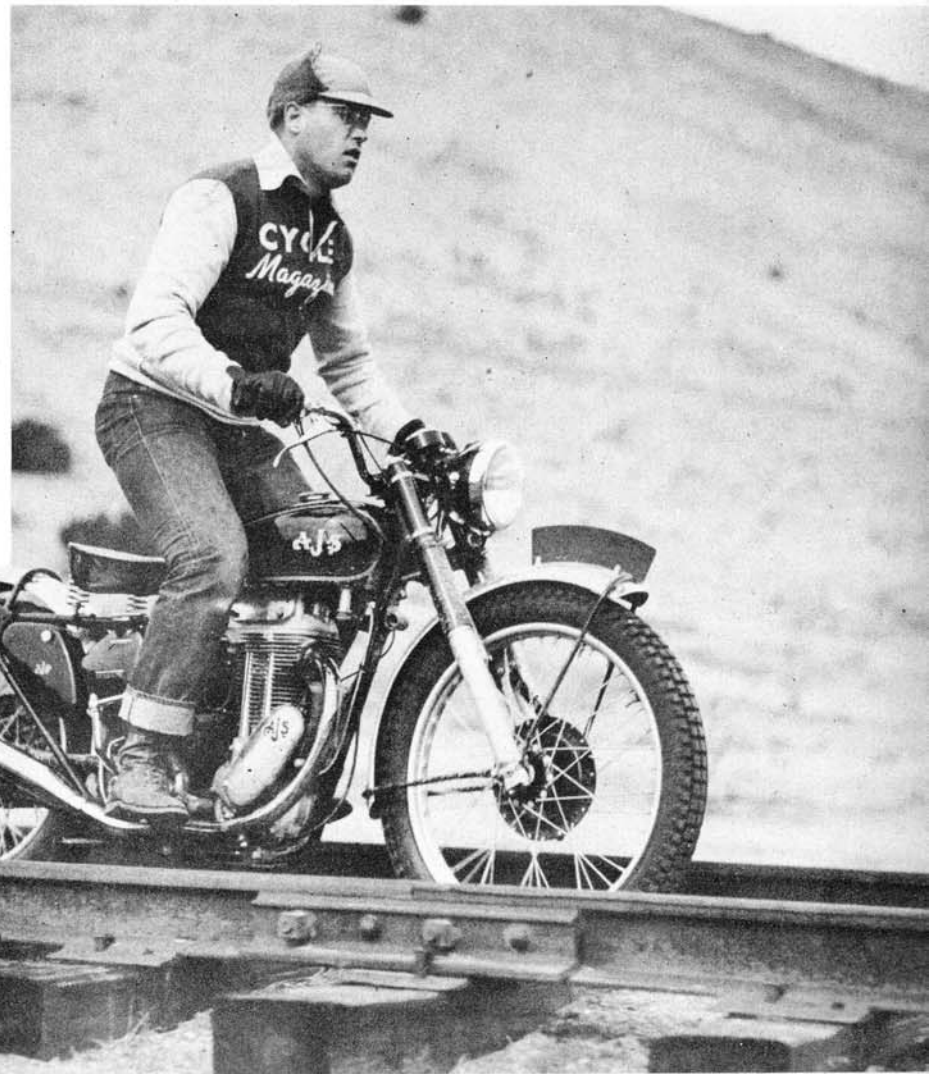
SADDLE HEIGHT. 32 $\frac{1}{2}$ in.

sections of boulder and brush-studded open countryside were challenged with deliberate cockiness. Usually the Ajay proved itself just a shade more flippant than its tormentor. At times when it seemed certain that the machine would hang up or stick, the bike and I would catapult over the mess without so much as ticking the frame. On rare occasions when it would dig in after hanging on fallen trees or rock, it was only necessary for me to lean the bike over, while still astride, kick dirt or rock beneath the rear wheel with my heel, right the little job again—and be gone.

