

A.C. Aceca-Bristol



SCI ROAD TEST:

PATTERNED AFTER JOHN TOJEIRO's Bristol-engined special of several years ago, the Ace- and Aceca-Bristol indeed prove the hoary old maxim, "Racing improves the breed." Perhaps it might be rephrased to read "Breeding improves racing," for how's this for a competition record: In twenty-five starts, Bob Oker snagged twenty-five wins in Production sports car category on the West Coast, against such worthy opposition as Corvettes and 300SLs. At Sebring, four ACs started and four finished; with a class win against two liter Ferraris and Maseratis. At LeMans, the only AC entered finished tenth overall and first in the production category. In SCCA and CSCC racing, Bristol-engined ACs dominate Class E Production with only an occasional setback to remind us that driver skill counts for a lot, too.

This doesn't mean that AC is building race cars, though. Rather, it proves that they build pretty exceptional Grand Touring cars. We put the AC-engined Ace through its paces for SCI, August, '56. Its roadability was of an exceptionally high order and, with its single overhead camshaft, 90 bhp power unit, it was an exciting, exhilarating car to drive. Now Jackson-Moore had placed at our disposal an Aceca coupe with a Bristol B-type engine rated at 15 bhp more. But power to weight ratios for both cars were nearly identical, and we anticipated having little more to talk about than the coachwork of the coupe. This turned out to be far from the case.

The Aceca (pronounced Ay-see'-kuh) with the B engine is geared to run out of revs at just about the same top speed as the 90-bhp car. But there is a noticeable difference in acceleration, as the figures in the data table show. The Bristol engine, not noted for its silence, is surprisingly quiet to the Aceca's occupants due to good insulation of the passenger compartment . . . but at high revs the car's *gran turismo* personality gives way pretty completely to the character of a high-strung thoroughbred racing machine. As you accelerate with respectable torque and a speed-gathering pull, rather than a thrusting one, there is little change in

sound level up to about 4000 rpm. Here the cam really slams in, the muscular torque with it, and a demonic howl crescendos until the 5000 rev red-line is reached. Such is the form of the B engine's torque curve that a zero to 80 mph run made with shift points at 4200 was a full three seconds slower than an identical run made with gear changes at 4900.

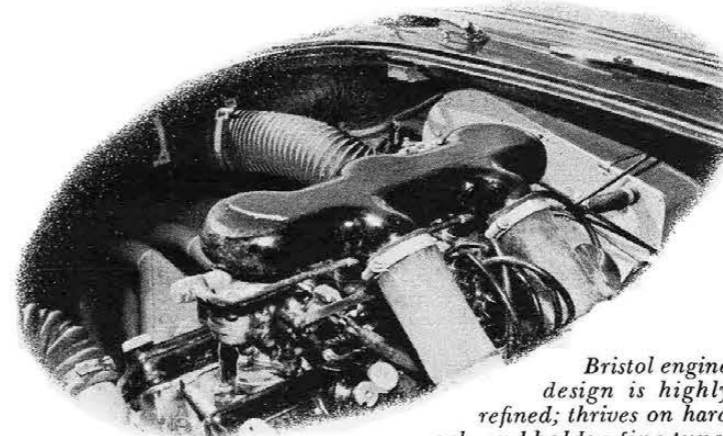
The B is the mild Bristol used by AC. Much hotter is the D, which is available in two stages of tune. The D2, which is the designation for the Stage One D, pulls about 126 bhp at 5750, as opposed to the B's 105 at about 4500. The D-cam comes in at about 3000 with a solid punch in the back, but it is weaker than the B below that figure. Only the D has acceleration pumps on the three Solex downdraft carbs. It also has individual flame-trap air cleaners, as opposed to the B's collector box and single, large air cleaner. The B's compression ratio is 8.5 to one; and here is the only difference between the D Stage One and Stage Two: They are 9.0 and 9.5 to one respectively. The D, of course, is the engine to race with. You can race, if you wish, with the "B," but you're giving away a lot.

The rumor mill in Britain has it that Bristol's new 2.2 liter engine soon will replace the current B type. Horsepower output will not be changed but much more low-speed torque will be on tap. The price of an Ace or Aceca with either B or D engine is the same, and if the 2.2 rumor is accurate, it will cost no more than the current alternates.

