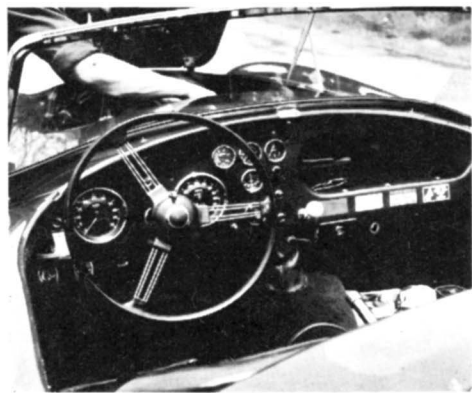
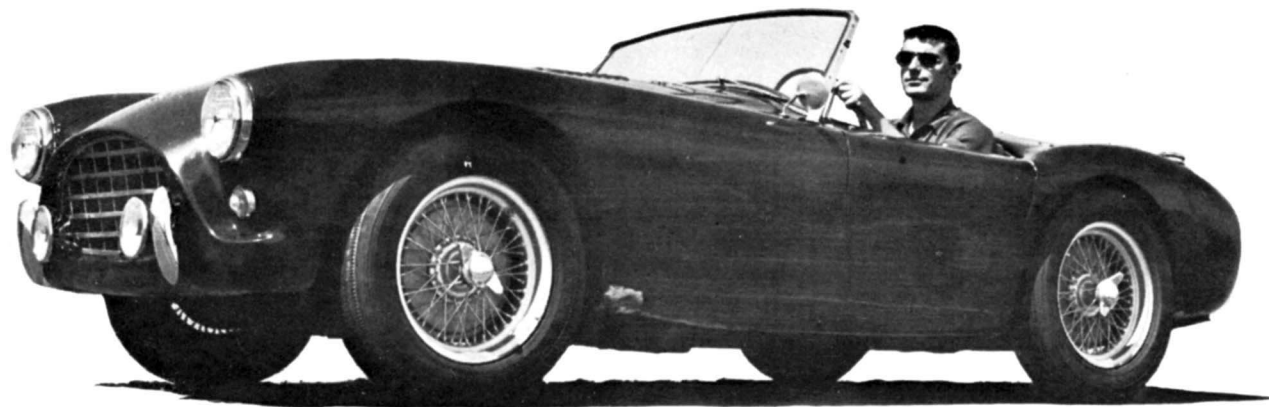


SCI

ROAD TEST:

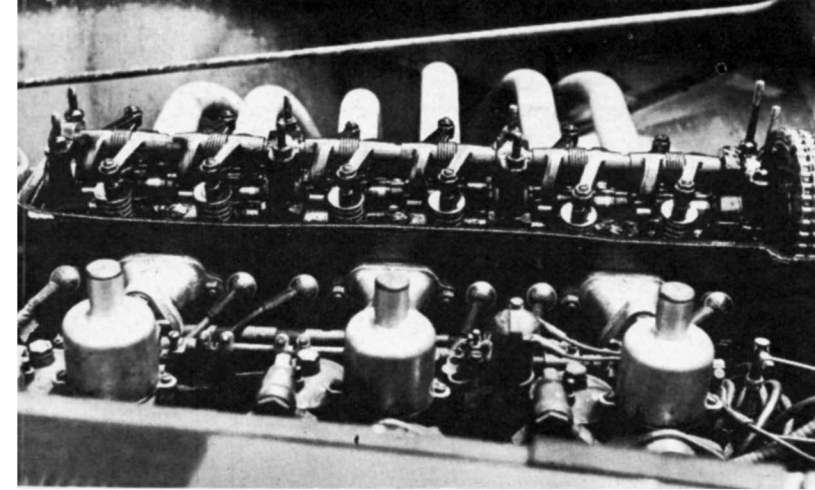
the Reliable **ac** ACE

Matched tach and speedometer of Ace measure full 5 inches across. Placement of other instruments, good leg room, and fine, short gear-shift lever mark AC cockpit.

"It will do anything most 3½-liter cars can, and do it better — up to about 90 mph." So said Ted Amlick, an electronics engineer who bought the first A.C. Ace to reach the Coast, when he turned the car over to SCI for road testing. By this time he had driven the car for six months and almost 14,000 miles, including three races and a couple of rallies. He had pulled the head once, "just to take a look," and had experimented briefly with plugs and carburetion. Aside from this he had just driven the car; it had held its tune perfectly with no attention at all.

