

AC Cobra: Legend

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INTRODUCTION

In the one hundred plus years of the automobile, relatively few examples have become accepted as being more than a method of transport, a vehicle greater than the sum of its parts. One such automobile is the Shelby AC Cobra, which has come to symbolise the very essence of what a sports car should be.

The Cobra was the product of a three-way speculative venture between AC Cars Ltd, the Ford Motor Company and Carroll Shelby. That the car ever saw the light of day was a testament to the powers of persuasion and sheer bloody-minded determination displayed by Shelby, a ruthless will to win still evident forty-five years later. For AC it proved to be the car that established the reputation of the company and for Ford, it was the best \$25,000 it ever invested.

Part of the mystique of the Cobra can be traced back to the day it arrived on the scene in 1962 when, in terms of raw performance, it blew the opposition away. The combination of a powerful lightweight V8 engine in a compact aluminium-bodied roadster set new parameters for sports cars. In the USA, the previously unassailable Chevrolet Corvette was left floundering in its wake as the hybrid Anglo-American upstart stole the headlines. AC Cars worked flat out to meet the demand from Shelby American, but eventually it was able to market the car as the AC Cobra in the UK where it stole the thunder of the Jaguar E-type that had previously established the benchmark for high performance motoring.

However, it was never Shelby's intention to produce a sophisticated sports car since the Cobra was merely the means to an end; he wanted to go racing at a time when Ford decided to raise its previously staid profile and attract a younger audience (while AC was happy to stay in the car building business and make a profit). In the USA the car to beat at the tracks was the Corvette but in Europe, the all-conquering Ferrari would prove a harder nut to crack. Carroll Shelby had built a reputation as a world-class sports car driver, even taking victory at Le Mans, but when ill health forced him into retirement, he decided to pursue his dream of building his own car. Unlike countless others who shared the same ambition, Shelby never once considered failure as an option and the lack of any finance, suitable car or a factory was never a problem. He set about making the impossible happen.

The story of how the Shelby AC Cobra came into being is an unlikely tale that hardly anyone would dare to invent and, with the passage of time, the legend has been manipulated, massaged and modified as required. To this day, nobody has repeated the feat and it's doubtful anyone ever will. Even by the standards of the early 1960s, the Cobra was hardly a modern piece of design, being considered outdated in terms of engineering and driver comfort. The nature of motor sport was changing fast and the Cobra soon outlived its usefulness. Shelby had other more urgent issues to

address and within a matter of a few years, the Cobra was unceremoniously consigned to history and few mourned as the final version left the AC factory in 1968. But the car had one final trick up its sleeve – it came back from the dead. In the 1970s a new generation of sports car enthusiasts found that rising prices kept the rare original cars out of reach while the fame of the awesome 7-litre Cobra continued to grow.

It was the expansion of the kit car market and the ability to make an affordable fibreglass moulding of the iconic body shape that re-launched numerous variations on the Cobra theme. Naturally these comparatively cheap look-alikes could never replace the genuine article, but if nothing else the kit car market proved that the demand for a Cobra still existed. Eventually both Shelby and AC Cars decided to protect their heritage by launching their own versions of the Cobra, but instead of pursuing a policy of co-operation, disputes arose and the only people who profited from the situation were the lawyers. The three-way dispute between Shelby, AC and the replica fraternity produced more twists and turns than any soap opera, and some even less likely plot lines, as everyone fought for a share of a specific market for an outdated sports car that every enthusiast wanted, but nobody really needed.

Thus the story continues to this day, led as ever by the inimitable Carroll Shelby, who regularly throws his hat into the ring and makes his presence felt. In 2012, cars that carry the Cobra name, or replicate the shape in one form or another, will almost certainly be rolling out onto the increasingly congested highways of the world as the car celebrates its fiftieth anniversary, proving that you can't keep a true icon down.

Chapter One

THE CAR THAT BECAME A COBRA

That a car called a Cobra would have become a reality is beyond doubt since Carroll Shelby had decided it would happen; the only issue was what it would look like and who would build it for him. As the fates decreed, the car that gave up its former identity was the AC Ace.

The company that produced the Ace was AC Cars Ltd., a small engineering company based in the quiet Surrey village of Thames Ditton where motorists passed through en route to London or to visit the famous palace of Hampton Court, a proverbial stones throw from the factory. AC could trace its roots back to the early days of the twentieth century when a company called Autocars & Accessories began to build a small, motorised tricycle for commercial use; the AutoCarrier. This rear-wheel machine utilised a small box located above the front axle that proved a practical delivery vehicle for local tradesmen. Financed by a local butcher, John Portwine, and developed by a skilled jobbing engineer, John Weller, this unlikely creation proved a great success. The first record of such a vehicle was dated 1904 and by 1907, the box had been replaced by a passenger seat to create the Sociable. In order to distance the Sociable from its mundane predecessor, the company name was changed to AC and during 1911 the company relocated from Norwood to the quiet village of Thames Ditton in Surrey.

