

CAR *and* DRIVER

APRIL 1963 • 50 CENTS

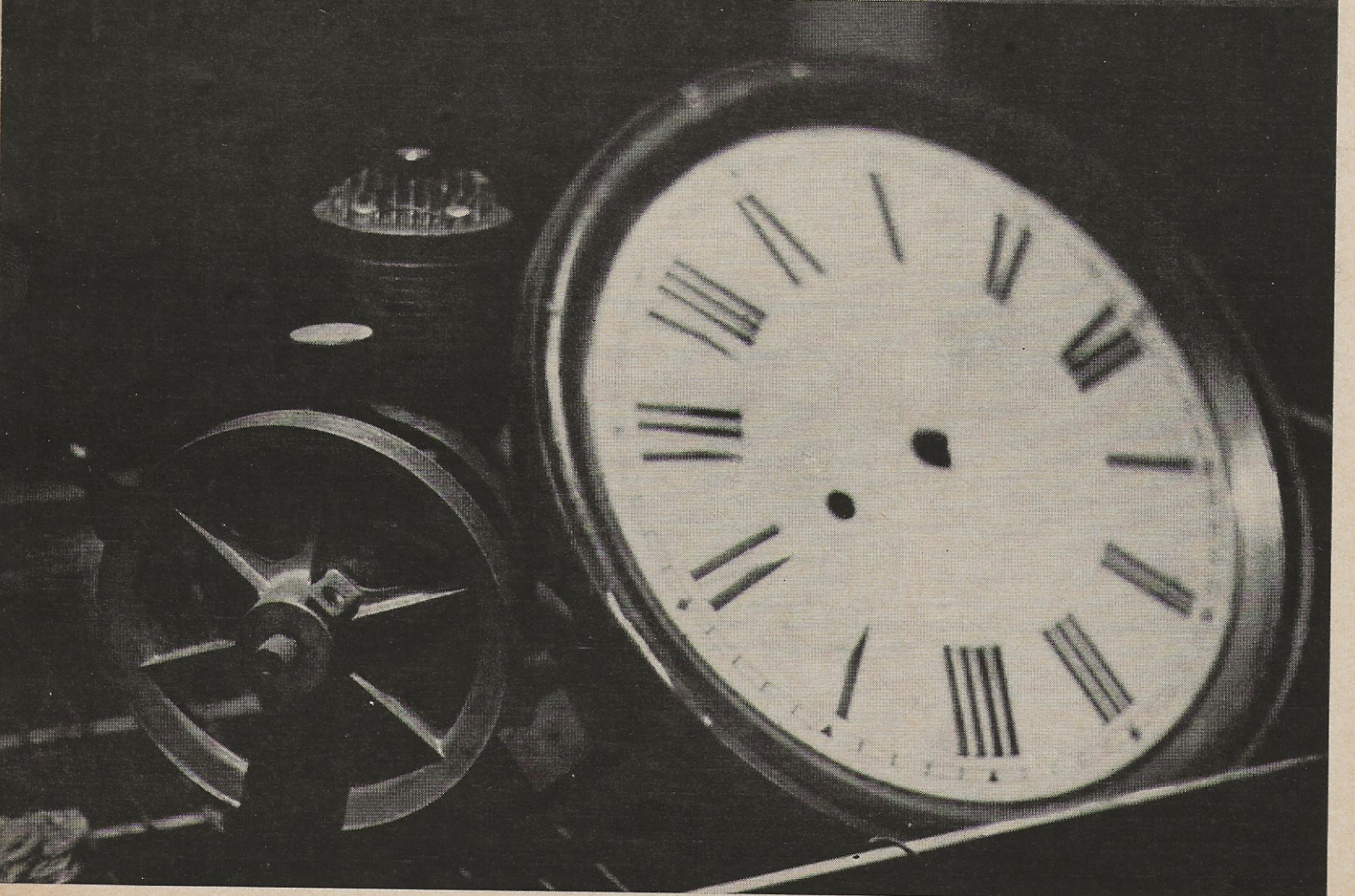
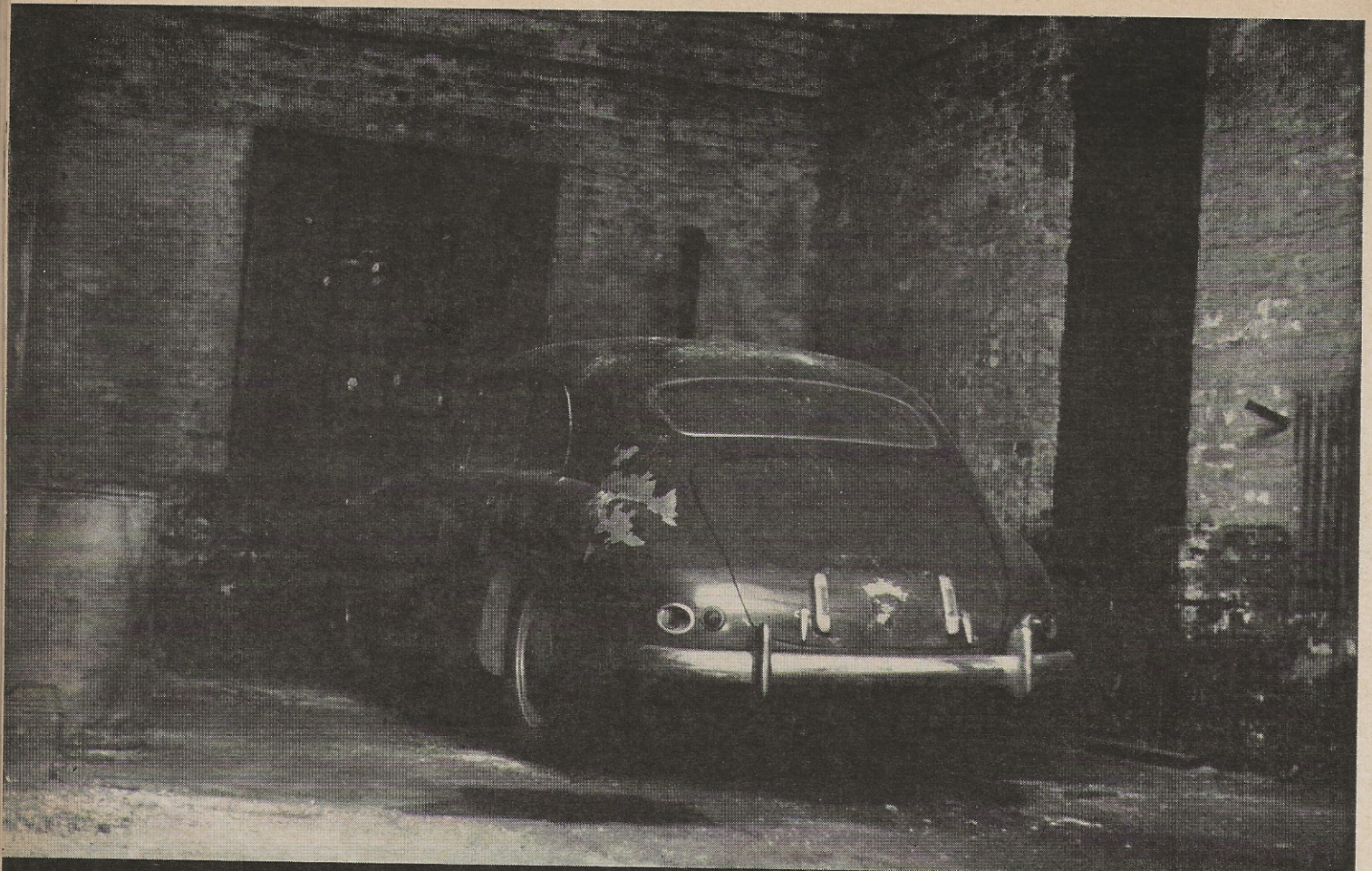


