

The Preservationist

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The Development of the Jaguar XK120

For many who grew up in the 1950's, the **Jaguar XK120** filled their dreams and even today can touch our souls. This is the story of the sports car that will always be remembered as the car that propelled Jaguar into the annals of sports car history.

The XK120 prototype first appeared at the London Motor Show in 1948. It was intended to become a run of 200 hand built cars showcasing Jaguar's new K series twin cam engine. Although not originally intended for regular production, the car was an instant success and by the end of production in 1954 over 15,000 had been produced.

William Lyons, Jaguar's Managing Director, favored the engineering challenges of building sports cars, but he knew that the Company must first secure greater financial stability then the fledgling sports car market would allow. Between 1948 and 1956 Jaguar produced a series of elegantly styled



The classic XK120 roadster.

that offered good value, great style, strong performance, and comfortable rides. They were powered by 2.5 and 3.5 liter OHV straight six engines formerly purchased from the Standard Motors but

now produced in house by Jaguar. As Lyons had predicted, Jaguar's sedan cars outsold Jaguar's sports cars by nearly three to one during the post war era. With the sales of sedan cars providing a sound financial footing, Lyons could turn his attention to the emerging post war sports car market... a market that would catapult the **Jaguar** name into the ranks of automotive legends.



The Jaguar Mark V saloon produced from 1948 to 1951

luxury sporting sedans that included the Mark V and the Mark VII models. All were excellent handling cars

Following the war, automotive styling began to shift to more box like designs featuring integrated fenders in full width bodies. Lyons absorbed these changes and correctly judged that there would be room for a more elegant design that encompassed the best of the past and the future. From this inspiration, the timeless XK120 design was born. Urban legend says a woman's body was used as the inspiration for Jaguar's sensuous curves. The model name was derived from the design itself the X standing for experimental, K for the K series engine and 120 as the

estimated top speed. This was found to be an under estimation when a prototype XK120 roadster attained an officially timed two-way speed of 132.6 mph at the Ostend-Jabbeke motorway in Belgium, making it the fastest car in the world at the time.

The first roadsters were built with hand beaten aluminum body panels and ash wood frames. The chassis was a cut down version of the Jaguar Mark V box type with a lighter, simpler construction and 102 inch wheel base. The car was relatively narrow, tracking 51 inches at the front and 50 inches in the rear. Suspension was by wishbones and independent torsion bars at the front and a live axle with semi-elliptic transverse leaf springs in the rear. Twelve inch Lockheed drum brakes were fitted all around but were prone to fading so some cars were fitted with aluminum finned brake drums. Steering was of the recirculating ball joint design and the cars were fitted with a telescopically adjustable steering column.

Beginning with the later part of the 1950 model year and all subsequent years, the XK120's were mass produced using pressed steel bodies with the aluminum door panels, engine cover and trunk lid retained. Problems with obtaining the molds delayed the production of the steel bodied XK120 until the second half of 1950. In the meantime, the originally intended 200 hand built aluminum bodied cars were completed plus an additional 42 due to popularity. Aluminum bodied XK120's proved particularly successful in racing and command a premium in today's collector car market.

Over the life the Jaguar XK120 series the cars were available in a verity of models. The first was an open two seater, the OTS model (the left hand drive "M" model in the US market). Clark Gable, who met Lyons while serving as a gunner on a B-17 during the war, took delivery of the first XK120 "M" model roadster, (chassis number 670003), a hand built aluminum bodied model, in 1949.



Clark Gable (seated) and William Lyons (standing)

The roadster's lightweight canvas top and detachable side screens stowed out of sight behind the seats, and its barchetta style doors were leather trimmed and had no external handles; instead there was an interior pull cord accessible through a flap in the side screens when in place. The wind screen could be removed and a small racing wind screen fitted.



The interior of a 1950 left hand drive "M" roadster

The production XK120 roadster was priced at £1,263. Converted to today's dollars the price would have been \$25,598, a bargain price by any measurement.

Beginning in 1951 a closed or fixed head coupé (FHC) was available that was

followed in 1953 by an open drop head coupé (DHC). Both were more luxuriously appointed than the roadsters with roll-up windows and opening quarter panels. The DHC model had a padded, lined canvas top that folded under the rear deck behind the seats when retracted.



The upgraded 1953 DHC model with roll up windows.

The flat glass two-piece windscreen was set in a steel frame that was integrated with the body and painted the same color. Dashboards and door-caps in both the DHC and the FHC models were wood-veneered. The models exported for the US market had removable fender skirts covering the rear wheel arches and center lock wire wheels were optional.

