JAGUAR

a different breed of cat

THE NATURAL HISTORY OF JAGUAR

BY HERBERT W. WILLIAMSON

To turn a swallow into a jaguar would be zoologically impossible. Yet, figuratively speaking, two British youths did just that, and in doing so produced a line of automobiles that have been envied, scorned, admired, criticized and wildly successful.

The paint was scarcely dry on Swallow's first S.S. in October of 1931 when—like a little boy unable to restrain himself from touching the fender to see if it really was dry — *The Autocar's* venerable columnist, *The Scribe*, noted acidly, "Anyone who was not ultra-smart in appearance, clean cut and well-groomed, would look as absurd in an S.S. Sixteen as would a costermonger in a choker sitting in a Rolls-Royce coupé de ville."

Widespread popularity is, of course, anathema to the cult of "real" sports car enthusiasts. There was a time when the image of show business personalities in purple Jaguars and with purple outfits to match irked many connoisseurs. Happily, this appeal of the car has long since been transferred to the far-out marques that proliferate in southern California. The Jaguar has acquired so much appeal for a group long noted for its conservatism that the XK-E is sometimes jocularly called "the doctors' hot rod." Nevertheless, there is still a lingering suspicion in some quarters that the Jaguar cannot be half as good as it was meant to look. A history of the company from Swallow to Jaguar, however, reveals an almost intuitive feeling for making cars which are at least that.

In 1920 William Walmsley's family moved from the Cheshire town of Stockport to Blackpool, where the young Walmsley continued his business-hobby of converting war-surplus Triumph motorcycles for civilian use. "Producing" about one unit a week (assisted by his sister and later his wife), Walmsley built an octagonal-paneled aluminum sidecar on a Birmingham company chassis. Among his neighbors in Blackpool was William Lyons, 20-year-old heir-apparent to his father's piano business. An enthusiastic motorcyclist, Lyons admired Walmsley's sidecars and bought one. As their friendship developed, the young men ambitiously planned to produce ten or more sidecars weekly. After a delay of several weeks for Lyons to reach his 21st birthday, and using £1,000 borrowed on their fathers' credit, the partners launched the Swallow Sidecar Company.

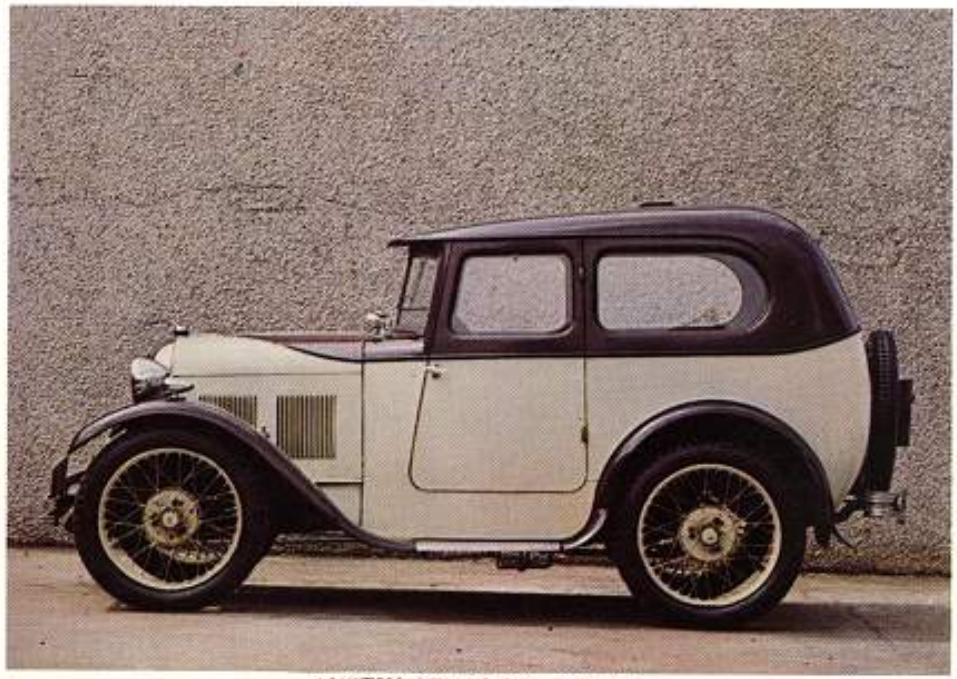
Their first steps were to move from Walmsley's garage to larger quarters and to hire a work force of about a dozen men. The year was 1922 and the newly formed company quietly produced its first Swallow sidecar. Swallow quickly acquired a reputation as an advanced designer—its use of aluminum paneling was trend-setting and helped to establish the sidecar as something more than a useful afterthought. Moreover, in a tentative way, Swallow's sidecars tested the sales appeal of clean-lined body design. The sidecar business grew and the company moved again in 1926. Lyons decided that the Swallow Company could now cater to the increasing number of car buyers who craved something different at a reasonable price.

The Swallow Sidecar Company's first attempt at an automobile conversion, its Austin Swallow, was introduced in May of 1927. Demonstrating their faith in their new product, Lyons and Walmsley changed the name of their company to the Swallow Sidecar and Coachbuilding Company. The basis for the custom bodywork was an Austin Seven, a car that had been made since 1922. Lyons had purchased one of these "baby Austins" as a used car and saw in it a good foundation for a popular custom-bodied car.

Although it is now seen in a rosy retrospective glow similar to that which enhances Americans' memories of the Model T, the Austin Seven was scarcely more than basic transportation. The car had a V-shaped frame, narrow in front and wide at the rear. A transverse leaf spring served as the front suspension, while at the rear, trailing quarter-elliptic leaf springs were attached to a solid axle. Chassis stiffening consisted of two parallel transverse cross-members. The 747.5-cc engine used in the Seven was a water-cooled, four-cylinder unit which developed 13 brake horsepower. Magneto ignition was standard on the earliest versions and the three-forward-speed non-synchromesh transmission worked through a gate change. Despite a crankshaft supported only at its ends—and in

early models having a diameter of only 1⅛ inches, making it susceptible to fracture at engine speeds equivalent to 25 to 30 mph—the engine by virtue of its simplicity played an important part in the Austin Seven's appeal as cheap, reliable transportation.