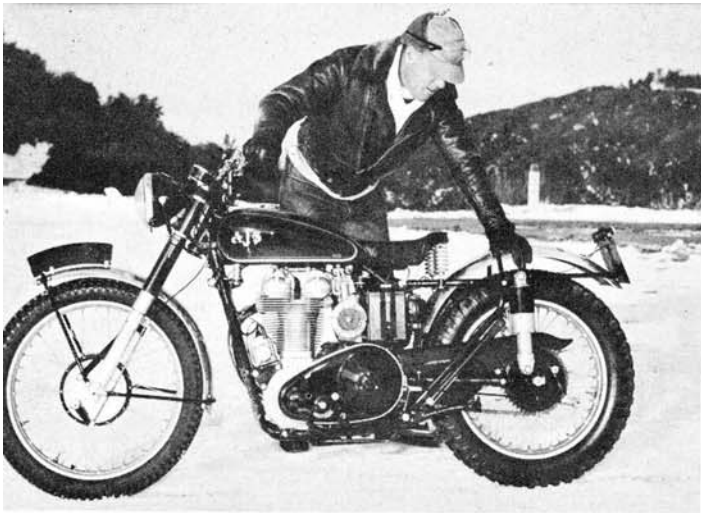
Special consideration is given to riders' comfort by the soft, swinging arm suspension system similar to the McCandless type used on the Isle of Man Velocette, Norton and Gilera. Unusual in appearance, this design was determined one of the most practical rear suspensions yet to be tested.

Although the rear of the machine did creep sideways when the pressure was turned on in a fast pavement corner, the blame

(Continued on next page)



KING



The unusually soft, long action rear plungers, like the patented Tele-draulic front forks, are oil cushioned at both ends of their travel. Result —no metallic bottoming. Quick-release headlight plug is novel feature



High Scrambles seat position makes it easy to uncoil a leg and stab at the ground when cornering on a slick surface. Rear Dunlop Trials tire held well in snow. Rear shock has compressed almost an inch during turn

(Continued from preceding page)
was attributed directly to the radical knobby dirt tire, for when heeled well over, the entire weight of rider and machine was concentrated on the single outer row of knobs. Here at last is a rear fork that has a slow and soft full length travel. That this design reflects thoroughness is shown by the fact that each rear shock unit is additionally cushioned with 85 cubic centimeters of hydraulic fluid. I can't recall a metal to metal bottoming once during the test.

On the timed run over Angeles Crest mountain range, speed fell off. This challenge to engine power and handling qualities was further enhanced by intermittent patches of ice. The nasty road condition and previously mentioned radical rear tire were the slowing forces that clutched at the speedometer all the way over the mountain. This cushioned my surprise when the watch was whipped out at the end of the run. The usual 35-minute, 35-mile ride had taken exactly 39 minutes.

Because of their short wheelbase and other obvious handicaps, motorcycles have always

posed a problem in springing. AJS approaches the epitome. The long lazy action of the rear member works hand in hand with the front forks, taking the sting out of sharp dips with a minimum of counter-recoil whip. Both front and rear plungers are not only oil dampened, but have the same liquid cushion at each end of travel.

A full appraisal of the Scrambles' handling ability and clearance can be appreciated through one of its many tricks. Riding between the rails of an ordinary railroad track at an approximate 7 mph it was possible to turn sharply and ride right over and out of the rails without hesitating. Even here the frame didn't as much as touch the rails when crossing over.

In over 200 miles of rough and tumble riding, it is easy to assume that a few shifts would be missed. Not on your life! This new gear box, an adaptation of the one used in the famed AJS Boy Racer, can hardly be compared to anything you've ever experienced. Very little more than the weight of your foot on the shifting pedal is needed

for each change. Once the pedal has been depressed it seems to suck itself into the next gear. Direction of travel is the same as in the past, up for low, then down through to high. This gear box is a direct take-off on the Boy Racer model except that it is not full ball bearing throughout. Practically speaking, it is impossible to miss a shift with this new arrangement.

While the braking figures were not phenomenal, it must be remembered that the bike is rigged strictly for competition, and that neither the narrow block tread on the front nor the accented knobby on the rear are conducive to braking efficiency over pavement. Both pedal and hand lever action were easy and progressive. With more rational tires fitted, it is believed that this model would show high braking efficiency in view of its springing range.