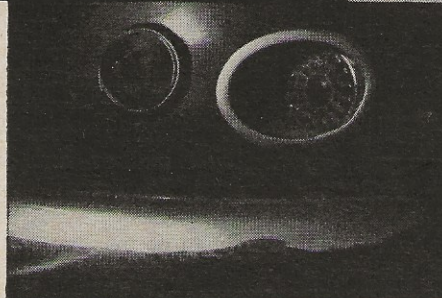
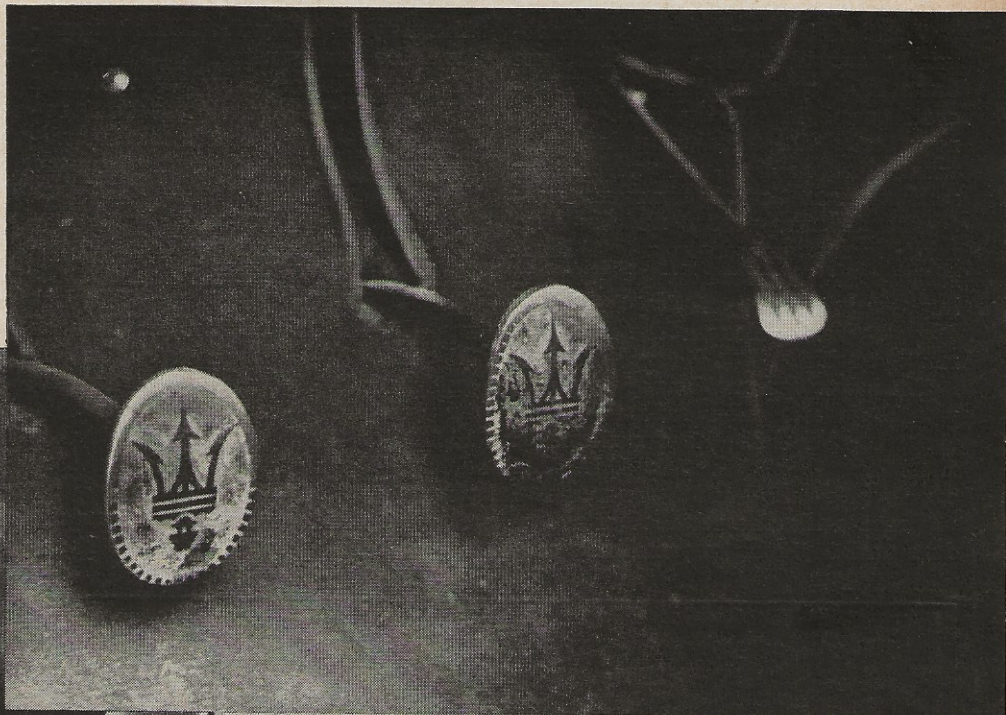
WE TEST FERRARI'S SUPERAMERICA: WOW!