Just prior to the First World War, the first four-wheeled vehicle was produced and this became the sole product after 1918. The 1920s proved a busy time for AC Cars, notable for the introduction of an excellent Weller-designed 2-litre lightweight six-cylinder engine that remained in production for the next forty years. By 1922, the company had passed into the ownership of a redoubtable businessman and self-publicist, Selwyn Edge. He was responsible for the decision to promote the

company and its products by establishing numerous speed and distance records, which were all the rage at the time. An AC became the first automobile to travel in excess of 100 miles (160kms) in one hour and a company director single-handedly established a new speed record for 24 hours of motoring at over 82mph (106kph). However, this frenzy of activity and publicity did little to make the company profitable and by the end of the decade, AC, along with many other companies, found itself in financial difficulties. Edge had put a substantial amount of his own money into AC Cars to keep it afloat but the product was becoming outdated as AC chose to delay the introduction of four-wheel brakes and continued using an outdated three-speed gearbox located in the rear axle. The company response was too little, too late; during the first months of 1930, AC was put up for auction.

By rights that should have been the final act of AC Cars Ltd, just one of a long line of promising companies that attempted to establish itself in the precarious world of automobile production but left nothing other than a few cars and a small footnote in history. However, fate was to lend a sympathetic hand when the remnants of the company were resurrected from the ashes. Nobody wanted to purchase a failed manufacturing business but what AC left behind was large factory that proved an ideal location for part of a large commercial vehicle business owned by two brothers, Charles and William Hurlock. Since the AC Cars no longer had any inherent value, the receivers were pleased to sell off the premises plus whatever was left inside. When the brothers arrived to inspect the factory they discovered they had acquired a considerable amount of car parts and half-built vehicles.

In the months that followed, owners of AC automobiles made contact to enquire whether spare parts and serving facilities were still available (the service department had been kept open by the receivers with a reduced staff). Even though the Hurlocks had no intention of reviving car production, most of the requisite parts were available to complete the unfinished cars. Before long, the possibility of reviving car production, without becoming involved in considerable expense, became feasible. The market for commercial vehicles that had made their fortune in the 1920s was in decline by the early 1930s, so the construction of a few cars could provide extra income. In the event, William Hurlock became quite enthusiastic and under his guidance the company developed a comprehensive range of AC automobiles that served the company well until the advent of hostilities in 1939. The previous policy of taking part in competitive motor sport was replaced by one of assisting private entrants as much as possible in order to capitalise on any success they achieved.

The question of just what kind of automobile would be required to take AC into the next decade was put firmly on hold in 1938 as the large Thames Ditton factory turned its attention to producing numerous items for the war effort. Once under the control of the War Office, AC was told what it could produce and car production came to a halt. In common with all other engineering companies, the factory was put on a double shift system and remained in operation twenty-four hours a day. One of the numerous contracts awarded was the construction of the somewhat antiquated, but still effective biplane, the Fairey Swordfish, a torpedo bomber that acquitted itself with some distinction.

Following the conflict, AC returned to the issue of car production. The difficult years between 1939 and 1945 had proved beneficial in terms of expansion, experience and the opportunity to be granted future government contracts. AC was permitted to resume automobile production to meet a growing demand, since many vehicles had been damaged or destroyed during the war. William Hurlocks' son, Derek, had joined the company in 1936 only to depart for service in the Royal Navy. He returned to Thames Ditton to find a heated exchange of views taking place between the chief engineer, E. H. Sidney, and his uncle regarding what kind of car to construct. Eventually it was decided to retain a pre-war chassis and the reliable 2-litre six-cylinder engine allied to a large and somewhat old-fashioned saloon body. The AC Two-Litre was hardly the last word in refinement but

it proved a better prospect on the road that its austere looks suggested. The Hurlocks were also impressed by the new and innovative 'bubble-cars' that were being produced in Germany by companies such as Messerschmitt and the idea was adapted to produce the three-wheel AC Petite for motorists on a budget. Since raw materials were hard to obtain in the early 1950s, the basic car sold in modest numbers until the Suez crisis of 1956 when the prospect of a serious fuel shortage resulted in a huge demand for the Petite. In 1952, faced with modest sales of the AC Two-Litre, it was clear that AC required another car that could be put into production in a very short space of time in order to avoid the inevitable demise of car production and the associated loss of skilled and irreplaceable staff.

Following the end of the war, motor sport gradually regrouped despite being hampered by a lack of fuel and suitable cars but the one thing that the conflict did leave in its wake was a number of redundant airfields with long straights and perimeter roads that proved the ideal location for a spot of competitive driving. In due course this led to the appearance of a number of innovative engineers, such as John Cooper and Colin Chapman, who created lightweight sports cars to meet the demand of sporting motorists. Many of these were one-man cottage industries and one of the most notable was John Tojeiro who had observed the style of suspension and chassis made by Cooper and adapted these to his own requirements. His 'specials' used a twin parallel-rail chassis united via a fabricated steel box that carried the suspension at the front and the drive assembly at the rear. This could be adapted to accommodate a wide range of engines and was relatively rigid with good handling characteristics. At the front and rear, transverse leaf-spring suspension allied to independent lower wishbones produced a highly adaptable and adjustable set-up. One of the Tojeiro specials was raced with notable success by Cliff Davis, a car dealer and determined weekend race driver, during 1952. For 1953, he requested a car with a little more power, so a new chassis was built that used a 2-litre Bristol engine and a handmade body that rather unashamedly echoed that of the current Ferrari Barchetta, albeit none the worse for that. Registered LOY500, the lightweight car and Cliff Davis' forceful driving proved an almost invincible combination.