Everything is up out of the way on the Scrambles including the rider. Although the rigid gull-wing footpegs are nearly a foot off the ground, the relative high location of the saddle keeps the rider's legs at such an up-



Running between railroad tracks at 5 mph it was possible to turn sharply and ride over and out of the rails without pause or footing. Contributing factors here were bike's short turning radius and high frame clearance. Note contoured exhaust system is out of the way



Rear wheel is practically geared to road for slugging. Fender braces are mounted outside to help keep inside of fender from loading up in mud

right angle that rising to a post position can be done quickly and with little effort.

The handlebars, although not of the extreme high type, are a perfect match both in rise and sweep back. This is not a factory bar, but is optional according to rider's choice, in the California area.

Another aid to riding control is the narrow, trim-looking gas tank which allows the knees to be kept close in when picking a path through a difficult section of ground, and seems to make for more sensitive control.

Down in the engine room Ajay differs in several ways from many of the singles. Few cylinders have the massive finning area that has been dedicated to cooling. Head hold-down bolts run clear through the cylinder to the cases for added top end rigidity. Racing type hairpin valves, enclosed in those two large domes atop the barrel, are claimed to have more snap than conventional coil valve springs and are less affected by heat because of their more remote position. An especially heavy formation of finning can be noticed about the exhaust port area.

We were also interested to learn that a new type of steel flywheel is now being used that allows a much tighter fitting of the crank pin; thereby reducing chances of flywheel slippage. A large flanged bronze bushing on the timing side of the main bearing now stands ready to back up the main shaft in case of failure of the shock absorber spring on the engine sprocket. Continued running after breakage of the shock absorber spring has in the past occasionally resulted in end play which allowed the main shaft to pound through the opposite side of the case. This condition can no longer be a threat.

Fortunately for those who will be unable to obtain true Competition Scrambles jobs in '52 (yes, production is limited on the Competition model) there is little basic difference between it and the standard single cylinder model. The stock job can be converted by replacing its 19 inch front wheel with a 21 inch hoop, switching fenders, fuel tank, exhaust pipe and cams. The standard 500 has hairpin valve springs this year, and with the addition of the longer duration competition cams, only the alloy cylinder remains as a major difference.

For the lad who just can't seem to get the hang of backwoods riding, or the elder who's about to toss in the towel because the runs are getting too tough, the Ajay is a shot in the arm. It may be worth \$865* to your ego. To those who are already Scrambles-mounted I say, "So long—wait for me at the next check."

*Plus tax and license at Los Angeles, Calif.

PERFORMANCE SUMMARY

Maximum in Low	32 mph
Maximum in Second	51 mph
Maximum in Third	65.45 mph
Maximum in High	81.81 mph

BRAKING

From 25 to stopped, rear brake only	43'4"
From 25 to stopped, front brake only	36'5"
From 25 to stopped, both brakes	24'

ACCELERATION

*1/10 mile drag (9.2 sec.)	39.1 mph avg.
8.51 mph/sec. (avg. velocity change rate)	
*1/4 mile drag (17.3 sec.)	52.0 mph avg.
6.01 mph/sec. (avg. velocity change rate)	
*Low, second and third gears used	

SLOW RUNNING

High gear without snatch	14 mph
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TURNING CIRCLE

Minimum Diameter	12'6"
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MILEAGE

Under competition circumstances	44 mpg
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OSL—250 cc—10.5 H.P.—OHV 4 speeds.

OT—350 cc—13 H.P. OHV Link action front fork. 4 speeds.

CONSUL I—350 cc—OHV—18 H.P. **CONSUL II**—500 cc—OHV—22 H.P. Hydraulic front and rear springing adjustable. Tubular cradle frame, ignition with automatic advance and retard.