CORVETTE STING RAY Road Research Report

'63 SEBRING PREVIEW ★ GP TEAM LINE-UPS

GT CAR ROUNDUP: EUROPE-DETROIT-FIA





Photographed by Howard Harrison

The streets of Rome (circa 1949 A. D.) provided the original setting for this pioneer GT. Three owners (Sig. Chicca, Sig. Cesare, Sig. Mastrorilli) knew it there; another (Mr. Blodgett) brought it to Vermont. Now CAR AND DRIVER undertakes to undo time's ravages in preparation for our Concours at the N. Y. International Automobile Show.

For the first 20 years of its existence, the Maserati factory produced nothing but competition cars, open-wheel single-seaters and stark two-seater sports cars. Never having built a touring car of any kind naturally would make the first one something special. The A6G Maserati coupé is exactly that. It also represents the starting point of a whole line of high-class machinery ranging from Grand prix racing cars to the de luxe passenger cars that have since emanated from the Maserati works. However, its origins are less complicated, as the design is directly derived from the 1936 6C racing model.

The letter designations of the post-war Maseratis differ radically from those used before the departure of the Maserati brothers in 1947. Our car is called A6G-1500, the numeral "6" indicating the number of cylinders and 1500 the approximate dis-

placement. The "A" is the initial of the girl friend of one of the engineers responsible for the engine design, and since both parties are still alive we shall let them remain anonymous. The "A" definitely should not, therefore, be interpreted as short for "Automobile" or "Autovettura". The "G" stands for Ghisa (cast iron) referring to the cylinder block. In subsequent derivations of the original design, such as the A6GCS or A6GCM, the letters stood for Ghisa-Corsa-Sport and for Ghisa-Corsa-Monoposto, respectively.

The 6C of 1936 (C for Cilindri) was not Maserati's first six, as both 3.3- and 3.7-liter six-cylinder engines derived from the racing straight-eights had been raced in 1934. But it represented a complete design departure from all previous power units.

The block was cast in three pairs of cylinders with integral heads

65 bhp at 4,500 rpm, and drove a rigid rear axle via a four-speed gearbox with first as a starting gear and three fairly close ratios: direct top, 1.35 to one in third, and 1.78 to one in second. First gear was 3.68 to one and reverse 6.25 to one.

The A6G-1500 was one up on its racing ancestor, having a tubular frame, inspired by the Massimi-no-designed 4-CLT monoposto chassis.