What do the various combinations cost? The Ace roadster is priced on the west coast at \$4799 with AC engine or \$5999 with the Bristol. The Aceca AC is \$5699 and the Bristol-engined coupe is \$6599.

The AC engine itself, although as venerable as the Offy in design, is just as classical and just as refined. Performance of AC cars with AC engines is entirely satisfying to many critical enthusiasts. Its fuel economy runs about four mpg higher than that of the Bristol and its durability is well established.

The much more costly Bristol engine also is far from new in concept, but the original design was a masterpiece and



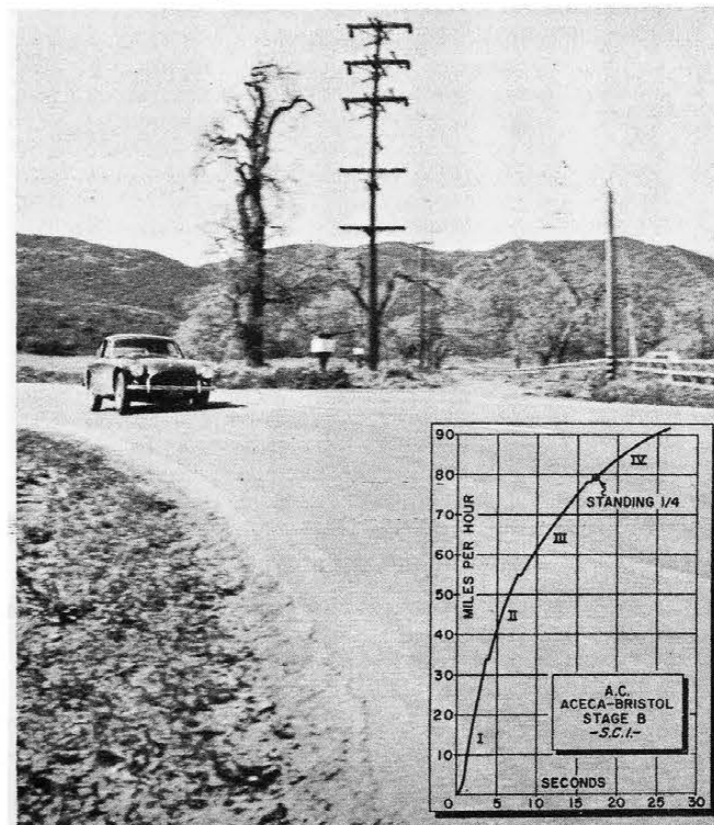
Bristol engine design is highly refined; thrives on hard work, and holds a fine tune.

the super-refined modern version is no less. It has the reputation of running for hundreds of thousands of miles and of thriving on hard work. A masochistic mechanism, it wants to be flogged (though not over-revved). It is polished and balanced throughout; its crank is nitride-hardened and runs in tri-metal bearings. It craves a sharp tune and holds it for a long time.

Roy Jackson-Moore confessed that the KLG plugs in our test car, which had logged over 21,000 miles, were the originals. "I don't sand blast them," he said. "That won't clean the remote air space. I take them apart and clean them with a brass-wire suede brush. Try it. You'll be amazed at how long they stand up to test."

Bob Oker told me, "The only trouble we ever did have with our Ace Bristol's engine was some piston ring flutter that beat the ring lands out." He then went on to explain that he habitually wound the engine at 7200 rpm!

Race or road, ease of cornering makes for high average speed.



A. C. ACECA - BRISTOL

U.S. Importer: Rootes Motors, Inc.
505 Park Ave., New York, N. Y., and
9830 West Pico Blvd.
Los Angeles, Calif.

