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Today, Yesterday, and Tomorrow


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COVER: Sid Hornan discovered his Dixi DA-1 under a haystack, not realizing it was a significant early BMW.

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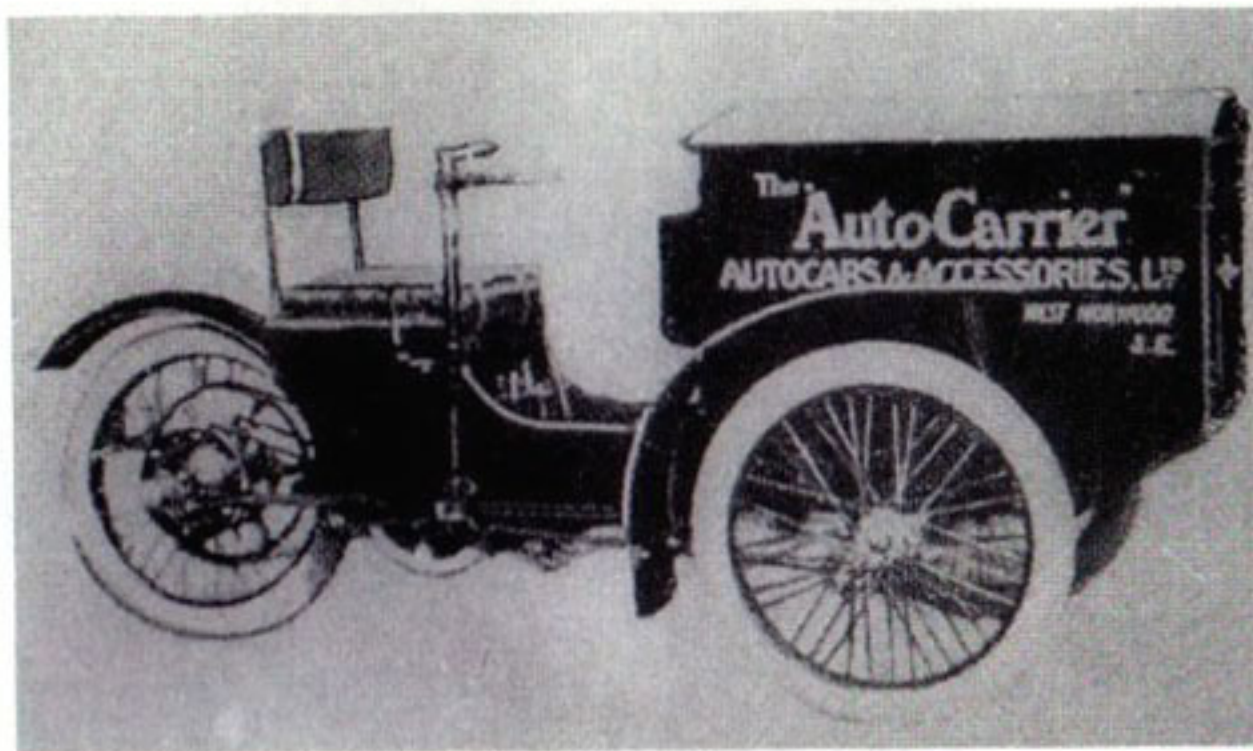
ITALIAN BODY, AMERICAN HEART, AND BRITISH SOUL