Via a combination of circumstances and contacts, word of the Tojeiro reached the management at AC Cars where its chief engineer had been strongly recommending the rapid introduction of a sporting automobile as a method of salvation. The cost of building a large saloon was proving untenable at a time when there was a growing demand for smaller, economical sports cars. John Tojeiro was invited to demonstrate his car to the Hurlocks and they wasted little time in striking a deal, making a modest down-payment and a royalty of £50 on each car sold. By working around the clock, there was just sufficient time to modify the car and unveil it at the 1953 London Motor Show. The new car revived the pre-war name of Ace and took the assembled press by surprise. AC had worked wonders with the car, replacing the unattractive cast-alloy wheels with polished wire wheels that showed off the Alfin brakes, trimming the cockpit with leather and carpet, all set off with a glossy paint job. Alongside the Ace was a bare chassis with a basic AC 2-litre engine installed, polished and painted to gleam under the Earls Court lights. With the assembled journalists expecting only a few dull saloons to adorn the stand, the reception given to the Ace transformed the reputation and image of AC Cars literally overnight. It is doubtful that any car company, before or since, has undergone such a radical change of image in such a short space of time.

The work of turning the prototype Ace into a production car began in earnest. AC's designer, Alan Turner, skilfully redrew the basic shape to enable the location of the headlights to meet international legislation and, at the rear, enlarged the capacity of the boot. Inside, the dashboard was fully equipped with the requisite instruments, the steering column made adjustable and full weather equipment added. If the prototype impressed with its elegant simplicity, the production Ace improved matters considerably. By the expedient of subtly reshaping the bodywork, the design

became altogether more cohesive; the press beat a path to AC's door in the hope of being the first to drive the exciting new roadster. It was John Bolster who proved the most insistent and was granted the honour of the first test drive, his enthusiastic response setting the Ace on the path to success. In the first year of production, AC produced sixty examples of which approximately half were shipped overseas, the majority going to the USA. Despite the relatively high cost of producing the hand-built Ace, it was one of the more affordable cars that could genuinely achieve a top speed in excess of 100mph. (The Ace cost approximately fifty per cent more than the comparable Morgan Plus Four which retailed at a pre-tax price of £830 during the mid-1950s). From the very beginning, AC regarded its new sports model as a road car rather than a sports-racer, while a small but significant number of customers saw things differently and were eager to try out their new purchase on the race-track and in European rallies. The modest 85bhp produced by the now-venerable AC six-cylinder engine meant the Ace had trouble keeping up with the opposition, the majority of which used the excellent Bristol 2-litre unit that gave 105bhp in standard form and could easily be tuned to produce considerably more. The AC unit could produce a maximum of 105bhp, albeit to the detriment of numerous components, while the Bristol engine in race tune could produce a reliable 130+bhp.

It was success in competition that established the sporting credentials of the Ace on both sides of the Atlantic. Despite being generally outclassed by Bristol-powered opposition, the Ace and its venerable engine proved to be reliable, as demonstrated at the Sebring 12-Hour race in Florida in 1956 where an AC importer drove a near-standard Ace to finish the gruelling event in fourth place in class, a remarkable result for a car powered by an engine that had been designed by John Weller some thirty-seven years earlier.

In the UK, it was the AC dealer for south-east England, Ken Rudd, who committed a great deal of time and money to develop the Ace for competition, even though he knew the six-cylinder engine was long past its prime. This was a situation that also caused concern amongst the AC management and both he and Derek Hurlock did all they could to promote the idea of approaching the Bristol Motor Company in the hope of acquiring its 2-litre engine. Assuming a deal could be agreed with Bristol, it was a matter of concern that the Ace would become even more expensive as a result; the relatively cheap AC engine had long since paid off its development costs. Fortunately, the Bristol management proved well disposed to AC and were happy to help once both parties had agreed a price that AC could afford.

Thus the Ace acquired the Bristol engine that once powered the Tojeiro prototype and early in 1956 Ken Rudd drove a development Ace-Bristol to victory at Goodwood in a production sports car race. By the time the new model was officially launched at the 1956 London Motor Show, the price had increased by £240 but the superior performance, allied to a beautifully engineered Bristol close-ratio gearbox, did not disappoint. The Ace had found its ideal power source and as if to confirm the fact it totally dominated its class in the nationwide Sports-Car Club of America (SCCA) championships between 1957 and 1961. Ken Rudd helped secure overall victory for the Ace in 1956 Autosport Championship which no doubt helped in his request for an Ace to be prepared at the factory to compete in the 1957 Le Mans 24-Hour endurance race. At the time, AC had made little, if any, profit from the model, so Rudd's request for a factory-backed car fell on deaf ears; he had no option but to buy an ex-demonstrator from the factory and pay for the modifications himself.