Swallow at this stage was concerned only with body conversion, not engineering or chassis design, although the chassis side-members were strengthened with angle-iron and the steering column was lowered and raked in producing the body for the Swallow Seven. The Austin company's Birmingham plant had produced sports versions of the Seven; the 1926 Brooklands model had a guaranteed top speed of 70 mph. But the unspectacular engine specifications of the Stock Seven, even when wrapped in a stylish Swallow body, erased anyone's hopes that sizzling performance had been built in. The Austin Swallow resembled the original car only through its use of an Austin radiator badge and the telltale transverse leaf front spring. The body created by Swallow was a two-seater whose bustle-like tail covered spare tire, battery and luggage. The Austin Seven had its headlights and sidelights combined and mounted on the cowl, but Swallow's version carried the sidelights atop cycle fenders that turned with the wheels, while the headlights were conventionally placed. A rounded radiator complemented the shape of the tail.



AUSTIN SWALLOW, 1926/27.

Replacing the Austin's spartan dashboard—whose biggest attraction was a plaque listing patents covering the car's design—the Swallow Austin had a completely equipped and attractively laid-out panel. The list price for a Swallow Austin was £175 and another £10 would buy a detachable hardtop that hinged upward for easier entrance.

After the Austin was announced, Swallow produced a two-seater based on the Morris Cowley. It had a longer cowl, a V-shaped windshield and a mahogany dashboard—elements that should have made it popular; however, by this time MG was the generally accepted producer of modified Morris cars and Swallow bowed out after fitting bodies on only a few chassis.

The coachbuilding aspect of the Swallow business prospered in 1928. The Austin company heartily approved the Swallow conversions and agreed to supply chassis in batches of fifty. Production was up to twelve cars and sidecars weekly when the company moved from Blackpool to Coventry for more space and to be nearer suppliers. In the future, the name of Swallow's successor, Jaguar, would be as firmly linked with Coventry as the name of Lady Godiva has been since that Saxon lady rode through the streets in a novel protest against high taxes.

Changes for the 1928 Swallow Seven included replacement of the cycle fenders with full-size fenders and installation of a V-shaped windshield. The detachable hardtop's hinging feature was eliminated. A sedan was added to the line in November of 1928 and was available with two-tone paint to make its attractively rounded body contours stand out against the somber shades applied to most other contemporary cars.

Because appearance and not performance had much to do with the sales of Swallow Sevens, it is not surprising that Swallow took great care in painting, although some owners of early cars said their Swallows' chassis were painted only where they were visible. The Austin Swallow catalog sparkled with eye-catching color combinations. In 1932 a customer had a heady choice: black and apple green; carnation red and black; nile blue and ivory; apple green and ivory; carnation red and ivory; cream and apple green; cream and carnation red; cream and nile blue, or whatever color scheme the customer wanted, including the purple and black specified by the Sultan of Perak, the company's first royal customer.

Conditions in the late Twenties were ripe for inexpensive custom cars like the Austin Swallow. The market crash of 1929 and the Depression even helped firms that specialized in mounting distinctive bodies on low-priced chassis. Observers could never be certain whether the driver of such a car could have afforded a more expensive car. The drivers themselves liked to think they looked as though they could have bought a

Bentley—or better yet, as though they had merely decided to leave the more expensive car at home. Today, they might drive a VW Karmann Ghia for essentially the same reasons.

If the Austin Seven had been the car that put Swallow into the custom auto body business, the car that kept the firm there was the Standard. Swallow listed sedan coachwork on chassis from Fiat (using the model 509A, with a four-cylinder 990-cc engine) and Swift (using the four-cylinder, 1190-cc Swift Ten as a basis) and Standard (built on Standard Big Nine underpinnings). Between 50 and 70 Fiat-based Swallows were produced in 1929 and 1930, and about 150 bodies were mounted on Swift chassis in 1930-31. Fiat was dropped and Swift went out of business.

The first Standard Swallow was presented at the 1929 auto show. The chassis, like that of the Austin, was unmodified, although wire wheels were installed. The radiator was redesigned into a V-shape and given a chromium-plated shell, hinting at the shape that would be used on Standard's own cars in 1931 and on the S.S. of 1932. The engine was a four-cylinder, 1287-cc unit, unmodified. In 1930 the word "sidecar" was deleted from the company name, which became "Swallow Coach-building Company, Ltd." Sidecars had indeed become a sideline.

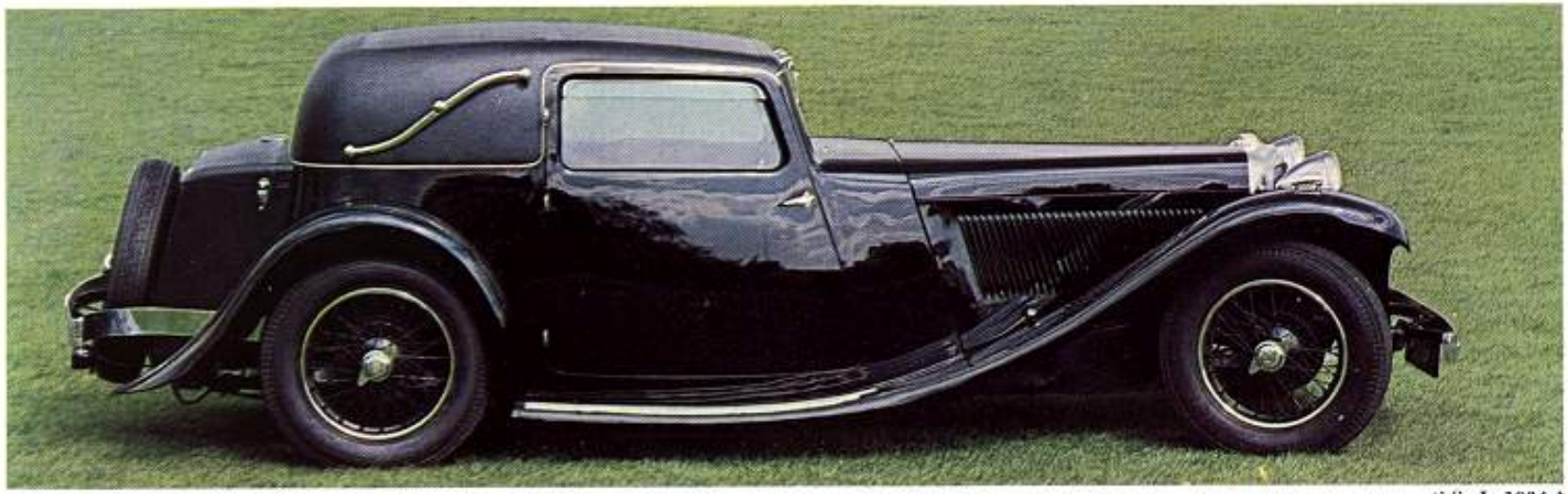
For 1931, Swallow was offering conversions on Austin, Swift and Standard Big Nine chassis—all with four-cylinder engines—but in January a new two-seater Swallow, based on the Wolseley Hornet, was announced. The Wolseley Swallow, with its 1271-cc overhead camshaft engine, was the first Swallow to be powered by a six-cylinder engine. The chassis, aside from raked steering and oversize tires, was unmodified and the car was said to have a top speed of more than 70 mph.