PERFORMANCE

TOP SPEED:

Two-way average 105 mph
Fastest one-way run 106 mph

ACCELERATION:

From zero to	seconds
30 mph	3.2
40 mph	4.7
50 mph	6.4
60 mph	9.5
70 mph	12.8
80 mph	17.5
90 mph	24.6
100 mph	36.4
Standing 1/4 mile	17.2
Speed at end of quarter	79 mph

SPEED RANGES IN GEARS:

I	0-34
II	10-55
III	14-78
IV	16-top

SPEEDOMETER CORRECTION:

Indicated	Timed	Indicated	Timed
30	31	70	69
40	41	80	79
50	51	90	89
60	60	100	98

FUEL CONSUMPTION:

Hard driving 19 mpg
Average driving (Under 60 mph) 25 mpg

BRAKING EFFICIENCY:

(10 successive emergency stops from 60 mph, just short of locking wheels)

1st stop	70	6th	75
2nd	70	7th	75
3rd	70	8th	79
4th	70	9th	79
5th	70	10th	83

SPECIFICATIONS

POWER UNIT:

Bristol stage B In-line six, water-cooled
Valve Arrangement Pushrod overhead, vee-inclined valves
Bore & Stroke 2.59 x 3.78 in (66 x 96 mm)
Stroke/Bore Ratio 1.45/1
Displacement 120 cu in (197/cc)
Compression Ratio 8.5/1
Carburetion by Three Solex downdraft
Max. Power 105 bhp @ 4750 rpm
Max. Torque 123 lbs-ft @ 3750 rpm
Idle Speed 650 rpm

DRIVE TRAIN:

Transmission ratios	test car	optional ratios
I	2.29	
II	1.83	
III	1.29	
IV	1.00	
Final drive ratio	3.64 (3.89, others on order)	
Axle torque taken by	frame-mounted final drive housing	

CHASSIS:

Frame Tubular Steel
Wheelbase 90 in
Tread, front and rear 50 in
Suspension, front and rear Independent, transverse leaf spring and lower wishbones
Shock absorbers Armstrong telescopic
Steering Bishop cam type
Steering wheel turns L to L 2
Turning diam., curb to curb R 36 1/2 ft, L 33 1/2 ft
Brakes Alfa drums, 2 LS front, 1 LS rear (discs optional)
Brake lining area 150 sq in
Tire size 5.50 x 16

GENERAL:

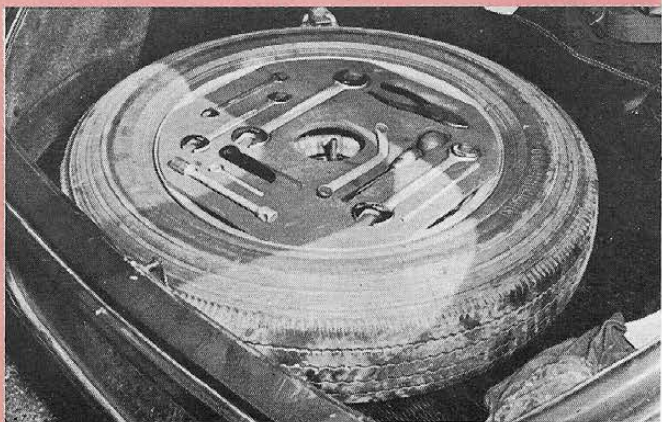
Length 153 in
Width 61 in
Height 52 in
Weight, as tested 2130 lbs
Weight distribution, F/R as tested 44/56
Fuel capacity 15.6 U.S. Gallons

RATING FACTORS:

Specific Power Output 0.88 bhp/cu in
Power to Weight Ratio 20.3 lbs/hp
Piston speed @ 60 mph 1740 ft/min
Braking Area 143 sq in/ton
Speed @ 1000 rpm in top gear 21.7 mph



*ABOVE: Fully independent rear suspension allows driver to bore well into turn, as rear is tenacious even under power.
BELOW: Road tools fit into recesses in spare tire leveler.*



Front wheels are aligned with a slight positive camber; rear wheels with a slight negative camber, in the interests of directional straight-ahead stability. Body lines are clean.



Oker also had this to say about the Bristol power unit. "The secret is in the tuning. There are few mechanics who can do a top job. The engine is so specialized that if it isn't right it isn't worth a darn for real output. I don't think it's a dual-purpose engine . . . not if you're interested in racing and being out in front. The Bristol holds a streets tune indefinitely, but to hold a really sharp racing tune I'd keep one off the streets. We found that ours would come in and start performing at optimum after about 45 minutes of racing. Then it would go better and better until about three races had been run. We learned, after that, to re-ring and re-tune."