AC428

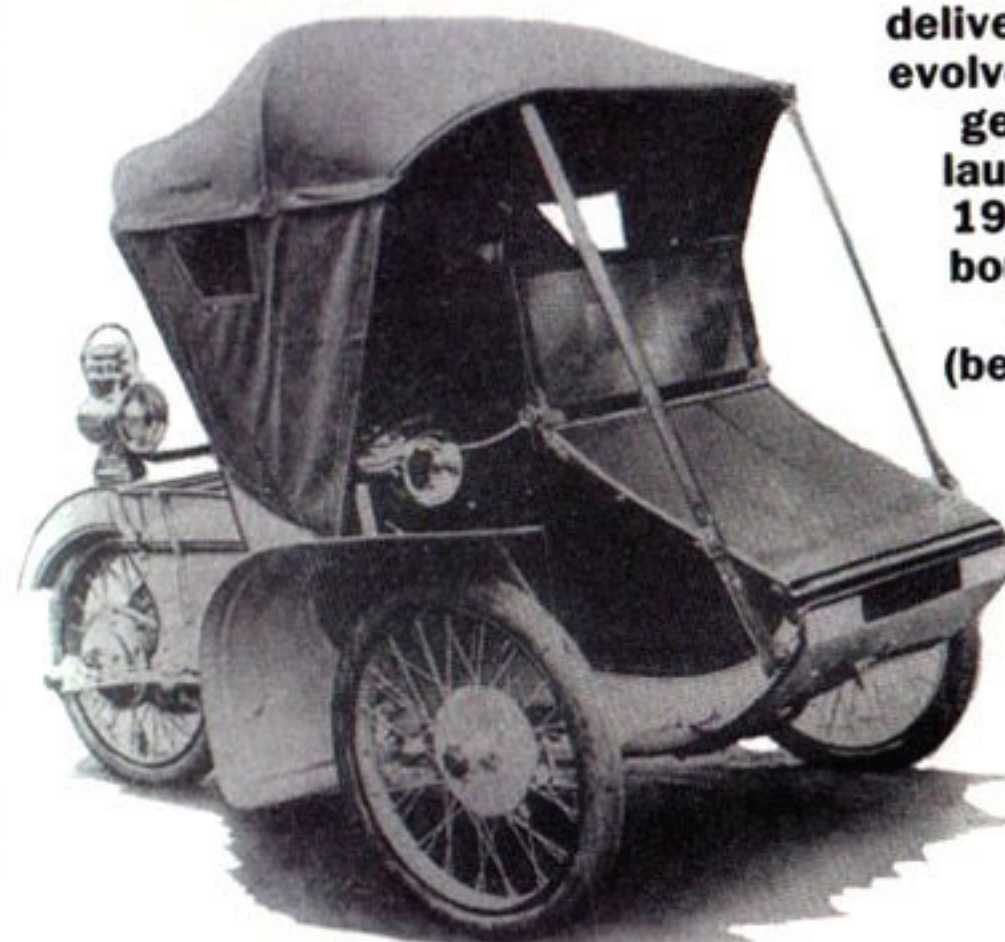


Cobra, Mangusta, hai, Mistral—all exotic names for exotic cars that stir the imagination. But they were also players in a drama that involved the cream of the Italian carrozzeria, the giant Ford Motor Company, Maserati, and tiny A.C. Cars of England, which commissioned the modern AC428 as a successor to the aging Cobra.

BY JOHN A. HEILIG • COLOR PHOTOGRAPHY BY NEILL BRUCE



The 1901 Auto Carrier delivery tricycle (above), evolved into the passenger version (left) that launched A.C. Cars. In 1930 William Hurlock bought A.C. Cars with his brother Charles (below with a bearded Stirling Moss in 1962). William's son, Derek (at right below) ran the company after the death of his father and uncle, producing a line of sports and GT cars.



UNLIKELY COMBINATIONS

A.C. Cars came into existence in 1901 when engineer John Weller decided to build a motorized delivery tricycle for his friend John Portwine, who owned a chain of grocery stores (see *AQ*, vol. 25, no. 4). Portwine apparently liked the idea and financed production of the "Auto Carrier" as it was called (later abbreviated to AC). By 1920 an AC was the first 1½-liter car to cover 100 miles in an hour at Brooklands and a year later the firm was one of the biggest car companies in England. In 1922 Weller and Portwine left the auto business to concentrate on groceries, and retired race driver and Napier promoter Selwyn Francis Edge (see *AQ*, vol. 28, no. 1) bought the company, bringing the marque more fame and glory.

After the company suffered in the Depression, brothers Charles and William Hurlock purchased A.C. Cars in 1930. According to present A.C. Cars managing director Brian Angliss, the Hurlocks built A.C. Cars into a "full time, serious and substantial small volume specialist and revered British car manufacturer."

The company was making a good profit under the Hurlocks, aided by successful non-automotive ventures. For example, it was making three-wheel invalid carriages and electric wheelchairs for the Ministry of Health, (which Angliss calls "an almost embarrassingly lucrative contract"), and golf club carriers.

But A.C. Cars' main business was building automobiles. The company manufactured its own straight six engine for

many years and installed it in the AC Ace, a car based on a 1953 design by John Tojeiro. For more power, A.C. eventually selected the two-liter Bristol engine (see *Coda*), and after its demise, the 2.6-liter Ford Zephyr unit.

In 1961, Carroll Shelby entered the picture and wedded the Ace to a Ford 221cid V8 engine to create the Cobra (see *AQ* vol. 10, no. 1, and vol. 25, no. 4) shortly after Bristol stopped supplying engines to A.C. Cars. Angliss explained the arrangement:

A.C. Cars built all the Cobras in England under contract with Shelby American. Each car was constructed at Thames Ditton and individually numbered. Without A.C. Cars there would never have been a Cobra—without Carroll Shelby there would never have been a Cobra. It was a good joint Anglo-American effort.

But despite extensive revision, after four years the AC chassis was showing its age, especially under the strain of a 475hp big block V8, and Ford wanted a more dramatic body to clothe its sports car. Angliss adds:

By 1965, Ford was elbowing Carroll out of the Cobra, causing considerable bitterness which exists to this day. Ford bought the Cobra name and trademark from Shelby American and stopped A.C. Cars from using it on home market sales. Although Shelby, Ford, and A.C. Cars continued to work together, increasing interference from Ford caused further friction with Shelby.

THE ITALIAN CONNECTION

In 1965 the Turin Auto Show witnessed the introduction of a totally new Shelby/Ford effort; the Ghia Cobra, an aerodynamic two-seater built on a 7-liter rolling Cobra chassis supplied by A.C. Cars. But as it turned out, Ford was deeply involved in its GT 40 LeMans racing effort at the time (see *AQ* vol. 5, no. 2) and didn't pursue the project. Ghia president Alejandro De Tomaso was not pleased with this turn of events and decided to go Ford one better. Designer Giorgio Giugiaro was asked to create a new rear-engined sports car: it would be called *Mangusta*, Italian for "mongoose," the deadly enemy of the cobra.