Despite the popularity of the Wolseley Swallow (which was offered through 1933, although later versions were built on the Hornet Special chassis), another six introduced in May of 1931 was to have a lasting impact at Swallow. The new sedan, derived from Standard's 16-hp. "Ensign" chassis, featured a 2054-cc, six-cylinder, L-head engine. The new big Standard Swallow was a milestone, for with it Swallow's preference for the six-cylinder Standard engine was established, a preference that was to form the basis of every Jaguar engine made up to 1948.

The roadster, coupé and sedan models of the Austin Swallow acquired safety glass and a lower price tag for 1932, but were otherwise unchanged, and sedans based on the Standard were continued. The Wolseley, formerly available only as a two-seater, was offered with four seats. The advertisements prior to the 1931 auto show portrayed the Standard Swallow sedan, but advised: "S.S. is the name of a new car that's going to thrill the hearts of the motoring public, and the trade alike. It's something utterly new . . . different . . . better. Long . . . low . . . very low . . . and very FAST! At the Show, or before, two S.S. coupés of surpassing beauty will be presented. WAIT! . . . THE S.S. IS COMING!"

The teaser was effective and the debut of the S.S. was a success. Although the price was only £310, observers commented on its "£1,000-look." With the S.S., Lyons' coachbuilding company evolved into a marque with its own identity, although Swallow depended on Standard to supply components to Swallow's specifications.

The first S.S. was a coupé (sedans and tourers would not appear until 1934) with cycle fenders, a very long hood and a relatively high windshield despite a 55-inch overall height (a full 13 inches lower than its



▲ S.S. I, 1931

S.S. I, 1934 ▶


SS1

Standard cousin). The V-shaped radiator had vertical chromium bars and was topped with a Swallow badge; the S.S. hexagon, retained in Jaguar's trademark today, appeared in the S.S. catalog but not on the car. Six basic color schemes were available.

The long, low "classic" look of the S.S. began with a double-drop underslung frame with semi-elliptic leaf springs front and rear. The 112-inch wheelbase was three inches longer than the contemporary Standard. The front springs were mounted outside the frame rails and the engine placed seven inches aft of its position in the Standard cars. Bendix-Perrot cable-operated brakes were adopted (Jaguars didn't have hydraulic brakes until 1949) from the Standard, and Rudge-Whitworth 3:50 x 28 wire wheels replaced the less sporty Magna type. As in the Standard Swallow, the S.S. I used the unmodified Standard Ensign engine; among the engine's features was a seven-bearing crankshaft. It produced 48 bhp at 3,600 rpm and was mated to Standard's four-speed transmission for a higher cruising speed. Top speed was 71 mph, compared with just about 60 mph attainable in Standard's own model 16.

Some evidence of the instant appeal of the S.S. I can be seen in the decision of Meccano, the toy maker, to select the S.S. I as a model for one of the first "Dinky Toys." However, a surer indication of the future waiting for Swallow was an offer from Henlys, a distributor, to buy half of the first year's output, provided at least 1,000 cars a year could be made. Deliveries totaled only 776 cars the first year, but Henlys and Swallow were not disappointed.

The two-liter S.S. I was the line leader, although there was also a smaller version, the S.S. II. This used a modified 89½-inch Standard "Little Nine" chassis with its 28 bhp, 1052-cc, four-cylinder engine. The S.S. II looked very much like the S.S. I, but the smaller car's radiator shell was painted. A month after the April, 1932, announcement of the modified Wolseley "Hornet Special," Swallow built two- and four-seater models that were virtually the same as the 1931 versions. The "Hornet Special," sold only in chassis form by Wolseley, was the last car Swallow produced on another maker's chassis and was dropped after 1933.

In 1933 the transformation of Swallow from custom-body constructor to assembler and finally to manufacturer gathered steam. The S.S. I was restyled, its cycle fenders replaced by sweeping full-length fenders with running boards. The Standard 20 engine, optional but not promoted in 1932, was offered on equal terms with the less-powerful 16. The 20 was a six-cylinder, 2552-cc unit producing 62 bhp. It had an alloy cylinder head and a bigger bore (73 mm. compared to 63.5 mm.) than the Standard 16, but the stroke (101.6 mm.) was identical. The engine was fitted with either an S.U. or an R.A.G. carburetor (the latter was made standard in 1934 only to be supplanted by S.U. in 1936; today all Jaguars use S.U. carburetors except for the 2.4-liter model which has Solex carburetors).

S.S. 100, 1936/40 ▶


SS 1937

◀ S.S. 2½-LITER. 1937

The top speed of the 20-hp S.S. coupé was 81.82 miles an hour.

With the more powerful engine—and a more efficient radiator to eliminate a tendency of the S.S. I of the year before to overheat—the S.S. I was a more desirable car to own. An armored firewall helped to keep engine fumes out of the driving compartment, and the frame was reinforced and given a longer (119-inch) wheelbase and a one-inch wider track. A lower windshield reduced forward visibility, but added to the handsome looks of the body. Provision was made for two seats in the rear of the coupé. The 1932 cars, with uncomfortable accommodations for three-abreast seating, had occasionally been given a Henlys-designed rumble seat whose chief asset was that "it was better than walking." In the spring a four-seater sports model was added to the S.S. line, the first being sold to Capt. J. P. Black of Standard.

Henlys' interest in S.S. cars was unabated. In 1933 over 1,500 cars were sold partly through Henlys' active merchandising: around-the-country sales tours, special S.S. displays and, by 1934, a raffle in which half a dozen keys to a London garage were mixed with thousands of useless ones; the first person to draw a key that would unlock the garage won the S.S. I sedan parked inside it.