The 1957 'Le Mans' Ace saw the introduction of numerous features that would reappear in one form or another on the Cobra in 1962: a revised nose that incorporated an egg-crate grill mounted within an oval front intake, front disc brakes, large slatted air intakes in the front wings to remove hot air from the engine bay and another long air intake on the bonnet which appeared on a handful

of early race Cobras before being replaced by a shorter version. A large fuel tank was installed in the boot, a side-exiting exhaust was fitted, along with a cut-down aeroscreen and the car was ready for the race of its life. In the true spirit of the time, and to save transport costs, it was driven to the French circuit (and home again afterwards). Aware that the prizes only went to cars that were still running at the end, Rudd elected to play it safe and kept to a conservative pace that would not break the car whilst being aware that mechanical failure would not be well received in Thames Ditton. His approach paid dividends as the opposition raced into the distance only to drop out as various parts broke while the Ace crossed the line without mishap, coming home a creditable tenth overall and second in class.

For the 1958 event, the factory was inspired to produce a special-bodied streamlined 'prototype' Ace. Surprisingly, this offered little improvement over a standard Swiss-entered road car and it struggled around the Le Mans Sarthe circuit in the pouring rain to finish in eighth place with the Swiss Ace in ninth. The average speed of the prototype was a disappointing 85mph. It transpired that the car had suffered weld failures in the chassis that gave out completely during the drive home. A rule change for 1959 meant the prototype Ace was no longer eligible so Ken Rudd was once again left to uphold the honour of the marque. The lack of a suitable Ace did not deter him so he persuaded a trusting client to lend him their road car "just for the weekend". The brave owner, Mrs. Waugh, lived not far from Rudd's showroom in Worthing and used her 1956-model Ace regularly for shopping trips. It has to stand forever as a testament to Ken Rudd's powers of persuasion, but she agreed to the modifications needed to take part; the windscreen was removed, extra lights added, the radiator partly blanked off and larger wheels and tyres fitted. Naturally it was driven to the circuit where it faced considerable opposition in its class from various factory supported Ferraris, Porsches, Triumphs, MGs and Lotus. Undeterred by the relative lack of outright performance the Ace circulated like clockwork for the full twenty-four hours to come home first in class. The opposition self-destructed, many as a result of the oppressive heat, others from lack of preparation or, in the case of an MG, hitting a dog. Mrs. Waugh was in attendance to keep an eye on her prized car and she helped drive it home via the AC showroom in Paris where much champagne was drunk. The Ace was reunited with its windscreen (but kept its side exhaust and side louvers) and resumed its shopping duties. Different times, sadly missed.

Such tales are included here to help underline the fact that the Ace was a well-made, reliable sports car long before it surrendered its identity to the altogether more brutish hotrod, the Cobra. Contrary to certain myths that were spread to help cement the legend of the Cobra, the Ace was a well-developed automobile and AC was a profitable engineering concern, even if the 'car' department rarely made a profit. The reputation of its automobiles gave the company much needed publicity and an aura of quality. (The engineering side of the business produced a huge array of items including rolling stock for the railways, golf trolleys and trailers). AC Cars needed to expand its range and created a rather ungainly prototype four-seat saloon before eventually launching the Greyhound, a two-door four-seat saloon.

The Greyhound showed potential but found only a handful buyers due to a lack of development. More successful was the Aceca, built in response to customer requests for a hardtop version of the Ace. When experiments with fibreglass hardtops proved unsatisfactory, AC re-engineered the whole car to produce the Aceca, a coupe variation of the Ace. Behind the scenes, one of AC's chief engineers had been working for some time on the development of a flat-four boxer engine as a replacement for the venerable AC unit. Early prototypes were installed in various chassis but an inherent design problem saw the project cancelled for lack of further funds. With the production of the Ace, Aceca, Greyhound and engine development projects, the Thames Ditton factory was a hive of activity as the 1950s drew to a close.

The cloud on the AC horizon was the news that the Bristol engine was about to be discontinued within a few years. A suitable replacement was required urgently but almost all efforts to find a suitable engine came to naught, including an approach to Jaguar-Daimler regarding the supply of its six-cylinder engine or the V8 that was installed in the quirky Daimler Dart sports car. Daimler felt unable to assist, but as ever, Ken Rudd found a solution in the 2.6-litre Ford Zephyr six-cylinder engine. The Ford engine may have been unsophisticated, but out of necessity it was solidly built and reliable. Charles Hurlock did not care one bit for such an engine to be installed in any AC, but he had little option. It was Ken Rudd who made the most of the Ford unit, advertising his successful Ruddspeed Ace models that could be ordered in five different stages of tune, from 90bhp to 170bhp. Since the Ford engine did not have its carburettors mounted on top of the engine, its reduced height in the engine bay permitted AC's chief designer, Alan Turner, to revise and lower the line of the bonnet which in turn permitted a longer, more elegant front end with a smaller oval intake. It was this design, with added wheel arch flares, that became the Cobra.

As 1960 dawned, AC found itself in a dilemma; the Ace could be supplied with a Bristol, AC or Ford engine, the latter being acceptable as a short-term solution, but the model was badly in need of modernisation since, with the development of ever more powerful engines, the Ace would have to be completely re-engineered. (In the USA, a few Aces had received transplanted V8 engines that produced considerably more power and torque that often resulted in a twisted chassis). Due to the hand-built nature of the Ace, its high cost put it out of reach of many potential owners. Likewise, the Aceca also looked its age and the Greyhound required further development to fulfil its potential. At the time, it was common practice for manufacturers (other than Morgan) to launch brand new models on a regular basis; AC was in danger of being left behind.