Although the Ghia Cobra never reached production, A.C. Cars itself, not the Shelby/Ford interests, chose Ghia graduate Pietro Frua to body a similar Cobra-based vehicle on an extended chassis.

"The Cobra was not really selling very well and the contract with Shelby had dried up," Angliss said. "Derek Hurlock [A.C. president] thought to build a two-seater that was more sophisticated."

Frua was chosen to design the car and built the bodies on the extended Cobra Mk 3 chassis after an introduction by Hubert Patthey, the Swiss A.C. agent and former Ace-Bristol LeMans driver.

Ford and A.C. Cars engineers had designed a coil-spring suspension system for the Cobra. The revised chassis could better handle the huge loads generated by the racing 427cid engines and simultaneously offered sufficient suspension travel for a luxury car. Also, the coil spring rates could be changed, making it possible to develop a more civilized grand touring car.

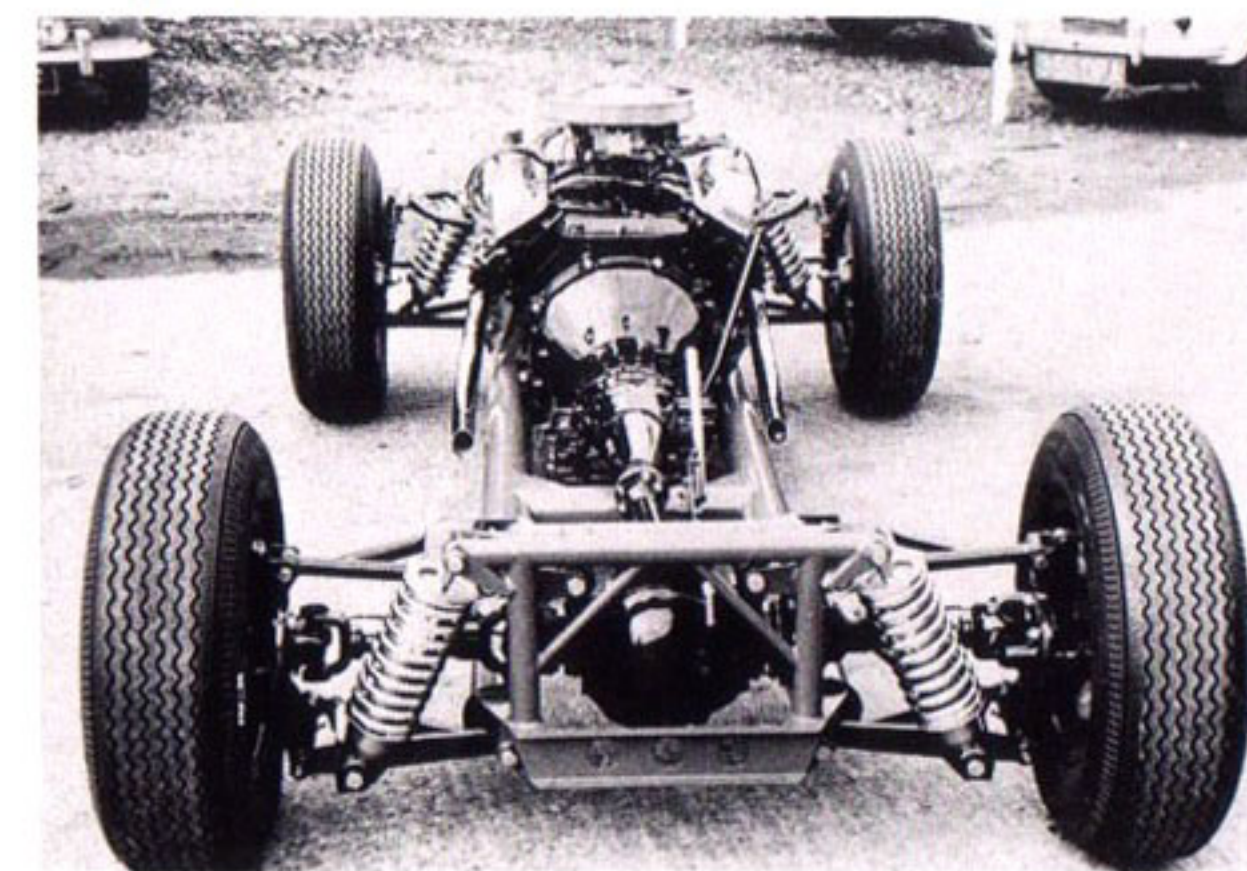
A.C. assembled the chassis in the same Thames Ditton factory that had attracted the Hurlock brothers in 1930, loaded it on a truck and drove it to the Frua factory in Italy. With the carrozzeria's experience in developing the similarly-styled Maserati Mistral, Monteverdi 375 High Speed, and Glas 1300GT, a steel-bodied convertible was built. It was then loaded back on a truck and returned to Thames Ditton for the fitting of the mechanicals and trim.

"Frua was also building the Maserati Mistral at the time," Angliss said. "That car is very very similar to the AC428. I believe that even the bumper bars and windshield are interchangeable."