The company started its competition efforts in 1933 with little success except for some prizes in a few *Concours d'Elégance*. A three-car S.S. team entered in the International Alpine Rally. One car had steering and radiator trouble, finishing eighth in class, and the two other cars dropped out with blown head gaskets. For 1934, three 20-hp four-seaters were entered; the team took third place in its class.

XK 120, 1950

XK-SS, 1957

In 1934 the 101.6 mm stroke of the Standard 20 engine was lengthened to 106 mm to give it a displacement of 2663.7 cc. Power was increased to 68 bhp. The 16 engine, sharing the stroking modification, was boosted to 2143 cc to produce 53 bhp. The cable-operated Bendix brakes had 12½-inch drums, and the transmission had synchromesh on the top three gears. Rudge-Whitworth 18-inch wire wheels, adopted in 1933, were continued.

The S.S. II was offered as a ten- or twelve-horsepower coupé and sedan. The Ten had a 1343-cc engine developing 32 bhp at 4,000 rpm, while the Twelve had a 1608-cc engine producing 38 bhp at 4,000 rpm. The sweeping fender line of the S.S. I replaced the cycle fenders the S.S. II had had since 1932, making it more obviously an S.S. product.

If the original S.S. cars had appealed to most observers, the 1934 S.S. models attracted even more favor. *The Scribe* writing in *The Autocar* commented, "When the S.S. was first introduced two or three years ago, I would not have owned it, even had it been given to me. It was too bizarre for a man of my retiring disposition, but the 1934 saloon is all the first coupé was not—a real gem of a car."

Production was approaching 1,800 cars annually at the thirteen-acre site of S.S. Cars, Ltd., now a subsidiary of Swallow. The S.S. I 20-hp coupé, most expensive in the line, was priced at £345 and the various S.S. I models were being offered in fifteen different body colors, with nineteen possible variations of interior and exterior finish.

A new model, the "Airline" sedan, was introduced for 1935 and at the end of this year Lyons and Walmsley parted company when Walmsley left to build house trailers.

The Airline, a four-seater sedan, had a swept tail and, unlike the regular sedans, had two spare tires in painted covers, one in each fender to leave the trunk free for luggage. The connotation of speed implied by its name was enhanced by horizontal louvers in the hood. Available in 16- and 20-horsepower version, the Airline has been called "the most beautiful thing on wheels," but fumes in the passenger compartment tended to make it uncomfortable. Top speed of the Airline with the 20-hp engine was 80 mph with the engine modifications adopted for 1935: a high-compression head (designed in collaboration with Harry Weslake, who would later help design the cylinder head for the XK engine); a hotter camshaft, bigger oil pan and two R.A.G. carburetors. The Airline was shown at the 1935 New York auto show, and a 1936 advertisement announcing that "36 of the sensational British Standard Swallow Sports Cars" were expected in a shipment to Hilton Motors of New York City said "the latest models available" would be on display at the showroom. The cars were, in fact, unsold S.S. I's from 1935, for in 1936 the leader of the line was the 104-horsepower S.S. 100 or the S.S. Jaguar 2½-liter.

The S.S. 90 had been a transitional model from S.S. to Jaguar. The 2.7-liter side-valve engine had been modified by raising the compression ratio and was mounted on a special 104-inch wheelbase (the same length as the S.S. II, but with a wider track). Production types had an 18-Imperial-gallon slab-mounted fuel tank and a vertically mounted spare tire. A 100-mph speedometer, big Lucas headlights and stone guards on the radiator suggested the ninety-mile performance the car could achieve. Of the original 50 that were produced and sold for £395, only four or five exist today. In March, the same month the S.S. 90 appeared, a convertible coupé replaced the fixed-head coupé which had been discontinued at the end of 1934. Production of these was also limited: Only a few hundred were made.

The Jaguar name appeared on two of the 1936 cars from S.S., a 1½-liter and a 2½-liter model, the latter available as a sedan or a tourer. In the range of 2½-liter cars, which included the racy S.S. 100, the engine was new, built by Standard, and was the S.S. Company's first effort at designing its own powerplants.

The new engine was an overhead-valve six with a bore of 73 mm. and a stroke of 106 mm., displacing 2663.7 cc and developing a maximum of 104 bhp at 4,500 rpm. Based on the side-valve engine's block, it had a seven-bearing crankshaft, light-alloy connecting rods, aluminum pistons, twin S.U. carburetors and an S.U. electric fuel pump (an A.C. mechanical pump had been used previously).

The new frame, built by Rubery Owen instead of Standard, was underslung only at the rear, with a wheelbase of 119 inches. A new body was a close-coupled four-door sports sedan called the Jaguar 2½-liter, which provided more comfortable accommodations than its forerunners. Eighteen-inch wire wheels and a new radiator grille, derived from the 1931 design but suggestive of the grille in today's Mark Ten, were finishing touches. The 2½-liter cars also included a tourer which resembled the previous S.S. I. A. 1½-liter sedan, looking much like the bigger model, was made in limited numbers, and the 20-hp sedan and Airline sedan were available.

The naming of the car is credited to Lyons and to Publicity Manager E. W. Rankin, who supposedly had scoured zoological dictionaries and decided on "Jaguar." However, the accepted version is that a short list of names—including Jaguar—was considered, but first the firm had to check with another Coventry company, Armstrong-Siddeley Motors, to make sure that its fourteen-cylinder radial aircraft engine called Jaguar was indeed extinct. It was, and S.S. was able to apply the name to their cars beneath the winged S.S. emblem on the radiator. By 1937 an accessory firm had produced a Jaguar radiator ornament described by Rankin as looking like a "cat shot off a fence." Lyons was aghast and Rankin, an amateur sculptor, produced a jaguar-like jaguar that was stylized by F. Gordon-Crosby. The ornament was an accessory (costing 22 shillings in 1937) until it was made standard equipment on the Mark VIII of 1957.

While the "£1,000 look" attributed to earlier S.S. cars was, if anything, made more expensive-looking, guests at a pre-auto-show dinner predicted the cost of the Jaguar sedan would be £632. Once again the true price was unbelievably low: only £385. Three of the five cars in the S.S. line-up were called Jaguars by 1938: sedans and convertibles in 1½-, 2½- and 3½-liter versions. There remained the S.S. 100, available in 2½- and 3½-liter versions. By then all models had overhead valves operated by pushrods; horsepower ratings were 65 at 4,500 rpm, 102 at 4,600 rpm and 125 at 4,250 rpm, depending on the displacement.