Like its companion model, the very Italianesque Aceca coupe, the Ace exudes character. Its coachwork is beautiful; its lightweight construction is admirable; its chassis design and roadholding are notable. Its most memorable traits are imperishable brakes, magnificently fierce cornering power, and the blandness with which the engine expresses its surprising urge.

The Ace is smooth, responsive and cooperative, a machine that's on your side all the way. You slide behind the wheel



Intake side of engine with cam cover removed shows cam drive, and rocker arm layout. Camshaft rides between rocker arms and head. Chain cam drive can be seen at right. Despite .020 valve clearance, top end of engine is quiet.

into the snug embrace of a deeply-contoured, leather-upholstered bucket seat. Foot space for the driver is somewhat congested by the three essential pedals, but there's plenty of leg and knee room. The handbrake is a big, confidence-inspiring length of one-inch steel tubing. The short, thick, cranked gear shift lever stands comfortably at hand on the deep, wide transmission tunnel. There is not a trace of springiness in the shifting mechanism. Travel of the shift lever is at an absolute minimum, and the general character of the gearbox is in the same class of functional excellence as, say, the transmissions usually found on fine Italian high-performance cars.

The engine fires on the first spin of the starter and purrs strongly at a 850 rpm idle. There's no oil-temperature gauge so you wait until the water-temperature gauge indicates 70 Centigrade or so before you start playing any arpeggios on the mechanism. Then you poke First cog into mesh, rev the engine mildly and let out the clutch. You're prepared to sit out the rather long lag that generally occurs when you slam clutch against flywheel in cars of two liters and less. But the Ace's low-speed torque is powerful enough to overcome the car's static inertia almost instantly. In less than four seconds the tach needle is lying at 3500 rpm — tight enough for First — and the exhaust note has risen from a demure rumble at idle to a hard, hammering and healthy staccato rap. During upshifting you can't use swift, hacking movements without grinding the gear teeth. But the A.C.'s synchromesh demands only a split second's hesitation for perfect, positive equalizing of gear speeds.

You wind on out through the gears, accelerating hard in each one and playing a lusty concerto on the two tail pipes over a broad range of tone, pitch and beat. But no matter how hard and fast the exhaust note hammers, the engine seems to be totally relaxed. In spite of its fast idle there's nothing nervous about its sound. The cam followers, held under strong spring pressure against the cam lobes, are so silent you'd never guess that this is an overhead-camshaft rocker-arm engine. There's a *soft* feel to the engine's thrust that is a characteristic of many sixes. Even at the 4500 rpm horsepower peak, it doesn't tighten up or begin to feel as though it's laboring. It just winds happily and freely into the red pie-slice on the tach and on up to 5000 rpm. Amlick on one exuberant occasion during the test popped a down-shift to Third at a shade better than 80 mph. The tach needle lunged far into forbidden territory, but the engine digested the abuse with no strain.

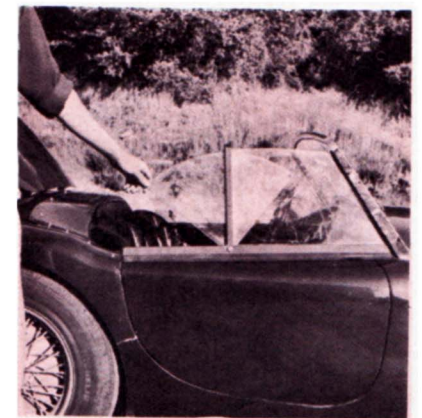
But even though the revs are inclined to go on climbing



Windshield of AC gives ample shelter from front, but at speed there is pronounced buffeting at back of head



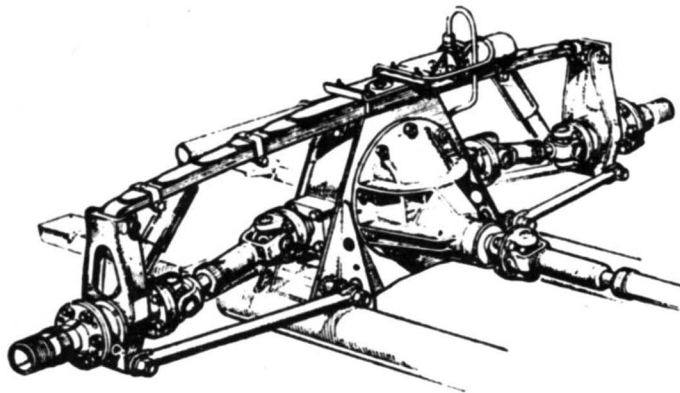
While body and chassis are taken from Tojeiro's competition cars, maker's insist car is not for racing.