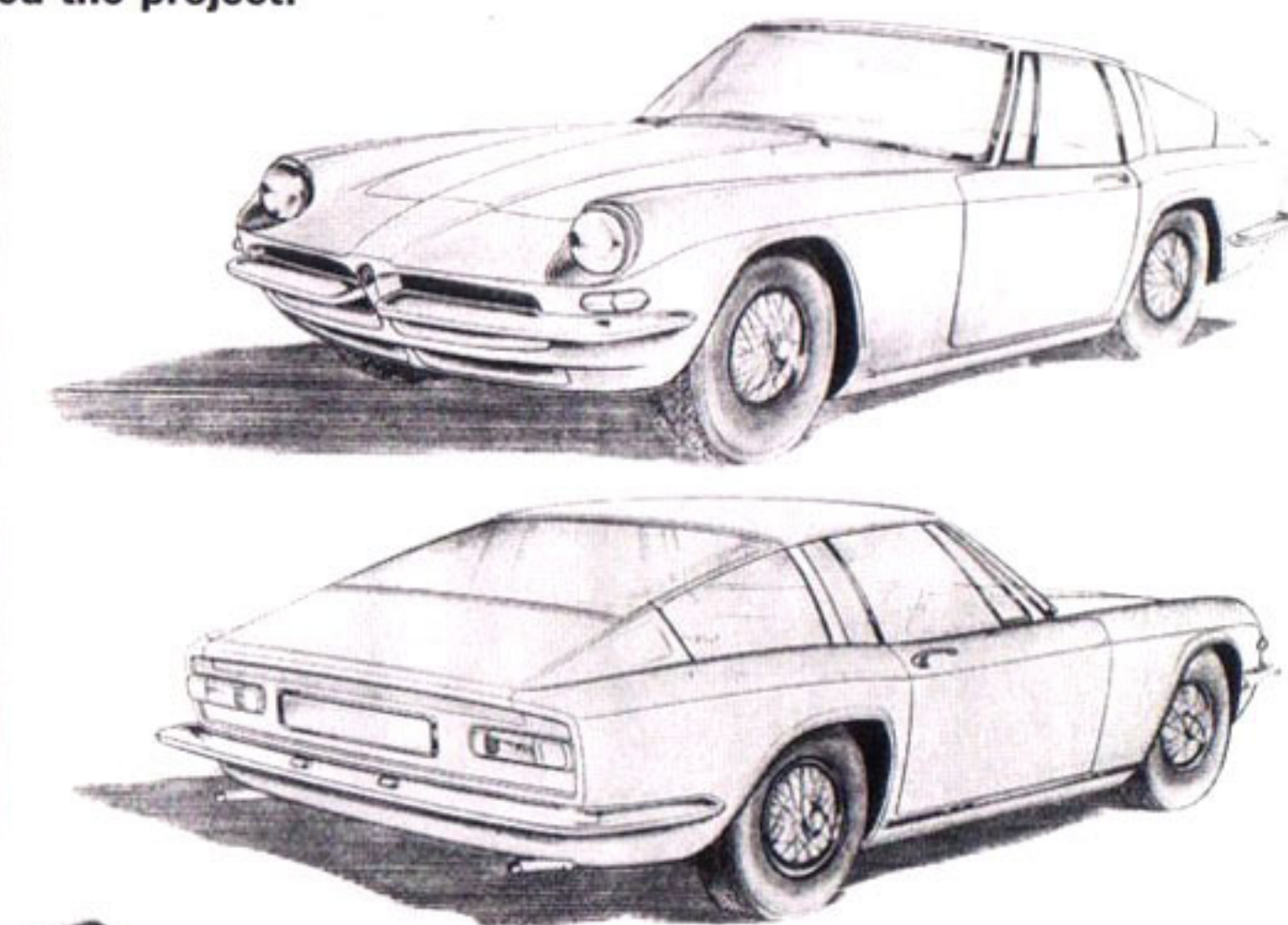
According to AC Owners Club Frua Registrar Andy Shepherd, a number of small panels were welded together to form the production bodies, indicating the primitive state of the manufacturing process in the Frua factory. Frua built a wooden body buck on which panels were beaten to fit.