Chapter 2

CARROLL SHELBY VISITS THAMES DITTON

In 1961, AC Cars faced an uncertain future as its modest range of expensive, handmade cars was beginning to show its age. Simply keeping pace with its opposition was clearly going to require substantial investment, but to add to its problems the popular 2-litre Bristol engine was about to go out of production. The search for an alternative power source was a priority but AC was fast running out of options. Unknown to AC, in the USA the Ford Motor Company was in the process of modernising its range of unexciting cars and the new models would use entirely new engines. This was a time of change and innovation as Ford introduced an innovative method of casting engine blocks called thin-wall casting in order to reduce weight. A new 3.6-litre, 221 cubic inch V8 engine had been created within just six months that was more compact and lighter than the previous hefty V8 blocks but, more importantly, had huge potential for further development and tuning. A major decision had also been taken to change the customer perception of Ford from one that built dull cars for middle-class families to one that appealed directly to the increasingly important and affluent youth market.

After 1945, America found itself rich, awash with billions of dollars in war bonds, huge production facilities, no war damage and barely any market competition. It was by far the richest nation on earth, with five per cent of the world population (Americans) being wealthier than the other ninety-five per cent combined. Ford and General Motors, each richer than most European countries, churned out automobiles by the million and the consumers brought everything they built; by the mid-1950s the two-car household was commonplace. Almost 47,000 miles of Interstate highway

was constructed and car ownership rose from sixty-five thousand in 1945 to over five million by 1949. Americans went to the movies, ate meals, visited the bank and carried out numerous chores without leaving their car. The population grew by around fifty million between 1940 and 1960 and the majority of those young people were wealthier than any comparable generation. The demand for cars seemed unlimited and Ford wanted the lions share of the market, even if it meant ignoring an agreement that had recently been made between the major automotive corporations not to go racing; nothing ever stood in the way of business.

At the same time, in 1960, a 37-year old Texan race driver by the name of Carroll Shelby was forced to retire from top-line motor sport due to a congenital heart condition. He was one of a handful of American drivers who achieved success in both the USA and Europe, culminating with victory in the 1959 Le Mans 24-Hour race at the wheel of an Aston Martin. Although he came to motor sport relatively late in life, at the age of 29, he proved to have a natural talent. Before that he had turned his hand to a number of professions without any notable success, the last of which was chicken farming which might have made his fortune had his second flock not been wiped out by disease and made him bankrupt. (Thus the world was spared the 'Colonel Shelby' fried chicken empire). At the time, a friend invited him to try his hand at sports car racing where his ability was quickly recognised by a wealthy private entrant and. Shelby was soon being paid for his services, much to his delight. Within two years he turned professional at a time when the first national SCCA races were begin organised. This allowed him to demonstrate his talent around the USA where he regularly drove a Cadillac-engined Allard. He travelled the continent, racing a wide range of cars from every major manufacturer, including the occasional single-seater, but big powerful sports cars were his speciality.

Before long he signed a contract to drive for the Aston Martin team whose manager, John Wyer, introduced him to the world of motor sport in Europe. He now competed against the best drivers in the world such as Fangio, Moss and Hawthorn, which led to invitations to drive for the top teams in the USA. This allowed him to study the performance of the very best American and European cars which sowed the seed of an idea that one day he might be able to build his own race car to incorporate the best of both worlds, harnessing American horsepower with a lightweight European chassis. As he travelled around the world he met influential people and made contacts while making a reasonable living in the process. By 1957 he had earned enough to be able to open a sports car dealership in Texas, in partnership with Dick Hall, whose brother Jim went on to design the hugely influential Chaparral sports cars.

In 1959, Shelby gained international fame when he won the Le Mans 24-Hours at the wheel of an Aston Martin, but the turning point in Shelby's life arrived in 1960 when he won the USAC drivers championship, but only with the help of medication. A potentially serious heart condition was diagnosed that forced his retirement at the end of the year. In February 1960 he parted from his wife, sold his share of the car dealership and moved to California where he forged an alliance with Goodyear to supply race tyres for the western half of the USA. Part of his reason for moving west was to take advantage of the pool of talent that had created the growing hot-rod culture; if he was ever to build his dream sports car, he would need skilled engineers and the best had gravitated to California. His enforced retirement allowed him the time to revive his sports car plan but in the meantime he became a distributor for Champion spark plugs and opened a racing school at Riverside where he employed Peter Brock to assist with the training programme

Shelby had already been in discussion with numerous companies in his effort to create his dream car. He approached John Wyer in the vain hope that he could have some influence at Aston Martin, and had also been turned down by Donald Healey who found the idea of a V8-powered Austin

Healey 3000 not to his liking. During 1959, Shelby might have thought his dream was about to be realised when he teamed up with a Texan oil millionaire to help construct a special version of the Chevrolet Corvette. Via Shelby's close links with senior GM executive Ed Cole, he acquired three Corvettes from the production line, complete other than the bodies, and shipped them to Italy where they were clothed with a stretched version of the current Ferrari Touring aluminium bodywork at the Scaglietti works in Modena. The project came to nothing when his financial backer lost interest and General Motors blocked the supply of further chassis. In the event, it was just as well that the Corvette production team decided not to share its beloved sports car since the elderly senior management at General Motors decreed that its no-racing policy would be rigorously enforced, effectively blocking the route to Shelby's ultimate goal (all Corvette race teams were run by private entrants and any alleged factory assistance came strictly via the back door).