The core of Jaguar's success was its power plant. During the S. S. period the Company had been modifying Standard Motor's six cylinder engines to power their cars but Lyon's wanted an engine that was of the Company's own design. Engineers began development of a purely Jaguar engine in the 1930's and continued development of the engine (*between bombings*) during the war. Under the leadership of William Heynes, the team came up with under-square (83 mm bore by 106 mm stroke) 3.4 liter straight six design (later modified to 3.8 and 4.2 liter versions). Unlike the push-rod and side-valve engines previously used, the new 'K' engine featured an alloy cylinder head with twin overhead camshafts and hemispheric combustion chambers with valves inclined from the vertical at 45°. Fuel was fed to the engine through twin



The Jaguar 3.4 liter twin cam engine

SU carburetors and the sometimes touchy electronics were supplied by Lucas (*the fabled Prince of Darkness*). Power was fed to the rear wheels through a four speed gearbox, bolted directly to the engine. In street tune the engine produced 160 bhp. The engine was comparatively advanced for a mass-produced unit of the time and the basic design survived into the late 1980s.

The XK120's Racing Heritage

The XK120's were more than just an exotic road cars and were regularly raced in competition in various forms from production models to purpose built race cars. Over the six years of its production run XK120's racked up an amazing competition record in rallies, hill climbs and in races.

Production Models - The XK120's first ever race victory came in the one hour race for production cars held at Silverstone on August 30, 1949. Leslie Johnson drove the roadster that had set the production car speed record at Jabbeke to first place. Peter Walker finished in second place in another XK120.

Jaguar XK120s raced in the US for the first time in 1950. In January Leslie Johnson brought the car that had finished second in the production race at Silverstone to the Palm Beach Shores races in Florida. The brakes faded near the end but he managed to finished 1st in the production model class and 4th overall.

At the inaugural Pebble Beach Road Races in May, Phil Hill and Don Parkinson both racing production XK120 roadsters, finished 1st and 2nd respectively.



Hill #2 closely followed by Parkinson #4 Jaguars at Pebble Beach.

In the three years of open road racing in Elkhart Lake production Jaguar XK120 entries dominated the over 1500cc classes far exceeding any other marque with a total of fifty-eight cars entered. Only the ubiquitous under 1500cc MGs recorded more entries (a total of seventy-two).

The Competition Models - Lyon's realized that winning in competition sold more cars and the success of production model roadsters in races, rallies and hill climbs was followed by the development of specific competition models designed to enhance Jaguar's reputation for engineering excellence far into the future.

The 1950 Le Mans Cars - The first factory prepared competition models were three XK120S (S for special) roadsters prepared for competition in the 1950 Le Mans 24 Hour race. They featured alloy bodies and engines with high lift cams, twin exhausts and a 9.0:1 compression ratio that increased power output to 180 bhp. They were also fitted with a stiffer suspension for better cornering and finned aluminum brake drums to help overcome the fade. The cars were entered by Leslie Johnson, Peter Clark and Peter Whitehead. The Johnson entry never ran lower than 7th and held 2nd for two hours before retiring in the 21st hour with clutch failure. The other two cars finished 12th and 15th out of the twenty-nine that finished the race.



The Johnson XK120S that ran 2nd for two hours.

In 1951 inspired by the results in 1950 Le Mans race; Lyons undertook development of two new competition models... models that would be made available for racing to a limited number of favored customers.

XK120SE - The first pure competition model was the XK120SE (SE for special equipment) that was basically the same as the 1950 Le Mans cars. Charles Hornberg, Jaguar distributor for the Western United States, obtained two of the early exported XK120SEs and

entered them in the 1951 races at Elkhart Lake where they were driven by Phil Hill and George Malbrand. With Hill in front, the cars finished 1st and 2nd in Class 3 and 3rd and 4th overall.

(The more powerful Class 2 Cunningham CR2 of John Fitch and the Cadillac Allard of Mike Graham finished in 1st and 2nd overall.)



The Jaguar XK-120 SEs in front of the Osthoff garage.

The XK120-C – Developed at virtually the same time as the SE model, the C-Type, as it came to be known, was an XK120 in name only. It was a purpose built competition car designed to compete in the 1951 Le Mans race. The C-Type's chassis was a triangulated multi-tubular light-weight designed created by Jaguar chief engineer William Heynes.



The C-Type's tubular chassis.

The aerodynamic body was fabricated from aluminum in the barchetta style

by Malcolm Sayer. They were pure race cars devoid of production road going equipment such as carpets and weather protection. Those fabricated in 1953 used thinner, lighter aluminum. Further weight was saved by using a rubber bag fuel tank, lighter electrical equipment and thinner gauge steel for some of the chassis tubes.