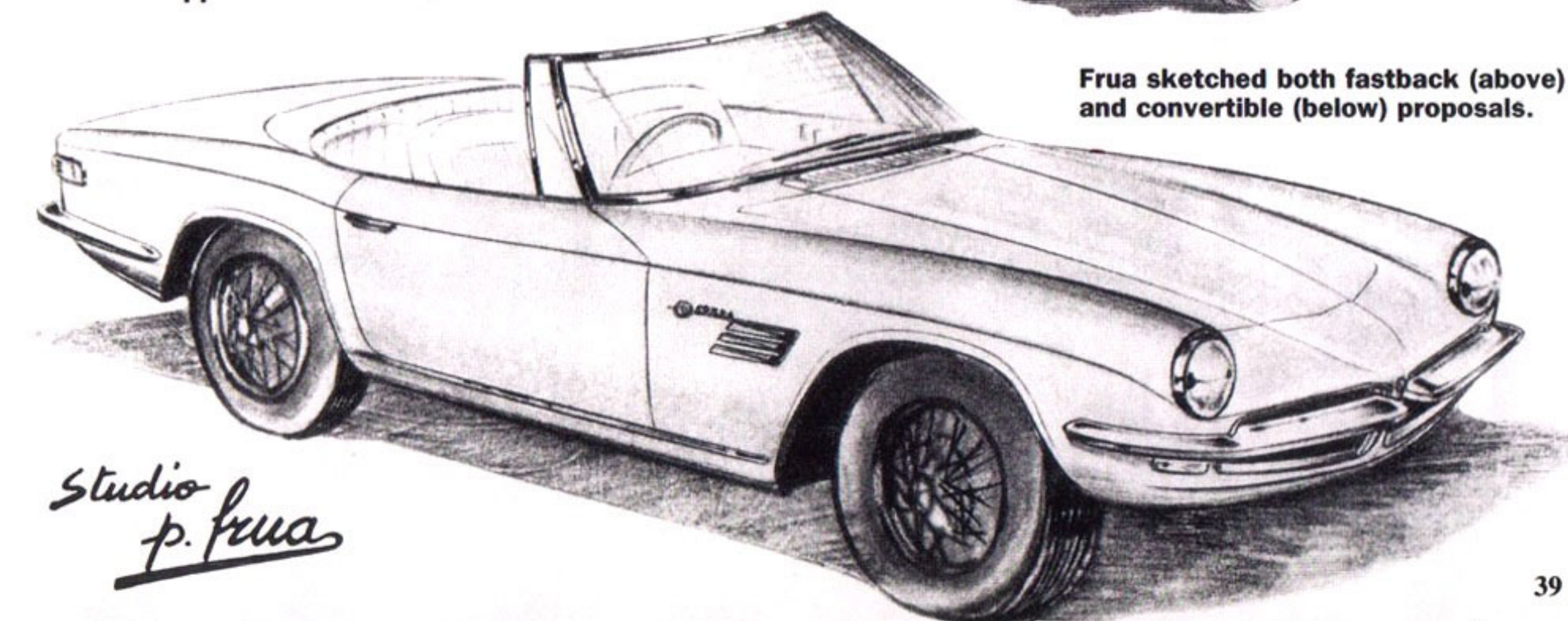
Despite the grace of the Ghia Cobra (above), Ford dropped the project.



A.C. Cars supplied a Cobra chassis to Frua.



Frua sketched both fastback (above) and convertible (below) proposals.



Derek Hurlock chose Pietro Frua (above) to design a GT body for the new AC.





ROADSTER AND FASTBACK

The AC427 convertible was introduced at the Earls Court show in October 1965, but development had begun a year or two earlier.

By mid-1966, the AC428 was available to the public. The change in numbers reflected more than just one cubic inch, but a total engine change—from the hairy-chested 427 wedge-head unit rated at 475hp to the milder 428 Police Interceptor engine used in the massive Ford Galaxie. According to Angliss, the primary reason for the engine change was to comply with American emission regulations. A year later the AC428 fastback coupe was unveiled at Earls Court, promising performance in the 150mph range.

On the prototype, the all-steel body was welded to the tube chassis and fitted with aluminum doors and hood. Production AC428s used all-steel bodies with the aluminum hood and doors optional. A detachable metal tonneau panel to hide the folded soft top was also dropped when the production version was developed. During the transition from prototype to production, and from 427 to 428, side vents were added in an unsuccessful attempt to reduce the amount of hot air delivered into the cockpit.

BY THE NUMBERS

The overall length of the AC428 stretches to 177.5 inches on a 96-inch wheelbase. The fastback is 67.6 inches wide, stands 50 inches high and has ground clearance of six inches. It tips the scales at 3025 pounds, and despite its front engine location, 53 percent of that weight rests on the rear wheels.

The AC428's overhead valve seven-liter engine uses hydraulic lifters. With a bore of 4.13 inches and a stroke of 3.98 inches, it displaces, as the name implies, 428 cubic inches (7014 cc). With a 10.5:1 compression ratio the engine develops 345hp at 4600 rpm, giving the big GT a minuscule 8.8 pounds per horsepower (49.2 horsepower per liter). Torque is rated at 462 pound-feet at 2800 rpm, allowing the AC428 to achieve high road speeds at low engine revolutions. When new, AC428s were fitted with Ford Autolite four barrel carburetors, but enterprising owners frequently exchanged the stock carbs for high throughput Holleys.

While the four-speed manual gearbox and final drive ratio of 2.88:1 were standard, a Ford C6 three-speed police automatic transmission was optional after it was discovered that the clutch action of the big engine was too heavy for AC's intended market. Early versions were shod



Opposite: 1971 AC428 fastback, owned by A.C. Cars Ltd. Above: 1973 AC428 convertible prototype, owned by Derek Hurlock.



Andy Shepherd shows off his AC428 at the Hurlock family's Thames Ditton Manor House.

with relatively narrow 205-series tires mounted on six-inch wide, 15-inch, 72-spoke center-lock wire wheels; seven-inch wheels were later used and alloy wheels were optional. After testing several brands of tires, Hurlock selected Avons.

Handling benefits from the redesigned all-independent suspension. Wishbones and coil springs are employed front and rear, with trailing lower radius arms added in back. Original AC428s came equipped with large diameter narrow wooden steering wheels (later changed to fatter leather-covered wheels) that took 3.3 turns from lock-to-lock on the rack and pinion steering box. Four wheel disc brakes stop the AC428, with 11.75-inch diameter discs up front, and 10.5-inch diameters in the rear.