The 1½-liter engine had four cylinders, with a bore of 73 mm. and a stroke of 106 mm.—the same as the 2½-liter engine, which had two extra cylinders to boost its displacement. The 3½-liter engine was new,

MARK VIII, 1958

though its head design resembled that of the earlier Weslake pattern and it had a wider bore (82 mm.) and a longer stroke (110 mm.).

The cars for 1938 had bodywork of identical size, with five more inches of interior length, more overall width, bigger doors and, for the first time, all-metal construction. The spare tires were moved from the front fenders to the trunk lid and later to a separate compartment under the trunk. Dual exhausts were installed on 2½-liter models. Four-seater convertible coupés were offered with a choice of three engines, and the top speed of the 3½-liter 100 model was 98.1 mph. Factory output was up to 150 cars weekly by mid-1938. There was a two seat coupé exhibited at the 1938 auto show—a prototype which hinted at the post-war XK 120 coupé—but the rest of the 1939 line was not changed except for standardizing Girling rod-operated brakes.

The 1940 model-year was short-lived, S.S. changing over to war work in September of 1939. Until the war ended, the S.S. facilities concentrated on trailers, sidecars and aircraft component manufacture and repair. Toward the end of the war, S.S. built center sections for Britain's first operational jet fighter, the Gloster Meteor III. The factory, like all of Coventry, received bomb damage from German air raids. So great was the devastation of the city that the German radio boasted that a new adjective had been added to the English language, "coventrated."

Even before the war ended, plans had been made for the new Jaguars and some work done in 1944 on lightweight unit-bodied "baby Jeeps" with four-wheel independent suspension anticipated the 2.4-liter sedan of 1956 and the current XK-E, Mark Ten and S-Type. In 1945 the company discarded the S.S. name, became known as Jaguar Cars Ltd. and began building its own 2½- and 3½-liter engines. The Standard company continued to build the four-cylinder engines. Car production started in July and the first vehicles were ready in October. There were four 1940 sedans reintroduced for the 1946 model year. The convertible coupés and the 100 were shown in catalogs, but they were not yet available. With most of the cars slated for export, many Britons who had placed orders in 1946 had to wait eight years for delivery.

The first of the post-war Jaguars arrived in the United States early in 1947. These were the "Mark IV" model, a name applied to the 3½-liter cars after the Mark V was introduced in 1949. The latter was a transitional model, old-fashioned in its styling and powerplant, but modern in its use on an independent front-suspension and hydraulic brakes. Although the Mark V was the last of the S.S. class of Jaguars, the company introduced a sports car which set the style for future Jaguars.

The XK 120 made as much impact at the 1948 fall auto show as the S.S. I had made at its debut. Terms once applied to the S.S. I—"flamboyant, radical, exciting"—were now being pronounced over this new car. Apart from its striking aerodynamic body design with thrusting fenders and sleek paneling, the XK 120 presented an engine that was as much a thing of beauty as it was a source of power. Aluminum covers concealed two overhead camshafts, reflecting the advanced engineering behind the in-line six. With a displacement of 3442 cc, it produced an easy 160 bhp at 5,000 rpm. Another show-stopper was the price: about $4,000.

In designing the new engine, Jaguar had planned to produce a powerplant that could be modified over a long span of years. The cast-iron block had an aluminum cylinder head designed by Weslake, who had worked on the overhead-valve engines before the war. The engines used in today's Jaguars are essentially the same as those installed in the first XK 120s. Refined over the years, they will not disappoint those who try for 150 mph in an XK-E today.

One reason for the longevity of the XK engine is its seven-bearing crankshaft, a design feature it shares with the original 1932 Standard engine.

XK-150, 1957

MARK II, 3.8 SEDAN

Providing smooth operation, it has also permitted progressive power increases so that today the engine develops in excess of 50 per cent more power than the original two-carburetor version. Jaguar has been able to vary compression ratios by changing piston-crown heights; variations in valve-lift and camshaft contours have been easy to apply, and the hemispherical combustion chambers permitted optimum results to be attained by changes in intake port design, while sufficient "meat" was built into the block to allow for increases in displacement.

The 3442-cc engine, which originally developed 160 bhp, has subsequently appeared with outputs of 200 (in the C-Type); 180 (in the XK 120 MC); 190 (in the XK 140); 210 (in the XK 140 MC) and 250 in the D-Type and XK-SS. Enlarged to 3781 cc for the Mark IX and subsequent two-carburetor models, it was tuned to deliver 220 bhp. With three carburetor models and a straight-port head, as on the XK-150 S, the XK-E and the Mark Ten, 265 bhp was the output. As a 2.4-liter engine, it produces 120 bhp—only five less than the 3485-cc engine originally replaced by the XK engine in 1949. For all of its dynamic performance, the XK engine has been described by William Boddy in *Motor Sport* as being, "like a bank clerk, quite devoid of temperament."

Jaguar was already a household word in 1951 when the factory produced the C-Type, its first sports-racing version of the XK 120. The C-Type was the first suggestion of the envelope body that was later to appear on the D-Type competition car and the XK-E. It gave Jaguar its first Le Mans victory and also established a pattern of trying many new components first on the track and later in production cars. The D-Type, appearing in 1954, was even more purposeful looking and much faster than the C-Type —there was no separate frame; monocoque construction, in which external body panels are load-bearing, was adopted to pare unnecessary weight.

Although the race-bred improvements—better brakes, sharper, surer steering and more power—were appearing in production Jaguars, the first indication of the kind of car these improvements might produce in the future was the XK-SS. A D-Type with a full windshield, side windows, luggage rack and bumpers, the XK-SS was announced in 1957. Using a 3442-cc XK engine, the XK-SS had three dual-choke Weber carburetors and developed 250 bhp at 6,000 rpm. Dry-sump lubrication, inherited from the D-Type, was standard, and top speed was in excess of 140 mph.

Only sixteen of the planned 150 XK-SS cars were built; production facilities were destroyed in a fire that broke out on February 12, 1957, causing damage estimated at £3,500,000. The Queen sent a telegram of sympathy to Lyons, whom she had knighted the year before in recognition of his contributions to British prestige and to British dollar balances.