A phone call from a journalist friend alerted Shelby to the news that AC Cars was about to lose the Bristol engine. He knew of the capabilities of the AC Ace as it had dominated its class in SCCA racing and, even better, it was built on a tubular chassis that he had planned for his car (which he had long ago decided would be called 'Cobra'). In September 1961, Charles Hurlock received a letter from Carroll Shelby asking whether AC might care to co-operate in the production of a new sports car. Finally his suggestion arrived at the right place at the right time. Even if the Ace was not Shelby's first choice, it had a race-proven pedigree and was hand made by craftsmen in aluminium, although Shelby considered fibreglass to be more practical. AC was prepared to co-operate assuming Shelby could source a suitable V8 engine; the prime contenders were Chevrolet or an aluminium Buick engine.

It was during the following month that news of the new lightweight Ford V8 reached Shelby who quickly penned a letter to Dave Evans, a Ford executive he had met earlier that year. Evans proved receptive to the idea and made an immediate decision to send Shelby a couple of engines to see what he could achieve. One arrived at Shelby's base at Dean Moon's workshop in Santa Fe Springs where they stripped the engine to discover what kind of modifications could be made to extract a bit more power. Another arrived at AC Cars where the unsuspecting manager of the stores department wondered why on earth he had received a consignment from Japan; the legend 'FoMoCo' stamped onto the crates was clearly oriental in origin. It was soon confirmed that the V8 would fit comfortably into the engine bay of the Ace with few modifications. (The technical drawings created within AC's drawing office bore the title '3.6 Ace' and the cars were recorded within the chassis register as 'AC Ace Cobra' until the end of the production run of small-block cars in October 1964.) Within a matter of weeks, Shelby received another call from Dave Evans asking if he might be interested in another engine Ford had just built – a 4.2-litre, 260 cubic inch version.

It was now that Carroll Shelby had to perform a minor miracle by bringing together the two strands that would turn his dream into reality. Since he lacked any financial backing he requested credit terms from both Ford and AC. Charles Hurlock could see the potential and Ford was happy to play along just to see what might happen once it had assessed the prototype. As Shelby stated in his book 'The Cobra Story' published in 1965, the Hurlocks were "certainly not hurting for cash" (a comment he would later revise). AC was indeed profitable despite the car production side of the business having its share of problems, but the company could afford to bear the cost of producing the first few cars, reassured by the promise of substantial orders once Shelby opened his production facility. No doubt Charles Hurlock was delighted that he could dispense with the Zephyr engine he disliked so much. The Ford-powered Ace was built in conjunction with Ken Rudd who was responsible for modifying the engines via his Ruddspeed business but once the Shelby contract had been signed, he was invited to lunch at the factory where Charles Hurlock took great delight in tearing up his contract in front of him.

With its bridges comprehensively burned, AC sided with the unproven combination of Shelby and Ford of Dearborn. No doubt there were days when the Hurlocks regretted that decision as the comfortable pace of production at AC changed even though the early Cobra, little more than a lightly modified Ace, required no new skills to produce. Time was now of the essence as work on the prototype Cobra took precedence while a rudimentary production line was created to build cars within a reduced time frame. However, AC had an experienced workforce and some talented engineers who wasted no time in making necessary modifications and installing an engine into the first car, chassis CSX2000, before Shelby gave it a few shakedown laps at Silverstone. The engine was removed prior to shipment to Dean Moon's shop where the Cobra received a mildly tuned V8 and within a matter of hours, was blasting around the dirt tracks at the back of the workshop. Roadholding and handling clearly required further development but most importantly it was quick!

The success or failure of his dream project now relied on the goodwill of Ford and thanks to a mixture of salesmanship and considerable luck, Shelby succeeded where countless others had failed. The man he had to convince was Don Frey who, unusually for someone in the industry, was a car enthusiast. He had been charged with making the racing project happen by spending the least amount of money for the most effective result. He decided he could spare a few engines in order to get Ford-powered sports cars onto the race-track in return for some publicity in the motoring press. It is fair to say that nobody at Ford ever expected anything from the insignificant Cobra programme; at the time few people within Ford had ever heard of Carroll Shelby or the Le Mans 24-Hours, or that motor sport even existed outside America. Frey later joked that he gave Shelby the money he needed just to get him out of his office and even checked that he still had his wallet once he'd left. He also realised that, as determined as Shelby was, he had no experience of running a company; if Ford pumped dollars into the project, the chances were that they not be channelled in the right direction. It fell to a young financial analyst, Ray Geddes, to help establish Shelby American Incorporated and to open channels of communication between Ford and AC Cars, arranging terms to pay AC for the first run of Cobras. He knew nothing about Shelby or motor sport but he hit the ground running. Fortunately he rose to the new challenge and without his ability and tenacity, and that of Don Frey, the Cobra project would never have got off the ground.