Clear plastic side curtains snap into place without fuss. Rear portion pivots conveniently for ventilation.



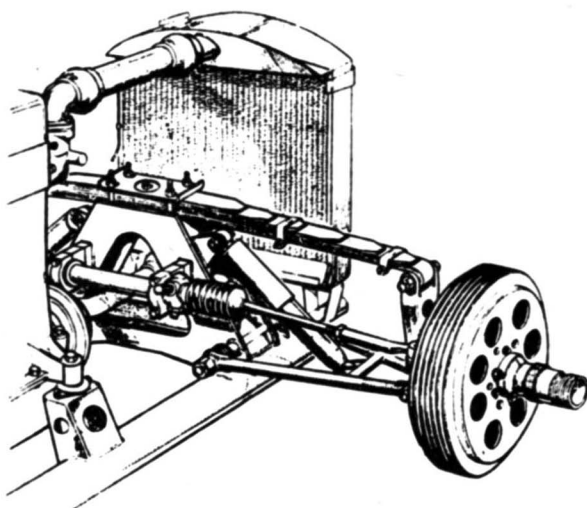
Although Ace is English in origin, it bears the countenance of Italian coachwork.



Final drive and independent rear suspension layout. The fabricated central box supports transverse spring, and houses final drive unit.



At 60 mph through test curve, the Ace leans hard, but remains glued to road. Good proportion of weight on rear wheels, and all around independent suspension makes this one of the best cornering cars tested.



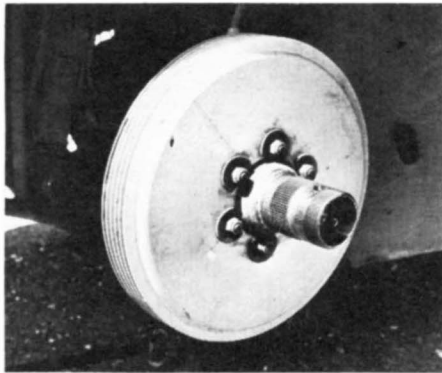
Front suspension is similar to rear. Transverse leaf spring also acts as upper control arm. Steering is rack and pinion.

indefinitely and top gear pulling power is surprisingly strong, you begin to hurt for torque beyond an indicated 90 mph. In this range the torque falls away to a dribble. The camshaft has what can be called a semi-race grind, coming in with mild but quite perceptible force at about 2800 rpm. The car cruises very happily at 90 and will stay with, for example, a '56 Thunderbird on acceleration up to about 75 mph.

If there are any flaws in the design of the A.C. engine, they were worked out a long time ago. It is the oldest British automobile power plant in current production, having been introduced in 1919 as the world's first "light six." In the respect of long, venerable life span, the A.C. is like the American Offenhauser. Each of these engines is an ancient, tremendously sound design that is still in many ways ahead of most mass-production mills. Admittedly the A.C. engine has a stroke that is unfashionably long; but so do some of the best high-performance engines in the world today.

The A.C. engine weighs about 350 lbs. The block and crankcase are a single light-alloy casting using spigoted wet liners. The crankshaft rides on five main bearings, two of which are located at the flywheel end. Between these two main bearings there is a sprocket on the crank which drives the long double-roller chain that drives the overhead cam-

Eleven inch diameter Wellworthy AI-Fin brake drum is deeply ribbed. Splined hub takes Dunlop center-locking wire wheel.



Leaving test bend, the Ace demonstrates its controllable slide which can be induced below 55 mph by using more throttle and deliberately pivoting car on front wheels. Curve-site is SCF's special test bend.

shaft. Chain wear is automatically compensated for by A.C.'s patented spring tensioner, a rather famous invention that has been used under license by many other manufacturers.