The trend of body design, which had begun with the XK 120 and which had been made more habitable and civilized in the XK 140, was given a final transfusion. The result was the XK 150, a somewhat bloated but highly refined derivation of the XK 120. The XK 150S version, which appeared in 1958, was powered by a potent XK engine based on the 3.4-liter cylinder block with a new cylinder head. Three S.U. carburetors fed through a cylinder head whose straight-through ports gave better breathing. Output was 250 bhp at 5,500 rpm—as much as XK-SS had produced, although the new road car lacked the racing refinements found on that earlier unusual Jaguar. The XK 150S, the most powerful Jaguar offered up to that time, was handicapped by its live rear axle and, some thought, by

▲ MARK TEN

XK-E ▶


JAGUAR

rather unattractive body work. For 1959, the engine's power was further increased to 265 bhp by increasing the displacement to 3.8 liters. It was this engine which would drive the XK-E, a car fully capable of using all of the output the mighty engine could produce.

Jaguar sedans were also being steadily improved. The original Mark VII's power climbed from 160 to 190 with the Mark VII M for 1955; to 210 in the Mark VIII in 1957; and to 220 (using a 3.8-liter block) in the Mark IX of 1959. An automatic transmission broadened Jaguar's market in 1953 and overdrive decreased the cruising speed fuel consumption on stick-shift versions in 1955. By 1958 power-assisted disc brakes were available and the next year brought power-steering. Despite the progressive refinements—including the addition of chromium trim and two-tone paint combinations—the basic Mark VII body shell became dated. The 2.4-liter sedan, introduced in 1956, offered Jaguar enthusiasts unit construction and a lower, smoother profile. A 3.4-liter version, which arrived the following year, had body changes and even more appeal, especially in the United States where power and Jaguar were almost synonymous. By 1960 the rather thick window posts of the 2.4- and 3.4-liter cars had been replaced with slimmer ones and a wider rear window and bigger side windows producing in the Mark II a graceful, airy look. With more power available, using a 3.8-liter 220-bhp engine, the Mark II was—and continues to be—a compelling alternative to American "luxury compacts."

If the 2.4-liter sedan signaled the end of the days of separate body and chassis construction, it was in the XK-E that all of the company's developments in chassis and engine design were first combined into a highly desirable and widely available package. Announced for 1961, the XK-E has body styling that is clearly derived from the racing Jaguars of the D-Type XK-SS school. It has monocoque construction; the front of the chassis is of the space-frame type and steel tubes support the engine, the front suspension, and the hinged hood-and-fender assembly.

Although the XK-E looks like a descendant of the D-Type, its suspension —especially the rear suspension—resulted from research, not racing. Unlike the D-Type, the XK-E has independent suspension on all wheels. The rear suspension, with its inboard disc brakes by Dunlop, consists of a pair of lower wishbones mounted in widely spaced needle-roller-bearings at the bottom of the differential case. The outer ends of the lower wishbones pivot on roller bearings mounted in a cast-aluminum hub carrier. The axle shafts, with universal joints at each end, serve as upper wishbones in addition to turning the wheels. The static geometry calls for a negative camber, which is adjustable by shims. Four Girling telescopic shock absorbers—two per wheel—are encased in coil springs and are mounted between the lower wishbone and the rear suspension cross member. From the subframe, two radius rods are fastened to the body and an anti-sway bar runs from the lower wishbones to the body to reduce roll.

◀ S-TYPE, 1964

The E-Type's engine is that of the later XK 150S Jaguars, a 3781-cc unit (265 bhp at 5,500 rpm). Like the XK 150S, it benefits from the straight-port head in which intake manifolds lead directly from each of the three horizontal S.U. carburetors to two adjacent cylinders. Despite its power and near-racing specifications, the engine is tractable in traffic.

Jaguar today produces the basic XK engine in four versions. There are a 120-bhp, 2.4-liter (used in the 2.4 Mark II); a 210-bhp, 3.4-liter (used in the 3.4 Mark II and the new S-Type); a 220-bhp, 3.8-liter (used in the 3.8 Mark II and the S-Type); and the 265-bhp, 3.8-liter model which is used not only in the XK-E but in the Mark Ten. The principal difference between the engines, aside from their displacement, is in the choice of carburetors and cylinder heads. The 2.4 has two down-draft Solex carburetors, while the 3.4 and 220-bhp 3.8 have two side-draft S.U.'s mounted on a log-type manifold. The 265-bhp version of the 3.8 has the three-carburetor straight-port head.

With such an advanced sports car as the XK-E leading its line, it was natural that Jaguar would revise its sedans. The result was the 1961 Mark Ten, a complete break with Jaguar's former sedan design. The Mark Ten's four-wheel independent suspension, triple carburetors, disc brakes and monocoque construction are related to the same features in the XK-E, making the Ten a truly modern luxury sedan. The polished wood and the smooth leather are still there, but the Mark Ten is a car that demonstrates dramatically that a luxury sedan can be more than beautiful.

The full-blown curves of former Jaguars are disappearing. The XK-E and the Mark Ten both show this. Latest evidence that a longer, flatter look will become a Jaguar hallmark may be seen in the Coventry factory's latest model. Introduced to the United States at the New York International Automobile Show on April 4, the S-Type sedan combines the handy size of the Mark II with the engineering advances of the XK-E. Although the front section resembles that of the Mark II (except for hooded fenders and relocated side lights), it seems likely that we have not seen the end of the evolution of Jaguar's compact series. In the S-Type, the Mark II's two-carburetor engine, its separate platform chassis and unitized body are combined with the tail section of the Mark Ten. The lines of the trunk and rear fenders suggest a similarity that is more than skin deep, for the S-Type has a variation of the Mark Ten's independent rear suspension in place of the solid axle and cantilever semi-elliptic leaf springs found in the Mark II. Other improvements on the S-Type include a roomier interior and a faster power-steering ratio. Although the S-Type is available in the United States, Jaguar maintains that it is an addition to the line, not a replacement for the Mark II (3.8.) The latter car continues to attract buyers, but the improved accommodations, faster steering and superior ride of the S-Type will be hard to ignore.

No matter how you look at its natural history, the Swallow-Jaguar bloodline is far from extinct. ✥

Often described as one of the world's most breathtaking sports cars and a "classic of the future," the new 4.2-litre Jaguar XK-E owes its basic design to a long racing heritage. In two basic body styles, coupé and roadster, its specifications are similar except in minor details.