Al Crundall of Santa Monica brought over one of the first Aceca Bristols to reach the U.S. That was in 1956 and he now has over 15,000 commuting miles on it. How has it performed. "Not a moment's trouble," he said. "It's a B type and I've had it indicating 120 often . . . must be about an honest 113. My gas mileage runs from 21 to 25 and I don't drive for economy."

From the moment we eased behind the Aceca's beautiful and fully adjustable steering wheel, we felt completely at home. The erect bucket seats seemed even more comfortable and to give better lateral support than those of the roadster. The full complement of instruments is laid out logically and is set off against panelling of walnut burl. The transmission tunnel is high, but leg and foot room, we felt, are more than sufficient. Visibility is excellent all around and is helped by the huge rear window (clear plastic). Many coupes tend to become mobile hothouses in warm weather, but not the Aceca. In addition to good insulation and the customary roll-down windows and no-draft vents the small rear windows may be opened. Too, the car's efficient heater includes a cool air source, with vent ducts to the foot area.

As you get under way in the Aceca, its steering has a heavy feel which becomes very, very light as speed is increased. The steering linkage is of the center-point type and the gearbox is Bishop cam with a slow ratio in the dead-ahead position and quicker ratios towards the extremes of lock. Most Detroit steering gearboxes follow this design but they don't achieve just two turns from lock to lock. The combination of variable ratio with quick steering gives the Aceca and Ace very distinctive steering feel. Oker reports that when he's been away from one of these cars for a while it still takes him a good 20 minutes to become accustomed to their steering again.

Transverse leaf springs above and light, steel-tube wish-bones below are the basis of the car's suspension. The ride, judged by sports car standards, is very firm and at the same time very comfortable. The front wheels are aligned with a slight positive camber and those at the rear with slight negative camber, in the interest of straight-ahead stability. But the first time I took the Aceca past the 90 mph mark I backed

(Continued on page 56)

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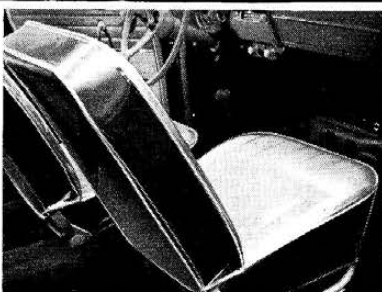
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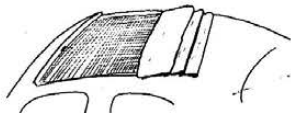


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ACECA

(Continued from page 20)

off in a hurry. The car squirmed—unpleasantly, to me—from side to side so I came to a stop and asked Jackson-Moore to clue me in on this phenomenon.

"Oh, that" he said, "I'm completely used to it. It never gets any worse than what you just felt. You learn to roll with it; give the steering its head and keep your corrections light and small. You know," he added, "I think it's to do with the tires."

I wasn't completely sold on this explanation, so I asked Bob Oker if he'd noticed it. "Sure," he said, "It's due to the tires, all right. We've tried several makes on my car, and for its particular suspension I think Englebert P-types are the best.

In cornering, the Aceca has no peculiar vices and, aided by fully independent rear suspension, is very quick and tenacious. It is just about impossible to lift a rear wheel while wheel hop on bumpy curves is nearly non-existent. Under power the steering is fairly neutral and, although it's tail-heavy, the rear end does not tend to slide out. But if you are overdoing it a bit and back off on the throttle, you bring the tail around. Open the throttle and the tail will stick again. It's a safe car for the go-fast novice and an instrument worthy of expert skills.

This car's brakes are Girling two leading-shoe units with Alfin drums and the word "adequate" fails to do them justice... for touring use. As we found with the Ace roadster, they actually get better with continuous use. However, Oker points out that the only real trouble he ever had while racing his Ace came from the front brakes. Under the pressure of the two leading shoes the drums would bell-mouth and begin to crack after three or four hard races. This experience was commonplace and led to AC making Girling disc brakes optionally available for the front ends of cars that are to be raced. The Alfin rear brakes, with a single leading shoe, do less work, run cooler and give no trouble.