It was agreed that AC would build, paint and trim the Cobra and ship it to California where it would receive its engine, transmission and battery, so the urgent search for suitable premises resulted in Shelby acquiring the empty workshop of Lance Reventlow's Scarab team in Venice. Shelby was also looking to hire experienced mechanics and one of the ex-team members accepted an offer of employment. Once again, fortune was on Shelby's side since Phil Remington proved to be the best engineer and fabricator in the business. As a race-car engineer, Remington was never convinced about the Cobra, but he was the ideal person to turn an unpromising concept into a race winner, coming up with unique solutions to seemingly insolvable problems. Remington was a mechanics mechanic who established his reputation when, a few years later, he turned the unreliable Ford GT40 into a race winner.

In the meantime, Shelby had been hard at work publicising his Cobra. The first and only car had arrived unpainted so the aluminium bodywork was buffed to a mirror finish before it received its first road test, carried out by Sports Car Graphic magazine for its May 1962 issue. It was then painted pearlescent yellow prior to being displayed at the New York Automobile Show in April, before appearing on the cover of Road & Track with Shelby at the wheel. The magazine recorded some remarkable performance figures that were checked and re-checked but the car still got to 100mph in just 10.8 seconds and went on to record a top speed of 150mph; to say that was impressive was an understatement. The press clamoured to get its hands on the car but it was not

until July that year that the second Cobra arrived in New York. Back in Venice, the Shelby business was still under construction so one of the newly appointed dealerships agreed to help complete the first road cars. Ed Hugus had been appointed to distribute the Cobra on the east coast and his Pittsburgh workshop completed CSX2001, the first customer car, plus three other cars. CSX2002 was flown to Los Angeles where Peter Brock and Remington turned it into the first race Cobra. To avoid wasting time and money shipping Cobras back from the west coast to the east, Tasca Ford of Rhode Island finished another four cars.

Suddenly Carroll Shelby was in business and he now had to deliver on his many promises. Back at AC Cars, the future suddenly looked promising thanks to an order for at least one hundred cars, an unheard of number for the company. No doubt a glass or two of sherry was partaken to celebrate. It hardly mattered that the Ace had been obliged to change its name to Cobra, as the only stipulation the Hurlocks had made was that the familiar AC logo was included somewhere on the car and in the title. To ensure the logo remained on the car, it appeared on the steering wheel boss and on the foot pedals. Ford preferred to maintain a lower profile, being satisfied with small 'Powered by Ford' badges that appeared on the front wings.

Shelby had more pressing matters on his mind at the time; so long as it was a Cobra, the rest of the title could take care of itself. This was illustrated by the general confusion shown in contemporary road tests where it was initially referred to as the AC-Ford Cobra. Shelby quickly produced a small publicity brochure advertising the all-new 'Shelby/AC Cobra', making the most of the cars impeccable British pedigree based around the famous championship winning AC Ace and the quality of the handmade aluminium bodywork. Claims that the car had been modified to Shelby's specifications were a little wide of the mark, especially since the chassis illustration was that of an Ace, and a right-hand drive one at that! As with race-prepared Aces, the wheel arches were extended to clear the larger wheels and tyres that were obviously going to be required and disc brakes were fitted all round. The prototype used inboard rear brakes but production models reverted to a standard set-up to ensure the brakes remained in cool air during races and make replacing pads easier. Other than the wheel arch modification, the first Cobra was externally identical to the Ford-powered Ruddspeed Ace.

Chapter 3

COBRA v FERRARI – The Racing Years

Little time was wasted in turning the second production Cobra into a race car, albeit only lightly modified. Externally, a single hoop roll bar was installed and louvers and an air scoop cut into the bonnet to channel air into the engine bay. Scoops were added to channel air to the brakes and radiator while the engine had the compression ratio raised and the air filter removed. Peter Brock, who had been employed as the instructor at the Shelby's racing school, did much of the initial test driving and was doubtless disappointed when Shelby employed another talented young driver, Billy Krause, to handle the car in its first event on 23 October 1962.

Since the Cobra had only just entered production, insufficient examples had been built to qualify for an entry at the Los Angeles Times Grand Prix at Riverside. Fortunately, Chevrolet also wanted to enter a new Corvette so to ensure an interesting race the organisers allowed both cars to compete without scoring any championship points. The Cobra began to establish its legend on that first day; although he fell back at the start, Krause began to get to grips with the car and began to carve his way through the field, going on to establish a huge lead. The race was an exercise to find out which

component broke first and in this case it was a rear hub that gave way, shedding the rear wheel assembly. Enter Phil Remington, who designed a remedy so effective that the problem never reoccurred again.