Its all-steel body is of a unique monocoque construction, a form that results in a combination of maximum strength, rigidity and lightness. Not only beautiful but functional, it was developed from extensive wind tunnel testing and racing experience. There is no separate frame with a stressed-skin structure forming the main body shell. A tubular steel front subframe carries the engine and suspension; a fabricated steel rear subframe carries the rear suspension and final drive units; the whole shell is then welded into a single unit.

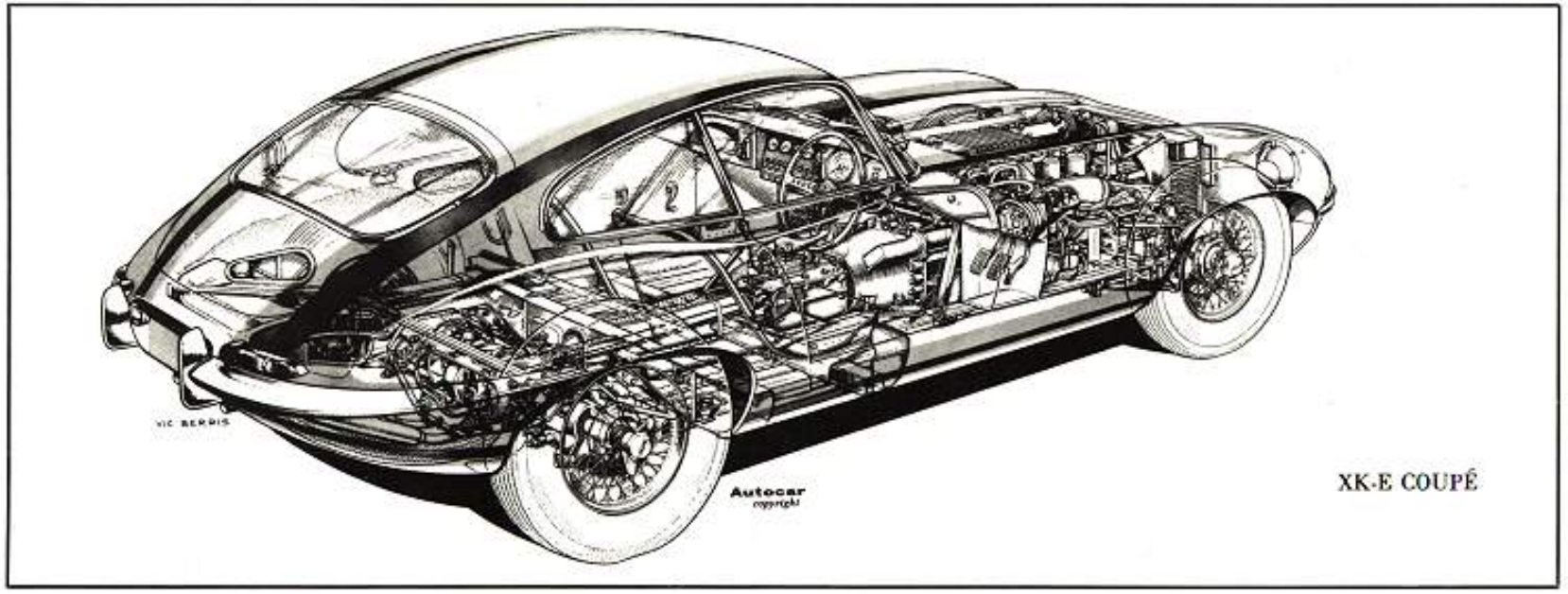
The XK-E's four-wheel independent suspension is also competition-based and provides outstanding handling characteristics, along with outstanding comfort and freedom from road noises. Jaguar's experiments with independent rear suspension began in 1955 on D-type competition cars, resulting in a system that has minimum unsprung weight, complete control of wheel movement, lack of interaction between wheels, and maximum adhesion. It is a self-contained unit, with lateral location by transverse links and live half shafts. Longitudinal location is by radius arms and by rubber mountings locating the sub-assembly in the body. Pairs of coil springs, each enclosing a telescopic shock absorber, provide the suspension medium at each wheel.

Powering the XK-E is the famed Jaguar XK engine that sped competition cars at the grueling 24-hour race of Le Mans to five wins in seven years. Rugged and reliable, it moves the XK-E to an easy 140 mph with its standard rear axle ratio and 10 to 20 mph higher with special ratios. Bored out to 4.2 liters for 1965, the extra capacity has been achieved by increasing the cylinder bore size from 3.43 inches to 3.63 inches. The same cylinder-block length has been used, but the spacing of the cylinders has been modified: the second and fifth cylinders retain their original positions; the third and fourth cylinders move together; and the first and sixth cylinders move outwards.

The new engine has 283 lbs.-ft. of torque (roughly 10% more than previous) giving greater performance in the lower and mid-speed ranges and increased flexibility at all speed ranges. Horsepower rating is 265 bhp at 5,400 rpm, while the 283 lbs.-ft. of torque are developed at 4,000 rpm. Power is transmitted by a new diaphragm clutch (which gives longer life and lighter pedal pressures) to a fully synchromesh gearbox with four speeds forward.

Since high speeds demand a first-class braking system, Jaguar provided the XK-E with race-proved Dunlop discs on all four wheels. Front brakes are mounted on the wheel hubs, while the rear brakes are mounted inboard, adjacent to the differential unit. Both front and rear brakes have independent hydraulic circuits.

Comfort for both driver and passenger and convenience of controls is apparent in the new thickly padded bucket seats (separately adjustable fore-and-aft and for rake), the height and reach adjustment of the steering column, the position of the pedals and the complete instrumentation. Despite its outstanding appearance, it's a car to drive, not just to look at and admire.



XK-E COUPÉ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The boldness that denotes the interior of the 3.8 'S' . . .

Jaguar has never bowed to passing whims of fashion, but instead has set its own unique styling trends that are instantly recognizable as "Jaguar," which is just one of the countless things that sets the car apart as "a different breed of cat." Once more, this is true with the new 3.8 'S'—another in the long succession of quality cars to come from Jaguar Cars, Ltd. of Coventry.