AC cars, although they are lighter than lower-priced production sports cars, use double-laced wire wheels and this emphasis on the strength that underlies its punishment-defying reliability seems to be consistent throughout the machine. A beautiful steel-tube space frame provides support for the entire coupe body which has a genuine carved-from-the-solid feel that is not always found in coachbuilt bodies of this type.

The buyer of an Aceca will rarely see the double of his car on the road or parking lot. In a normal month AC produces between 35 and 42 units. Most of these are Aces, i.e., roadsters. The coupes have much more complex frames and body panels—all done by hand. It takes about three months to complete a coupe and average production is two per week.

AC has been slow in building up a sales organization in the U.S., partly because the demand for its small output is very good on the British home market. Still,

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Says Jackson-Moore, "Our customers aren't stuck on availability of parts or on price. Our parts prices often are lower than those of many of the cheaper cars because our distributors buy directly from the factory. The customer pays only one mark-up. For example, the bumper guards for one low-priced sports car retail for about \$8.50. Our distributors can retail our guards for \$3.50 and still make a good profit."

It will be a long time before most AC owners have occasion to take advantage of these benefits; the cars have a reputation for being trouble-free and maintenance-free. What they buy is a tailor-made conveyance that is in a class almost by itself. It has style, beauty and distinction and it combines the comforts of the grand tourer with the competence of the pure competition machine. The docile, B-engine Aceca is quick enough for most. For those who are willing to exchange just a bit of temperament for 120 mph-plus speed and even more urgent acceleration, the electrifying "D" engine can be had at no added cost. AC Cars, Ltd. is an old company and a small company, dedicated to the production of a small volume of superior products. In engineering and coachwork it has risen to the challenge of the times with boldness and imagination. With either Bristol or AC engine its cars belong in the rarified class of the connoisseur.

Griff Borgeson

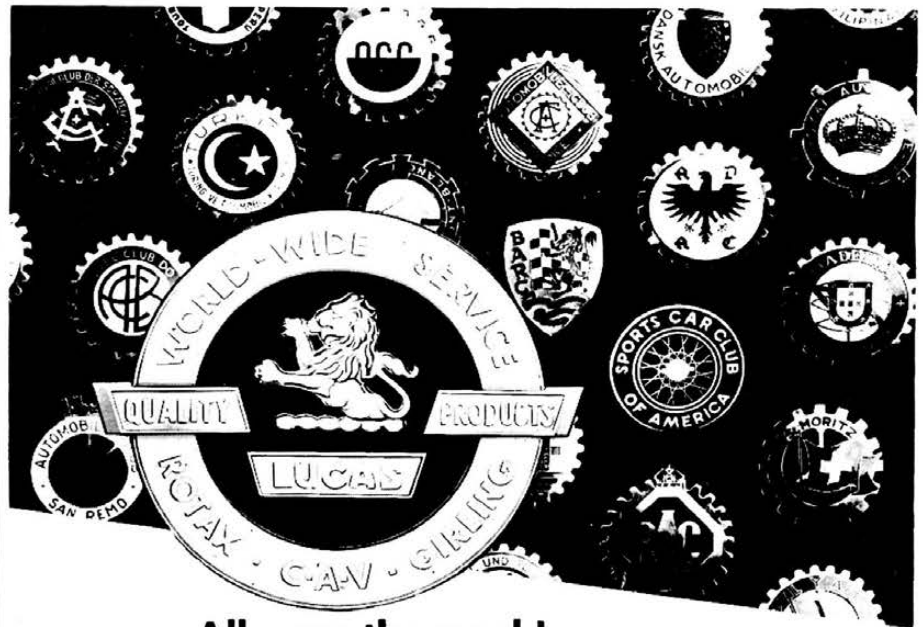
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(Continued from page 31)

you know, the power output of an engine is largely a function of the weight of fuel-air mixture it can burn in a unit of time. Thus any condition that reduces the weight of oxygen per cubic foot of the intake air—like high temperature, low barometric pressure, or moisture in the air—will reduce the output of the engine. Average conditions under the hood of a car at average altitude might be 29.4" Hg. barometer, 4" Hg. water vapor pressure, and 110° F. temperature. This does terrible things to the power rating that's based on "standard" conditions . . . in other words, a drop in effective power averaging between 8 and 9%!

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(Continued on page 58)



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