While the 6C was moderately successful in "voiturette" racing (as Formula Two was then usually described), mainly as a rival for the six-cylinder ERA, Maserati decided that four cylinders might be a better solution and brought out the 4-C (with a 69-mm bore and 100-mm stroke). This engine was roughly one half of the three-liter 8-CM Grand Prix machine and was placed in the chassis of the 6C practically unaltered. After a while the cylinder head was redesigned to accommodate 16 valves instead of eight, and the 4-CL was brought out (L for linguette, meaning little tongues, and indicating the finger-type cam followers used). This engine also had square cylinder dimensions (78 x 78 mm) and was the power plant for the San Remo model, officially termed 4-CLT (T for "Telaio Tubolare") for its ladder-type tube frame and redesigned front suspension with streamlined rocker-arm wishbones and concealed "inboard" coil springs.

The four-cylinder engine entered modern racing in a privately raced Gigi Platé conversion bored out to two liters capacity for the 1949-53 F-2, while the factory concentrated on the six-cylinder power plant.

From 1,494 cc it went without major modification to 1,550 cc, and then to 1,987 cc. As the A6G-2000 it entered series manufacture and, with the aid of such coachbuilders as Bertone, Frua, Ghia and Pinin Farina, the two-liter attracted world-wide attention.

There were three versions of the two-liter; one with 72.6 x 80 mm bore and stroke, and a later one with 76.5 x 72 mm, which led to the ultimate 75 x 75 mm engine used in the A6GCM Fangio raced in 1953.

As soon as the potential of the A6GCS dawned on Guerrino Bertocchi a twin-cam head was developed and put into production. Bertocchi has been chief tester of Maserati since the inception of the make and mainly responsible for the continuity of Maserati production through the years. Developed for sports cars and F-2 concurrently, it happily took such punishment as being run in the Targa Florio with Mille Miglia gearing (making rare indeed the moments when the

Mementi di Maserati

A turning point in Maserati policy came when the firm decided to make touring cars



Guerrino Bertocchi

carrying double overhead camshafts and the valves disposed at an included angle of 90°. The camshafts were gear-driven from the front of the engine, and the crankshaft ran in five plain bearings. With a 5.5-to-one compression ratio and a Roots-type blower delivering 15.5 psi boost, it developed 175 bhp at 6,680 rpm.

The chassis was built up on a box-section steel frame, and the independent front suspension had unequal-length wishbones with a longitudinal torsion bar connected to the upper on each side. The rear end consisted of rigid axle, torque-tube drive and semi-elliptic leaf springs.

As adapted for series production, the 1½-liter six-cylinder engine had a one-piece seven-main-bearing block with slightly different bore and stroke (65 x 75 mm in the 6C, 66 x 72.5 mm in the A6G). The cylinder head was detachable, carried a single overhead camshaft, and the valves were disposed at a narrower included angle of 71.5°. The exhaust valves were operated via rocker arms, and the rocker arms for the inlet valves had pushrods so short as to be more like valve lifters.

Fitted with a single Weber DVL-35 dual-throat carburetor, it developed

driver could go as high as third gear) and became famous as an extremely robust unit before it was enlarged to 2½ liters for the 1954/60 F-1 and given the designation 250/F.

Bored out from 75 to 84 mm while retaining the 75-mm stroke, it had a displacement of 2,493 cc. Valves were inclined at an included angle of 77° (inlet 36° from vertical, exhaust 41°). The compression ratio was 11.0 to one and it breathed through three Weber 42 DCO/3 carburetors, developing 240 bhp at 7,500 rpm when new, 285 bhp at 8,000 rpm three years later. These figures were obtained with special AGIP fuel (50% methylated alcohol, 35% gasoline, 10% acetone and 5% benzole).