The cylinder head is of cast iron and has three intake ports to which three horizontal S.U. carburetors are bolted. There are six exhaust ports on the opposite, right-hand side of the head, and these discharge into a pair of handsomely fabricated three-branch exhaust headers made of 1½ inch steel tubing. Engine accessibility is excellent. The power plant is rubber mounted at four points and is so cool-running that the factory recommends NOT using a fan belt except under extreme heat conditions or in dense traffic. Therefore the fan on our test car was inoperative, and Amlick tells me he has even raced without it.

Although the Ace chassis is taken directly with few modifications from the very successful Tojeiro competition sports cars, the manufacturers make it clear that they do not claim that the Ace is a racing car. In spite of some very satisfactory race performances, they are not about to challenge the two-liter Ferraris. Instead they emphasize the car's versatility and safety, its careful, hand-built execution and its good looks.

This policy is right in line with A.C.'s half-century old traditions. The firm has always specialized in lively, hand-

(Continued on page 53)

A. C. ACE PERFORMANCE

TOP SPEED:

Two-way average 104.3 mph
Fastest one-way run.. 106.1 mph

ACCELERATION:

From zero to	Seconds
30 mph	3.8
40 mph	6.1
50 mph	8.3
60 mph	11.6
70 mph	16.8
80 mph	20.9
90 mph	29.8
100 mph	49.7
Standing ¼ mile....	17.9
Standing mile	50.8 seconds (70.86 mph, average)

SPEED RANGES IN GEARS:

	(Reasonable)
I	zero to 29 mph
II	10 to 50 mph
III	14 to 74 mph
IV	16 to 106 mph

SPEEDOMETER CORRECTION:

Indicated	Actual
30	29
40	39
50	48
60	57
70	67
80	77
90	87
100	97

FUEL CONSUMPTION:

Hard driving during test	22.5 mpg
Average driving (under 60 mph)	27 mpg

BRAKING EFFICIENCY:

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

1st stop	65%
2nd	70
3rd	70
4th	72
5th	70
6th	75
7th	75
8th	82
9th	77
10th	85

Loss of braking efficiency in tenstop test: NIL.

SPECIFICATIONS

POWER UNIT:

Type	6 cyls. in line
Valve arrangement ..	in-line ohv; chain-driven single overhead camshaft
Bore and stroke (Engl. & Met.)	2.56 x 3.94 ins. 65 x 100 mm.
Bore/stroke ratio	1.54 to one
Displacement (Engl. & Met.)	121.6 cu. ins. 1991 cc.
Compression ratio	8.0 to one (nominal)
Carburetion by	three side-draft S.U.'s
Max. bhp @ rpm	90 @ 4500
Max. torque @ rpm..	105 @ 2750
Idle speed	900 rpm

A. C. Ace

(Continued from page 15)

built cars for the sportsman of taste and in a deliberately personal relationship between manufacturer and client. This, in England, has resulted in a following that is loyal to the point of near-fanaticism. A.C. fans tend to be insistent about the preservation of the status quo. Thus the pre-Ace A.C. chassis was one of the very last in the world to use such heavy devices as a solid front axle and half-elliptic springs all around. The fans *liked* it that way. However, when A.C. finally decided to make a chassis change, they switched not to just the currently accepted but to the highly advanced.

CHASSIS

The new chassis is one of the very few made in England that has four-wheel independent suspension. It consists of two longitudinal steel tubes of three-inch diameter, spaced just far enough to cradle the engine, which is mounted well aft of the front hubs. These main tubes are welded at front and rear to sheet steel boxes. The suspension A-arms are anchored at the bottom of each box just above the frame tube and a transverse leaf spring is bolted to the top of each box. The rear box is a busy one indeed; it also serves as part of the final drive housing, and from it emanate the double U-jointed rear axle shafts. Steeply inclined tubular shock absorbers are used at front and rear. At the rear they are mounted at the bottom on the hub shaft carriers, and at the top on a sort of vertical outrigger of 3/4-inch tubing which is welded to the main frame tubes. The front shocks are anchored to the lower A-arms and to the suspension box, just under the leaf spring. The steering gearbox also is mounted on this suspension box. The brakes are 11-inch Girling hydraulics, with two leading shoes at front, light alloy backing plates and Al-Fin bonded aluminum drums.