Longer, lower and larger than its immediate predecessor, the 3.8 Mark II, the 'S' model is a spacious five-seater that provides the utmost in interior comfort. The amazingly smooth ride and superb roadholding give true meaning to a fully independent suspension system. High performance that is reminiscent of past Jaguar racing successes and its present-day sports cars is provided by the world-famous XK 3.8-liter engine. When coupled either with a standard four-speed stickshift gearbox (with overdrive) or the optional automatic transmission, this high output engine makes one feel equally at ease in the heaviest of traffic or on the longest highway stretches. Acceleration and high speed match or surpass any car in its class.

Safety is a built-in factor in the 3.8 'S' as evidenced by such features as: unit body-chassis construction; fade-free, sure-stopping disc brakes (a standard Jaguar feature since 1957); slim windshield posts and a wide rear window that affords excellent all-around visibility; and, precise and light steering that affords the driver outstanding maneuverability and confidence in the machine.

Plush and luxurious are the words to describe the 3.8 'S' interior: real leather over foam rubber padding, deep pile carpeting, polished walnut paneling for the dash and window frames. Front bucket seats have fold-down armrests, reclining seatbacks, and individual fore-and-aft adjustments. The driver can also adjust the reach of the steering wheel by means of the telescopic column. The rear seat is wide enough for three, or two in armchair comfort with the center armrest in place. Passengers will find many convenience items, such as fold-down armrests front and rear, a front parcel shelf in addition to the lockable glove compartment, storage pockets in all doors, individual ashtrays and separate interior door locks.

The 3.8 'S' features independent suspension at all four wheels, using semi-trailing wishbones and coil springs enclosing the telescopic shock absorbers in front. The rear suspension uses lower transverse tubular links, universally jointed half shafts, radius rods and twin coil springs enclosing telescopic dampers at each wheel. The entire assembly is carried in a subframe that is easily and quickly detached from the body. This system makes it possible to combine a soft, smooth ride with superb roadholding characteristics.

The body is all steel, with four doors of integral body-chassis construction. This form of construction provides a body of moderate weight (3,440 lbs.) for its size (107⅜-inch wheelbase) and contributes a very high degree of stiffness in bending and torsion. Brakes are Dunlop bridge-type at all four wheels and feature quick-change pads with automatic adjustment for wear. The system has a vacuum servo assist to assure maximum braking with minimum pedal pressure. The handbrake is also self-adjusting.

The 3.8 'S' is powered by the six-cylinder inline XK engine of 3.8-liter displacement. With twin S.U. carburetors and a compression ratio of 9 to 1, power output is 225 bhp at 5,500 rpm. Transmissions are four-speed, four-speed with Laycock-deNormanville overdrive and Borg-Warner automatic. The overdrive, electrically controlled by a lever on the dash, operates in fourth gear only. The Borg-Warner automatic transmission has three speeds and a wide range of torque multiplication of 17.6 and 3.54 to 1. Included with the automatic is a gearhold switch on the panel that allows instant changes to be made between intermediate and high gears regardless of the throttle opening until the switch is again operated. This is particularly useful when overtaking in heavy traffic.

The 4.2 Sedan, until this year known as the Mark X, is one of the world's most luxurious high-performance sedans. A four-door, five-seater with independent suspension at all four wheels, it has a top speed of more than 120 mph and is fitted with the new 4.2-liter twin overhead camshaft XK engine, a new Borg-Warner automatic transmission, a limited slip differential, a new variable ratio power steering system, and leather upholstery—plus many other extras that are usually extra in price as well—all as standard equipment.

What may well turn out to be the most outstanding new feature of the 4.2 Sedan is the Bendix 'Varamatic' variable ratio power steering system. A Jaguar 'exclusive' not available on any other imported or domestic car, the system was developed jointly by Bendix and Jaguar engineers.

This variable ratio system enables a normal ratio (21.5 to 1) to be used for straight-ahead driving—including high-speed cornering—thus ensuring accurate control. The higher gearing toward the locks, combined with the high-pressure pump, gives finger-light parking with a minimum of wheel movement. There are 2¾ turns from lock to lock.

In addition to the variable ratio, the box has a specially developed control valve operating on the lightest steering wheel pressure, which gives an immediate and smooth response of a quality generally only associated with manual steering.

From the straight-ahead ratio of 21.5 to 1, as lock is applied, the ratio is gradually reduced to a minimum of 13 to 1 at full lock. This results in a substantial reduction in the number of steering wheel turns from lock to lock.

Added performance in the new 4.2 Sedan stems from a new version of the XK engine, essentially the same as that used in the XK-E sports car.

The competition-bred, twin overhead camshaft engine is of larger capacity than previous (4.2 liters or 258.4 cubic inches vs. 3.8 liters or 230.6 cubic inches). Rated at 265 bhp at 5,400 rpm, its torque has been increased by roughly ten per cent to 283 lbs.-ft. at 4,000 rpm, providing even better acceleration and flexibility in top gear, while maximum speeds are virtually unchanged.

Coupled to the 4.2-liter engine is a new dual-range automatic transmission that allows the driver to make use of its fully automatic characteristics or to override them as desired. The Borg-Warner Model 8 automatic transmission with torque converter and planetary gearbox provides low, intermediate and direct top. The dual drive range (D-1 and D-2) affords a high degree of driver control: D-1 gives a start in 'low,' and after it shifts to 'top,' permits a kickdown to 'intermediate' or 'low'; D-2 gives a start in 'intermediate,' and after it shifts to 'top,' permits a kickdown to 'intermediate.'

. . . contrasts smartly with the muted splendor of the 4.2.

As on previous Jaguars, the 4.2 Sedan features Dunlop self-adjusting bridge-type disc brakes at all four wheels. The hydraulic circuits for front and rear brakes are completely separate and are controlled, via a tandem master cylinder, by a twin-output suspended-vacuum-type servo.

Elegant, and with refined taste the new Jaguar 4.2 Sedan has a sumptuous interior. The deeply cushioned seats are upholstered with exquisitely soft glove leather. (It is no wives' tale that it takes three perfectly matched hides to complete the upholstering of one sedan.) Front seats recline, with a wide range of intermediate positions. Each seat has its own folding armrest. Rear seats accommodate three passengers, and with the armrest folded down, provide armchair comfort for two. Matched, mated and finely polished walnut is used for the dash, the fold-down vanity tables in the backs of the front seats and for the window frames. Plushly padded, thick pile carpeting completes the luxury story.


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