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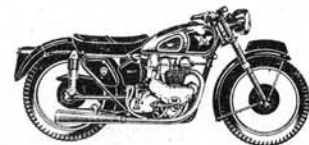


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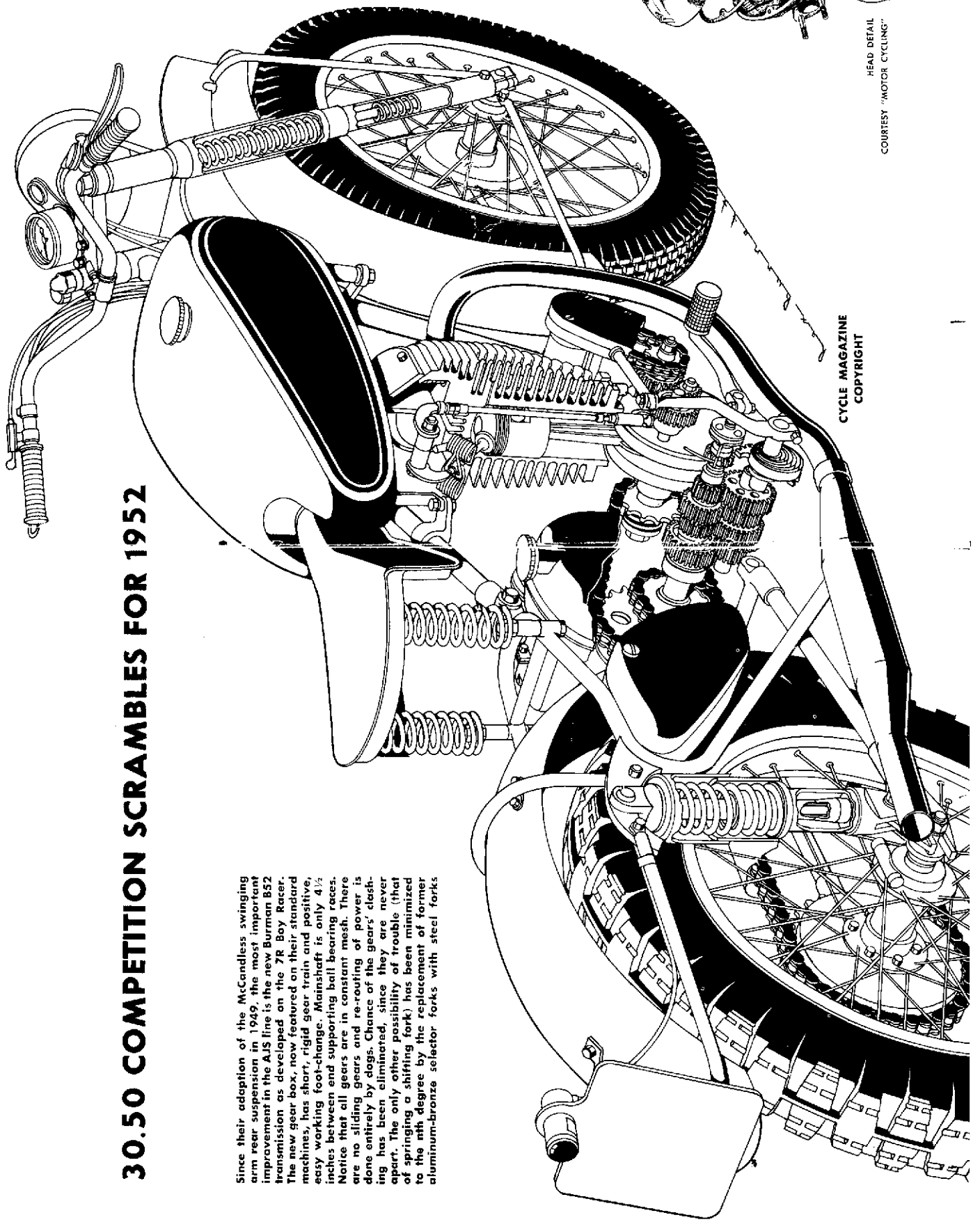
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30.50 COMPETITION SCRAMBLES FOR 1952

Since their adaption of the McCandless swinging arm rear suspension in 1949, the most important improvement in the AJS line is the new Burman B52 transmission as developed on the 7R Boy Racer. The new gear box, now featured on their standard machines, has short, rigid gear train and positive, easy working foot-change. Mainshaft is only 4 1/2 inches between end supporting ball bearing races. Notice that all gears are in constant mesh. There are no sliding gears and re-routing of power is done entirely by dogs. Chance of the gears' clashing has been eliminated, since they are never apart. The only other possibility of trouble (that of springing a shifting fork) has been minimized to the nth degree by the replacement of former aluminum-bronze selector with steel forks



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HEAD DETAIL
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