Early C-Types were powered by Jaguar's 3.4-litre twin cam, straight six engine used in the XK120SE's but tuned to develop 205 bhp. Later C-Type engines (1953) are more powerful, with the original SU's duel carburetors replaced by three twin-choke DCO3 40mm Weber carburetors that helped boost power to 220 bhp. The 1952 models used finned aluminum brake drum but the 1953 models were equipped with disc brake all around, thought by many to be the C-Type's single most significant improvement.



The iconic "C-Type".

1951 Le Mans C-Types - The factory entered three of the early 205 bhp, drum brake equipped C-Types in the 1951 Le Mans 24 hour race. Two of the cars were forced to retire due to lack of oil pressure but the C-Type driven by Peter Walker and Peter Whitehead was the eventual winner finishing nine laps

ahead of the 2nd place 4.5 liter Talbot-Lago.

The C-Type at Elkhart Lake - In 1952, Charles Hornberg, imported two early 205 bhp, drum brake equipped C-Types, the first to arrive in America. The cars were driven to Elkhart Lake and entered in the 1952 races for their American debut.



Phi Hill (left) and Charles Hornberg (right) seated in the "C" Type at Elkhart Lake.

Phil Hill drove the green #41 car and George Weaver drove the silver #100 car. Hill finished 1st in the Sheldon Cup race for classes 3 and 4 with an average speed of 89.5 mph, a course record that stands to this day. Weaver finished in 3rd place behind the Ferrari 212 Export of Phil Walters. In the Elkhart Lake Cup race for classes 2, 3 and 4 Hill and Weaver finished 4th and 5th behind three class 2 C4 Cunningham's.

1953 Le Mans C-Types - After three early C-Types failed to finish at Le Mans in 1952, Jaguar entered three improved 220 bhp, disc brake version C-Types in the 1953 Le Mans race. The team of Duncan Hamilton and Tony Rolt finished 1st and the Stirling Moss and Peter Walker team finished 2nd

ahead of the 3rd place Cunningham C5-R driven by Phil Walters and John Fitch. (A fitting bit of revenge for Jaguar's loss to the Cunningham's at Elkhart Lake.) The third C-Type driven by Peter Whitehead and Ian Stewart finished in 4th place. The winners, Hamilton and Rolt, recorded an average speed of 105.85 mph... the first time Le Mans had been won at an average speed over 100 miles per hour. It was perhaps the proudest moments in Jaguar's racing history.

The Jaguar XK-120C's were produced in very limited numbers. Between May 1952 and August 1953 a total of just 53 were built, 43 of which were sold to private owners mainly in the US. They are today among the world's most valuable collector cars.

Sir William Lyons - Knighted in 1956 for his services to British industry and for the fine export performance of the company, Lyons served as the Managing Director of Jaguar Limited for more than thirty years. Following the success of the XK120 series and the Mark series sedans, Lyons oversaw the development of the XKE series sports cars and the XJ series sedans.

In 1966, faced with a strengthening global competition and limited resources, he merged Jaguar with the British Motor Corporation (BMC) to form British Motors Holding; later absorbed into British Leyland.

Lyons retired as Managing Director in 1967 but continued as Chairman. The final years of his tenure were a constant struggle against impossible odds to retain the identity and independence of

his company, its' engineering department in particular. He retired completely in 1972 at the age of 71 to play golf, travel, garden and raise prize winning Suffolk sheep and Jersey cattle on his farm estate at Wappenbury. His health



Sir William Lyons 1901 to 1985.

declined fairly rapidly in retirement and he passed away just twelve years later at the age of 83. Although Jaguar's image declined in the 1970's, Lyons' legacy lives on and his many contributions to automotive history will not soon be forgotten.

HRC Latest News

Dinner Event Dates – Dates for the 2018 Dinner Events have been established as follows:

Spring Dinner Event - Thursday, May 17th preceding the SVRA Spring Vintage Festival weekend.

Summer Dinner Event - Thursday, July 19th preceding the Weathertech® International Challenge with Brian Redman Vintage weekend.

Fall Dinner Event - Thursday, September 13th preceding the VSCDA Elkhart Lake Vintage weekend.

Circle the dates on your calendar and plan to kick off the vintage weekends in Elkhart Lake at the HRC Dinner Events.

Event venues, programs and reservation forms will be mailed to all members as programs are developed.

Membership Renewal – The Chairman and President's annual letter and Membership Renewal materials will be mailed to members early in 2018. Watch for them in your mail.