The first three cars built were convertibles while the fourth was the prototype for the fastback coupe. It had two comfortable front seats, two nominal seats in the back, and an enormous amount of luggage space under the hatch.

According to AC historian John McLellan, the fastback "exhibited typical Mk III torque-off rear-end-induced weave." A.C. Cars corrected the problem by changing the shock absorber rates and adopting large rubber bushings after car number 23.

On car number 30, ventilation was improved, and a U-shaped automatic transmission selector handle was introduced 14 cars later. A newly-designed interior and dashboard were also included from No. 49 on.

In 1968, a purchaser could pick up an AC428 convertible for \$9016 at the factory, and the fastback for \$9762. Twenty years later, Andy Shepherd bought his first 428 for "about £20,000 (\$30,000)."

CRITICAL ACCLAIM

In 1987 *Classic and Sportscar* said that "Frua's body for the AC428 . . . is rightly regarded as one of the most beautiful and finely-designed ever worn by a sports car."

When the AC428 was first introduced, *Autocar* lamented that the engine lacked the panache of overhead cams or multiple carburetors, but praised the car's ability to "waft along at three-figure speeds on just a whiff of throttle." *Motor* achieved a 139 mph top speed with 0-60 mph times of 5.9 seconds. The standing-quarter mile was covered in 14.4 seconds at 97 mph. Fuel economy was in

the 17 mpg (Imperial, 14 mpg US) range. *Autosport's* testers were quicker on the throttle, lowering the 0-60 times to 5.4 seconds and the quarter-mile to 13.8 seconds, while raising the top speed to 145 mph. John Bolster, writing in *Autosport*, said:

The AC 428 is an immensely potent car which has road holding to match its performance. It has Italian good looks but there is nothing racy or flashy about it.

It seems a long time since I was able to go all starry-eyed over a British car . . . It is therefore all the more delightful to give unreserved praise to the AC428. The car comes out of one of Britain's oldest factories and closely follows traditional AC design.

Car's reviewer noted "You can tell the hand of an expert stylist, though, even if the car does look like the Maserati and Glas from the same design studio."

The main complaints about the car concerned overheating, both of the oil and passengers. With development, both problems were eased but never fully corrected.

Surviving AC428 examples tend to reveal Frua's lack of rust-prevention techniques, and they still overheat. John McLellan says "some, but not all, 428s overheat both oil and water, particularly if driven at more than 120mph for long distances." One owner cited by McLellan claims the AC428 is "built of Italian washing-machine steel and rusts continually everywhere you can't see, six inches beneath the skin."

END OF THE LINE

Unfortunately, A.C.'s luck just wasn't right. Frua found itself locked in labor disputes and could only supply bodies sporadically. Between 1967 and 1973, only 51 fastbacks and 29 convertibles left Thames Ditton. Historian David Burgess-Wise attributes some of the AC428's lackluster sales to the Cobra's image being more one of brute strength than elegance, and the AC428's inability to shed that image. Meanwhile, Frua was simply unable to supply enough bodies even though A.C. Cars had the orders on hand.

"Although (Frua) was a talented designer," Hurlock told *Classic and Sportscar*, "he wasn't so good at getting cars into production, particularly for us, as we had limited amounts of money but still had to rely on him."

Then came the 1973 Middle East crisis with large increases in fuel prices at the same time the Ford engine contract was due to expire. A.C. decided to end its venture

with big-engined GT cars. There was talk of a possible four-seat sedan from Frua on the AC428 chassis but it never materialized, although a prototype was built in 1971.

McLellan said he felt the demise of the AC428 was caused in part by a lack of energy on the part of A.C. "Derek Hurlock was getting tired," McLellan said in 1991, "and had no heir interested in taking over the company. His son wasn't interested in the business and his daughter went off and got married."

Another stillborn project was a second-generation AC428 convertible with pop-up headlights. Hurlock commissioned Frua to build the single example in 1973. Besides the revised headlight treatment, the front and rear ends were modified and made more aerodynamic than on the original AC428.

A.C. TODAY

In 1973 Peter Bohanna and Robin Staples showed up on A.C.'s doorstep. They had built a prototype car and they wanted A.C. assistant sales manager Keith Judd to take a look at it. Judd and Hurlock did take a look and decided it might be just the car to replace the AC428, which was near the end of its production. In October of that year the AC3000ME (with a Ford three-liter engine in a mid-engined chassis) appeared on the AC stand at the Earl's Court Motor Show. Production began in June 1974, but it did little to revive the flagging automotive end of the business. About 68 cars were sold before Kirby Hogarth, a Scottish company, bought the rights to AC3000ME production in 1984. Assembly of the AC3000ME was moved to the firm's facilities in Glasgow (unsuccessfully) for two years, during which just 30 additional cars were constructed.

According to Angliss, "ME3000 development costs were horrendous which, together with operating a company employing several hundred persons, presented a continuous drain on A.C. Cars' financial resources. Records show that, even in production, the ME3000 cost more to produce than its sale price."