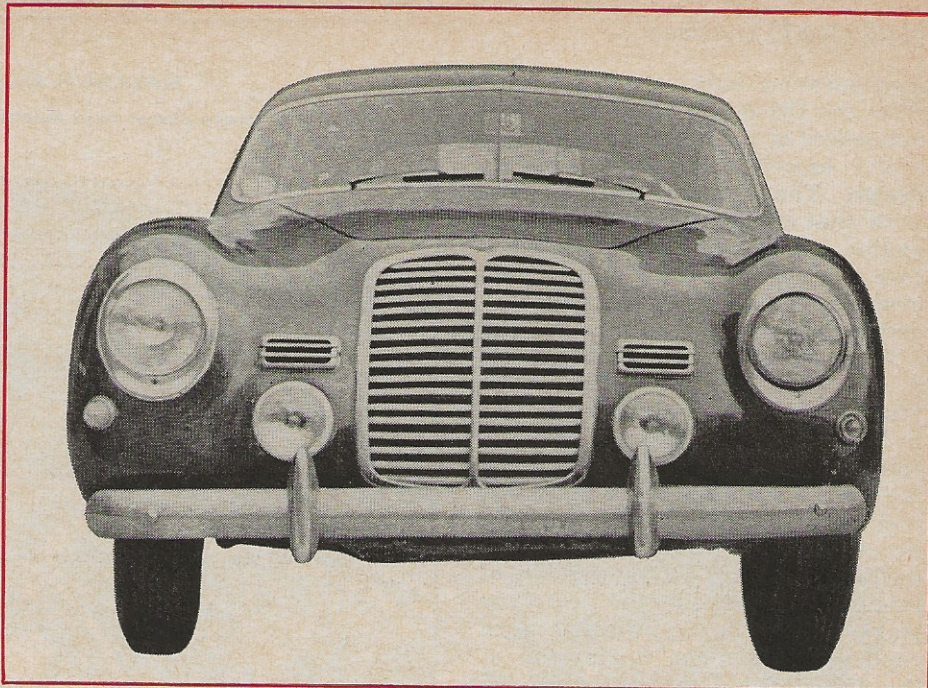
Rigid rear axles had underpinned all A6GCS and GCM Maseratis, but for the 250/F a de Dion suspension was designed. Since the current 3500-GT uses a rigid axle, the subject of rear suspension is worthy of a closer look. When the A6G-1500 was designed, many cars with much more torque and power found Hotchkiss drives perfectly adequate, while Maserati seemed wedded to the torque tube for racing chassis. But since the Maserati designers were even then working with a view to increasing engine size and power output, immediately set about development of a suitable chassis.

Location of the rigid axle was a major consideration, and this was made unusually positive by the use of double radius rods and a Panhard rod, with coil springs located behind the axle housing, and an anti-roll bar forward of it, below the drive-shaft. The principle of the 3500-GT rear suspension is identical, although dimensions and geometry have been considerably changed.

In engine development, there is a direct line from the 250/F through the 300-S and 350-S to the 3500-GT.

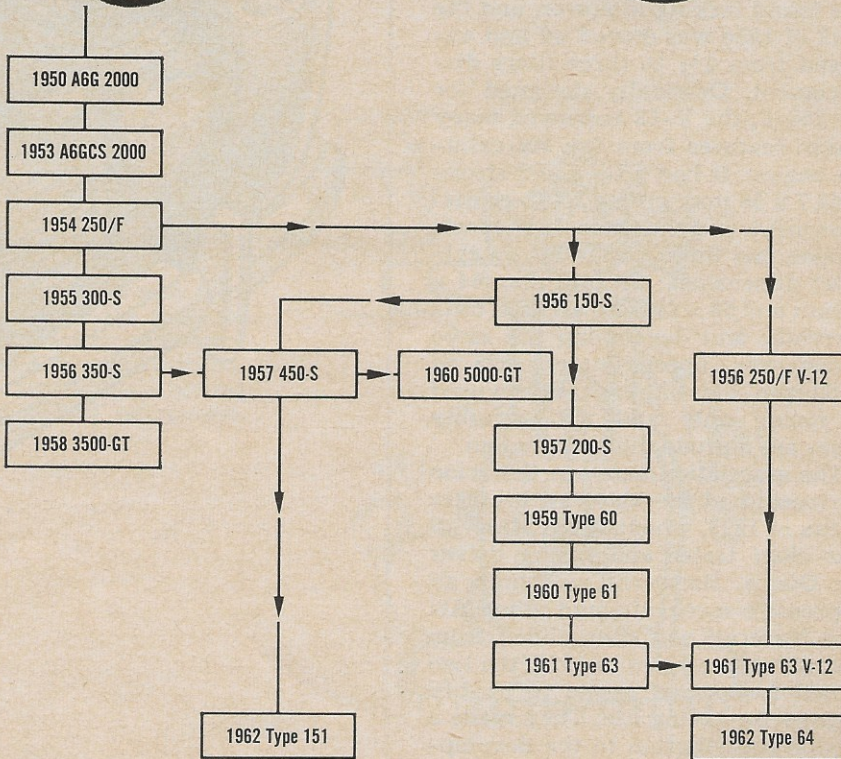
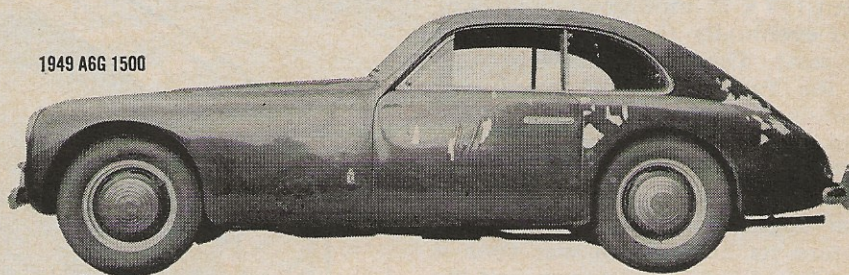
The three-liter version of the in-line six had 84 x 80-mm bore and stroke, and with a compression ratio of 9.5 to one developed 295 bhp at 6,500 rpm. It was subsequently enlarged to 3½ liters with 86 x 100-mm bore and stroke—dimensions that were retained when the engine was developed for series production as a touring-car power plant.