This, then, is the chassis: simple, original and strong, with great emphasis on light weight and excellent road behavior. Main support for the Ace's aluminum body is an outline of the body's cross-section at the cowl line, made of 1 1/2-inch tubing and welded to the main tubes. The rear "outrigger" mentioned above provides support for the rear of the body. The complete car has an advertised dry weight of 1685 lbs.

WEIGHT DISTRIBUTION

Our test car weighed exactly 1900 lbs. with a full fuel tank and a few tools and instruments. Its designer succeeded in getting a healthy proportion of the car's weight on its rear wheels—in the case of our machine, 55.4 percent unloaded and 57.5 percent as tested, with 310 lbs. of driver and recorder aboard.

With this weight distribution, with its novel chassis layout and its all-around independent suspension, the Ace turned out to be one of the best-cornering cars we've ever tested. This was true not only on smoothly paved surfaces but on brutally rough ones and wet ones as well. The limits of the car's four-wheel bite are unusually high, and beyond them you enter a range where the rear end slides in a very controllable and useful manner. In our tight test curve this slide began to make itself felt at about 55 mph, but it could be induced earlier by using more throttle and deliberately pivoting the car on its front wheels. The A.C. is not remotely as prone to slip its rear tires as, for example, the Porsche, but like the Porsche, its rear end can be steered by the throttle alone if you elect to do it that way. If you want to reduce the slip angle you back off on the throttle; to increase it you use more throttle. It corners like nothing less than a very fine racing machine.

STEERING

The Ace's steering is right up to connoisseur standards of quickness, positive action and safety. Its brakes are excellent beyond praise. Our standard test for braking efficiency and fade tells the story. In ten successive crash stops just short of locking the wheels, there was a 15 percent *gain* in efficiency, rather than the nearly-inevitable loss. Owner Amlick, who has experienced no brake fade in all the racing he's done, had told me to expect this, but it was hard to believe. He also pointed out that these brakes are, to the best of his knowledge, totally waterproof. In the torrential tropical rains that occasionally flood the streets of Los Angeles, he says, these remarkable brakes have never been affected by water.

Not so the car's all-weather equipment. Its attractive top is quite snug all around except at the concavities just inboard of each rear fender. Here water falling on the rear deck is channeled neatly into the passenger compartment through wide gaps between top and body panels. Actually, Amlick could have corrected this defect at a cost of a dollar or two, and probably would have if rain weren't such an infrequent occurrence in the arid southwest.

ACE'S WEATHER SEALING

Erecting the top is no quick, simple operation. When not in use, top, bows and sidescreens are stowed in a special bag in the luggage space — which is, incidentally, roomier than you might think. When you want to put the top up you unzipper the bag, haul out the metal bows and install them, then take out the top fabric and fling it over the bows. Attachment to the top of the windshield is, fortunately, neat and quick. Then you snap the back of the top onto a large number of studs on the rear deck, and eventually it's on.

BODY AND FRAME

I have one major criticism to make of the Ace. It definitely lacks an all-of-one-piece feel. You are very much aware that the body and chassis are two distinct elements, each moving and vibrating — at times independently of one another. This, of course, is the price you pay for ultra-light construction. Even with the light aluminum body, the car probably would have a much more solid feel if the main frame structure were approximately as wide as the body instead of being a pair of narrow rails from which a few tubes extend to support the body. This is a subjective criticism, a matter of taste that actually has nothing to do with the way the car gets its job done. But the body and steering column *are* responsive to chassis vibration, meaning that a certain amount of body noise and rattle must be accepted with this efficiently designed light sports car. That's the wiry breed of animal it is:

There is nothing at all harsh about the Ace's ride. In spite of the 32 pounds of air carried all around during our shakedown cruise, the four-wheel independent suspension coped beautifully with washboard and foully-rutted surfaces. Its fuel consumption, for a high-performance car that wants to be driven hard, is good: 22.5 mpg during the hardest possible tests of acceleration, top speed, and mountain climbing; 27 mpg maintaining good open road averages; 30 mpg plus if you want to stroke for it.

Owner Amlick has proved that the vigorous Ace is a completely versatile machine. It's his only car and he parks it in the open every night of the year. He commutes to work in it, makes all his cross-country trips in it, races it as often as he can. He has the good judgment to leave it alone as long as it runs well, and it continues to do this as the thousands of miles pile up on the odometer. It's a happy machine to live with, 100 percent cooperative and safe, steady and controllable under all conditions.

— G.B.