To carry out further reliability tests, plus endure a tough week of serious partying, Shelby shipped the Cobra out to the Bahamas for the end-of-season Race Week, held around the islands very rough airfield. CSX2002 was entered along with two other Cobras, chassis 2009, prepared by Holman-Moody, and the first customer race-prepared Cobra, 2011. (2009 was an interesting entry since it was sent to the Holman-Moody workshops by Ford's head of racing, Jacques Passino, to see what the team could achieve with it. Many people suspected that Passino wanted all of Fords racing programmes to be channelled through Holman-Moody, since he had a long history of helping finance John Holman's successful NASCAR race team. No doubt both gentlemen saw Shelby as an unwelcome interloper who would divert money away from NASCAR. Unfortunately, Holman-Moody had no experience in the preparation of road-racing cars and 2009 arrived in almost standard road trim. Far from showing Shelby how to go racing, the H-M Cobra qualified at the back of the grid and lasted only a handful of laps). In the first GT race, CSX2002 retired with steering failure but in the final race of the week, for both GTs and prototypes, it left the once-invincible Corvettes floundering in its wake. It even challenged some of the slower prototypes before being sidelined by inexperience and a little back luck when Shelby refuelled it during a pit stop. A suspected airlock led him to believe the tank had been filled but the car ran out of fuel and stopped on the track, bringing its promising race to an end.

Even though the Cobra had not recorded a victory to date it was clear that once reliability had been established, Shelby had a winner on his hands. The owners of Corvettes were seriously concerned; some chose to switch camps by purchasing a Cobra while others preferred to indulge in politics to try to get the car thrown out of SAAC events. No matter how much they protested, the writing was on the wall for the Corvette.

Back at the Shelby American workshop in Venice, California, the number of employees grew, installing engines into the road cars and forming the nucleus of a race team. For the 1963 season, Shelby decided to jump in at the deep end and enter his Cobras in the FIA (Federation Internationale d'Automobile) sanctioned events held in the USA, pitching his team against some of the best of the European cars and drivers. In the GT category, the Ferrari GTO was the car the Cobra had to beat. With its 3-litre V12 engine and legendary handling properties, the aerodynamic coupe was virtually invincible. In reality, it was a 'special' that stretched the rules to the limit, being based on a road car chassis that was clad in non-standard streamlined bodywork. Instead of the required one hundred examples, Enzo Ferrari built no more than thirty-four, but used his influence and guile to ensure the FIA accepted it as a production GT car. Shelby observed the GTO and took note. He also had first hand experience of the manner in which Enzo Ferrari conducted business when he visited the company headquarters in Maranello to discuss an offer to drive the factory sports cars. When the inevitable issue of money was raised, Ferrari was shocked that Shelby expected payment as he considered the honour of being permitted to drive for Ferrari was reward enough. Shelby also took the view that Ferrari deliberately pushed his drivers too far, pitching them against each other, often with fatal results.

The first international race for the Cobra was the Daytona Continental held at the Florida track in February 1963. By now the Cobra team included some of the best American racers of the day – Dan Gurney, Dave MacDonald and Skip Hudson. Billy Krause had accepted a better offer from Chevrolet and departed. Gurney was paired with CSX2002 that was used during practice to evaluate a new aluminium Ford engine. Ford needed to establish whether the engine used too much oil but

instead discovered a different problem when the core-plug blew out once it reached race temperature. The solution was to use threaded plugs, but the engine swap meant Gurney had to start from the back of the grid. In the race, it was Skip Hudson who led the GT category when he forced his Cobra past the GTO of Pedro Rodriguez, the pair fighting over every corner. What Hudson did not realise was that the crankshaft vibration damper had broken and the resulting vibration were sufficient to cause the flywheel to disintegrate, sending pieces of metal flying through the car, bending the steering column and causing serious injury to Hudsons foot. MacDonald managed to bring his car home in fourth place in the GT class.

By the process of improving the car through competition, in effect driving them to destruction, numerous modifications were made to both road and race Cobras that would improve reliability. Since the Cobra was made by hand, changes were carried out on an individual basis and it was not until the first two hundred cars were completed that some form of production specification was established. Central to the identity of each and every Cobra built was its chassis registration number. This was established early in the production life of the car and the numbering sequence continued from the pattern set by AC with its Ace. In 1954, the Ace chassis numbers used two letters, AE (in the case of a car for export, AEX) followed by a two or three-digit number.

When the Bristol engine arrived, the chassis designation changed to BE (BEX). When the Cobra arrived, the next letter in sequence was 'C' so the first car became CSX (Shelby eXport). The numbering sequence began with 2000, no doubt in the expectation of building many thousands of cars in the future and changed only when a major alteration to the production run took place; thus the substantially revised 427 Cobra changed to a 3000-series of numbering. (In the nature of such things, there was the occasional exception to the rule). The first change of any significance took place when CSX2075 received the first of the Ford 4.7-litre, 289 cubic inch engines that replaced the original 4.2-litre. At the same time the main chassis rails were made from thicker tubes while from CSX2126 the steering was changed from worm and sector to the far more efficient rack and pinion system, along with a revised woodrim steering wheel. CSX2201 heralded the arrival of new Ford-sourced electrics to replace the unreliable Lucas system as well as new Ford alternator in place of a dynamo.

Production of the '289' Cobra continued until November 1964, ending with chassis CSX2589, although AC Cars did continue to build a small number of cars for the UK and European markets, registered with COB and COX chassis numbers until March 1965.

End

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