In March 1986 Angliss and Autokraft bought A.C. Cars and ended production of the 3000ME. Since 1984 Autokraft has manufactured the Mark IV, featuring an improved 427 Cobra body with an injected 5-liter Ford engine in an updated Mark III Cobra chassis. The cars are built using the original tooling and body bucks. "Even at that time [1986]," Angliss adds, "A.C. Cars was not in serious financial trouble. They still owned the A.C. factory, although they have since moved to 20th Century buildings. And, to this day, the Hurlock family owns substantial residential property and land in England." Meanwhile, Hur-

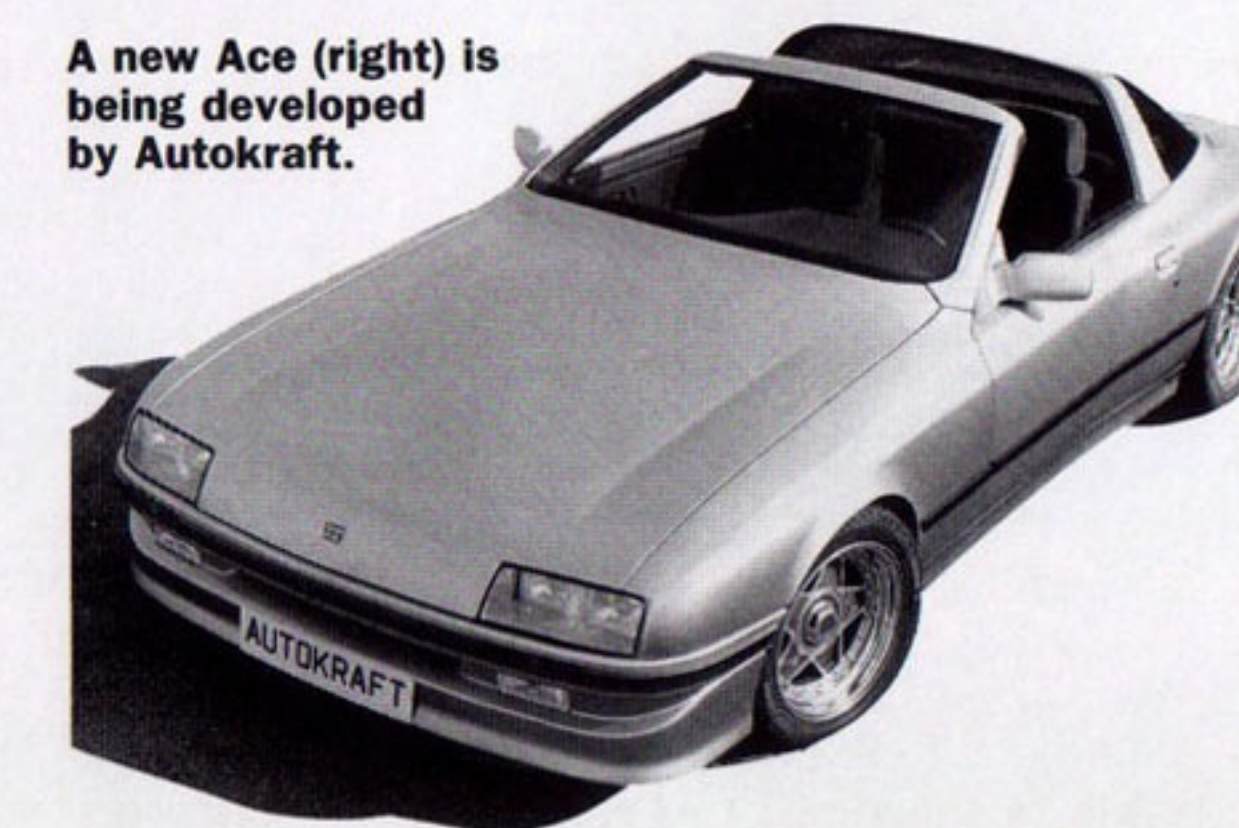


Brian Angliss (above) ended production of the 3000ME (left) after buying A.C.

lock, whom Angliss characterizes as "a typical English gentleman," semi-retired to a farm in Chittingfold.

"I had been very friendly with A.C. Cars for a long time and I realized it was getting smaller," Angliss added of his decision to buy the firm. "I wanted to insure that another British car company didn't die. There was a tremendous amount of heritage. There had only been three owners of A.C. Cars since 1901."

A new Ace (right) is being developed by Autokraft.