The other current Maserati, the 5000-GT, has a more complicated origin. Alfieri Maserati designed his first V-8 in 1934, a 4.2-liter gradually enlarged to 4.7-liters developing 370 bhp, as his answer to the 4.9-liter Bugatti. Dropped after two seasons in favor of the in-line eight, it has been lurking in the background and provided the inspiration for the 450-S of 1957, a V-8 4½-liter engine



While representative of the post-war creed of GT cars, the Pinin Farina-bodied Maserati A6G-1500 is unique in being derived from an open-wheel single-seater.

A6G-1500 GENEALOGY



MASERATI *CONTINUED*

incorporating substantial influence from the 150-S (an 81 x 72 mm development of the four-cylinder Maserati) especially in cylinder-head design. The chassis was identical with that of the 350-S. The 450-S engine led the way to the 5000-GT (which uses chain drive for the four overhead camshafts instead of gears) and lives on in the Type 151.

From the 93.5 x 81 mm of the 450-S, the Type 151 was destroyed to 75.8 mm with a two-mm reduction in bore. The 5000-GT is almost different enough to be another design, with 94 x 89 mm bore and stroke, and numerous changes made in order to achieve an acceptable production cost. A 3.8-liter version of this engine is still in the prototype stage, having been intended as a replacement for the in-line six of the 3500-GT but delayed since the fuel-injected six has reached a stage of happy balance between performance and reliability, and consequently needs no replacement in the foreseeable future.

In turn, the four-cylinder engine was enlarged to two liters displacement (99 x 75-mm bore and stroke) and eventually to 2.7 liters (100 x 92 mm). These engines were used in the Type 60 and 61 "birdcage" models. The two-liter developed 195 bhp at 7,800 rpm and the 2.7-liter 240 bhp at 7,000 rpm. The latter was chosen as a power plant for the first rear-engined Maserati, the Type 63. Before its first season was over it was found lacking in power, and the V-12 of 1956 was dusted off and enlarged from 2½ to three liters displacement. Originally designed for the 250/F, the V-12 borrowed many design features from the six-cylinder engine. It had a bore and stroke of 68.7 x 56 mm, giving 2,497-cc displacement, and the three-liter sports version had three variations on cylinder dimensions: 56 x 75 mm, 64 x 70 mm and 68 x 68 mm, all used concurrently and developing the same horsepower, approximately 325 at 9,500 rpm. This engine has been used in racing only and will possibly never see a production adaptation.

The association between Guerrino Bertocchi and the Maserati brothers began in 1923, when Alfieri Maserati was chief tester and racing driver for Diatto. Bertocchi was then an apprentice mechanic, and when Alfieri Maserati was disqualified from racing for two years in 1925, the two joined forces and began to modify engines for racing use. They made a sizable contribution to the development of Diatto design, and in 1926 built a car completely of Maserati

MASERATI A6G-1500

Manufacturer: Officine Alfieri Maserati S.p.A., Modena, Italy

ENGINE

Displacement91 cu in, 1,496 cc
Dimensions6 cyl, 2.60-in bore, 2.86-in stroke
Valve gear	..Single overhead camshaft operating inclined valves via rocker arms
Power65 bhp @ 4,500 rpm