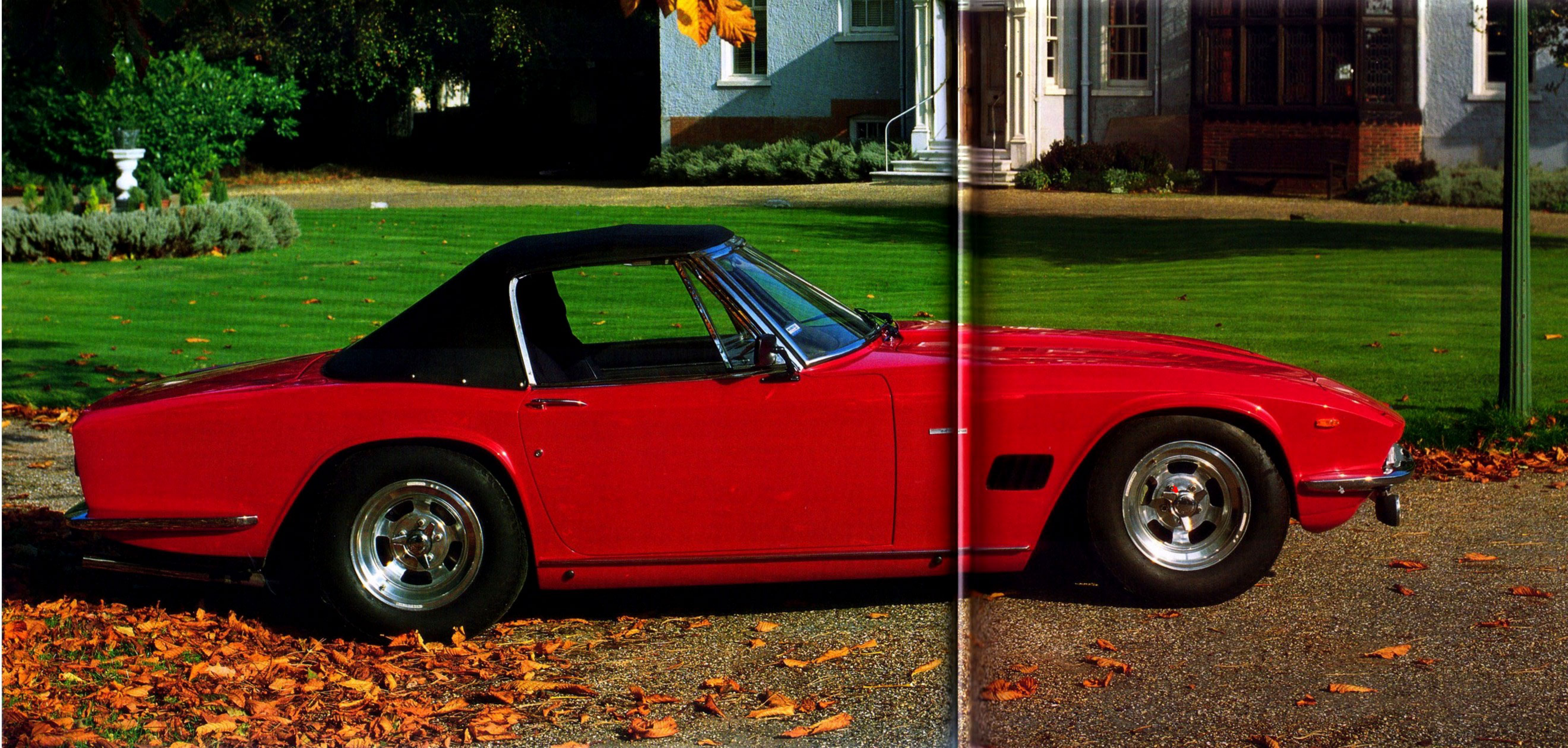


LOOKING TO THE FUTURE

A "new Ace" was developed by Autokraft (see *AQ*, vol. 25, no. 4), and a prototype was shown to the public in October 1986. It was powered by a Ford of England 2.9-liter Granada V6 and featured four-wheel drive.

In 1987 Ford bought out the stockholders who shared ownership of A.C. with Angliss, gaining a 50.96 percent share of the company. Ford undertook development of the Ace, developing a 220bhp two-liter Cosworth four-cylinder engine to replace the original V6 and bringing in its Dunton design studio and International Automotive Design to work on the body.

But in May 1990, just weeks after it cancelled the Jaguar F-type, Ford announced cancellation of the Ace and applied for liquidation of the company in the High Court. Angliss said he believes Ford of Europe, which originally wanted 75 percent of the company, simply wants to "tread all over a small British car company" and let A.C. Cars die. As of press time in early 1991, the case is still in the British courts, which, according to Angliss, have indicated



In 1973, Derek Hurlock commissioned a new AC428 from Frua (left), with more aerodynamic pop-up headlights (above). The design never reached production and the AC428 was replaced by the AC3000ME in 1974.

they are leaning toward preserving British heritage in the face of a large American company.

For now, A.C. Cars is still alive and working out of the modern Autokraft factory in Byfleet, remanufacturing parts for AC, Cobra, Ace, and 428 cars on the original Ace and Cobra equipment, and offering support to AC enthusiasts. According to Angliss, the new Ace is still in development, but, considering his opinions of Ford of Europe, he doesn't know what engine will be used.

Once again, A.C. Cars faces an uncertain future. It prospered in the Twenties when S.F. Edge added his promotional genius to an existing automobile company; it recovered in the Thirties when the Hurlocks bought the company after the Depression; it prospered in the Sixties when Carroll Shelby appeared after Bristol stopped supplying engines for the Ace; it staged a small comeback in the Seventies when Frua designed a beautiful body for the Mark III Cobra chassis; and it found a car for the Eighties in the AC3000ME when AC428 sales sputtered. Its car for the Nineties, the "new Ace," faces uncertainty in its use of powerplant as the company struggles for existence against Ford's attempts to liquidate it.

A.C. Cars has shown an amazing ability to come back from its ventures to the edge of uncertainty. If the past and managing director Brian Angliss are any indication, A.C. will once again return from the edge. ☼