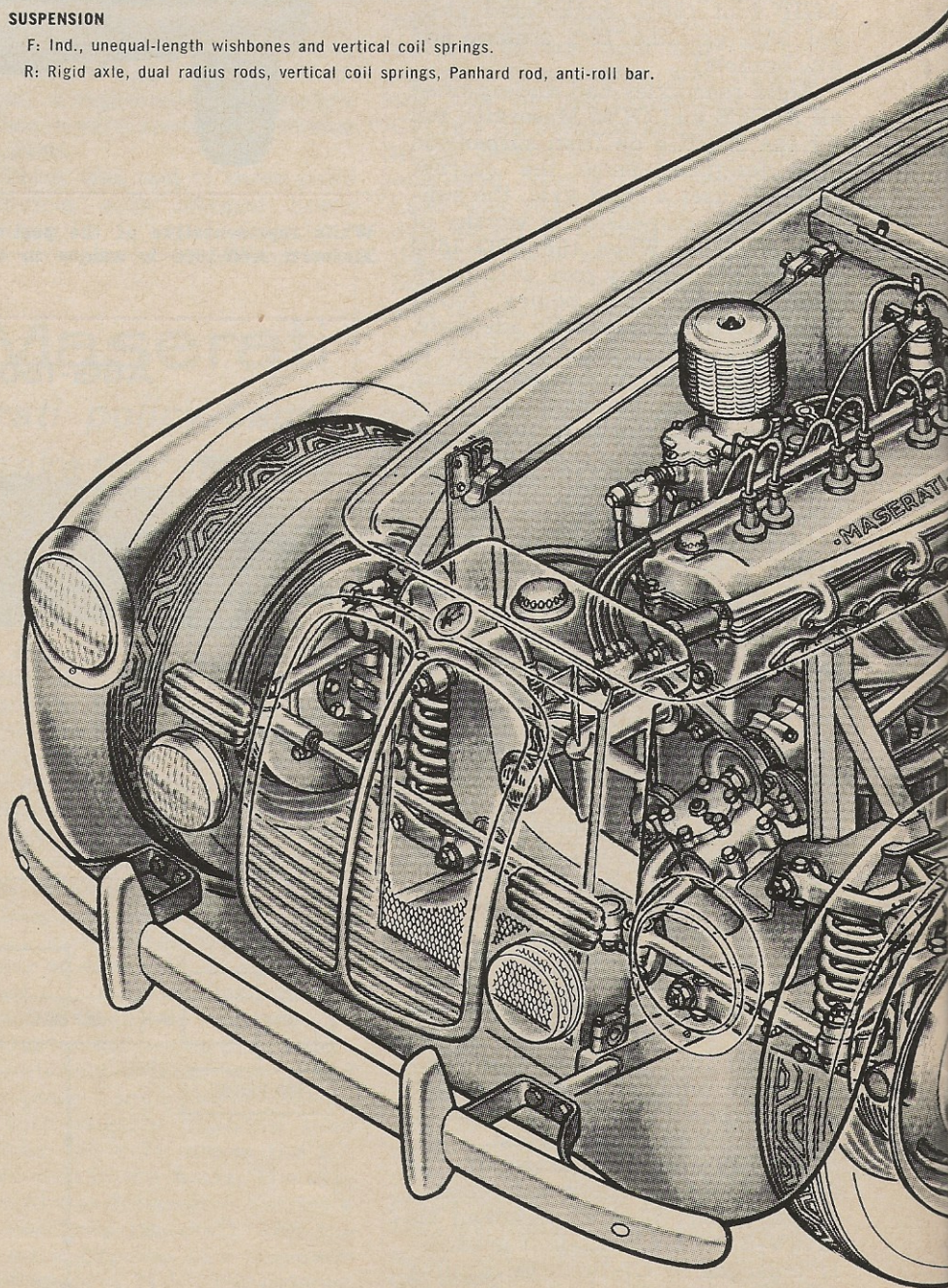
CHASSIS

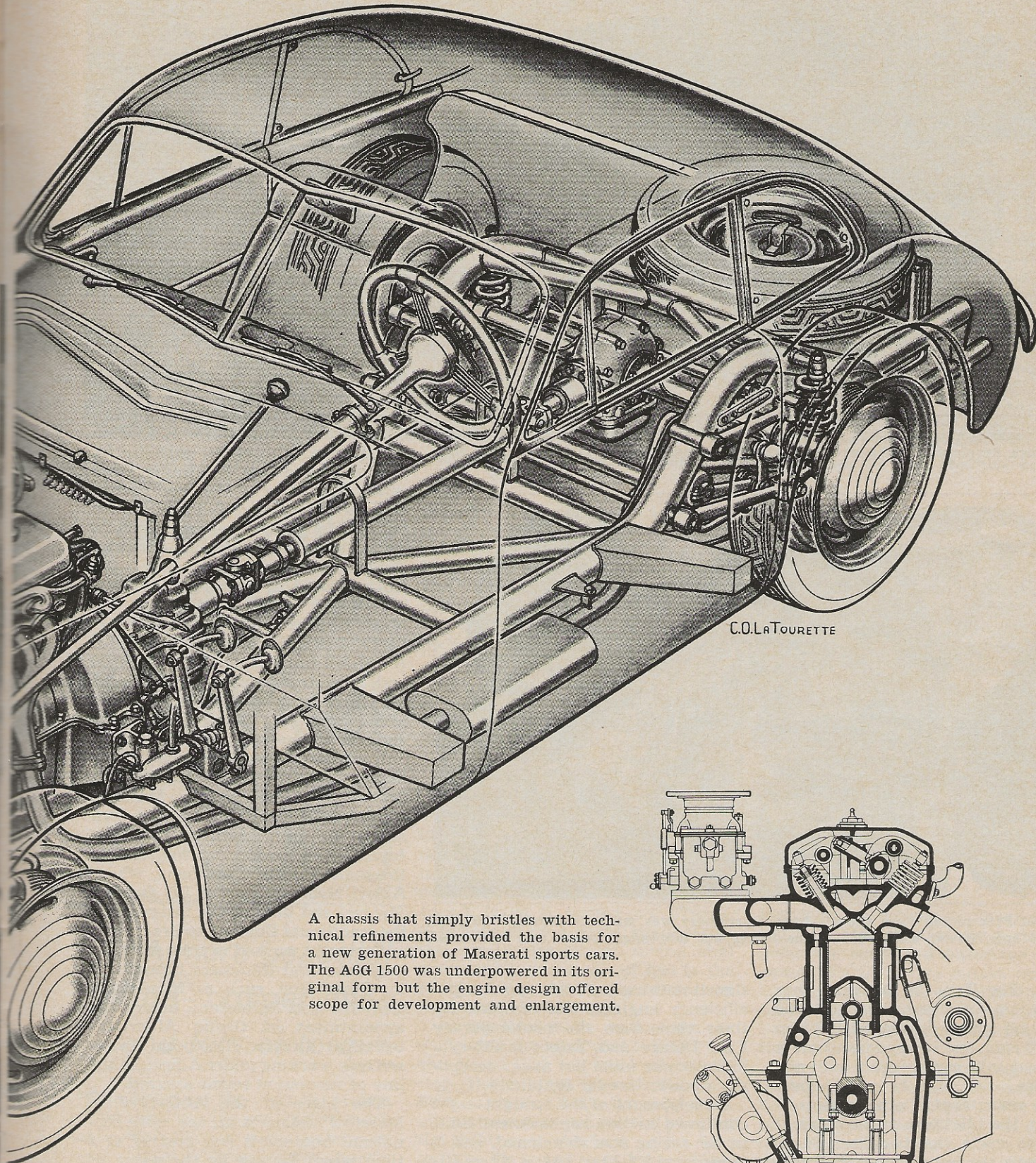
Wheelbase101 in
TrackF 50½ in, R 49½ in
Length162 in
Ground clearance4.7 in
Turning circle36 ft
Curb weight2,160 lbs

SUSPENSION

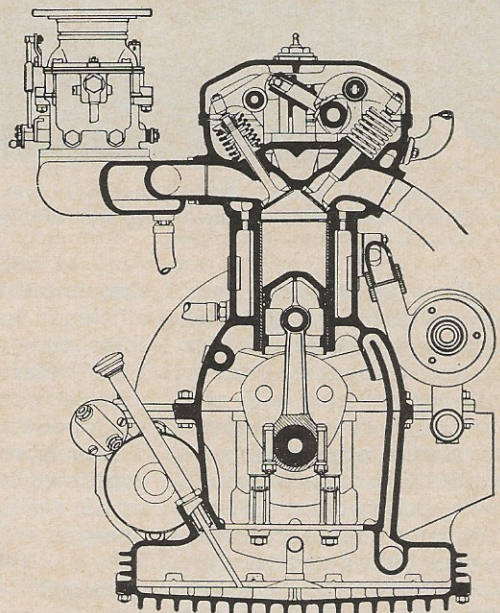
F: Ind., unequal-length wishbones and vertical coil springs.

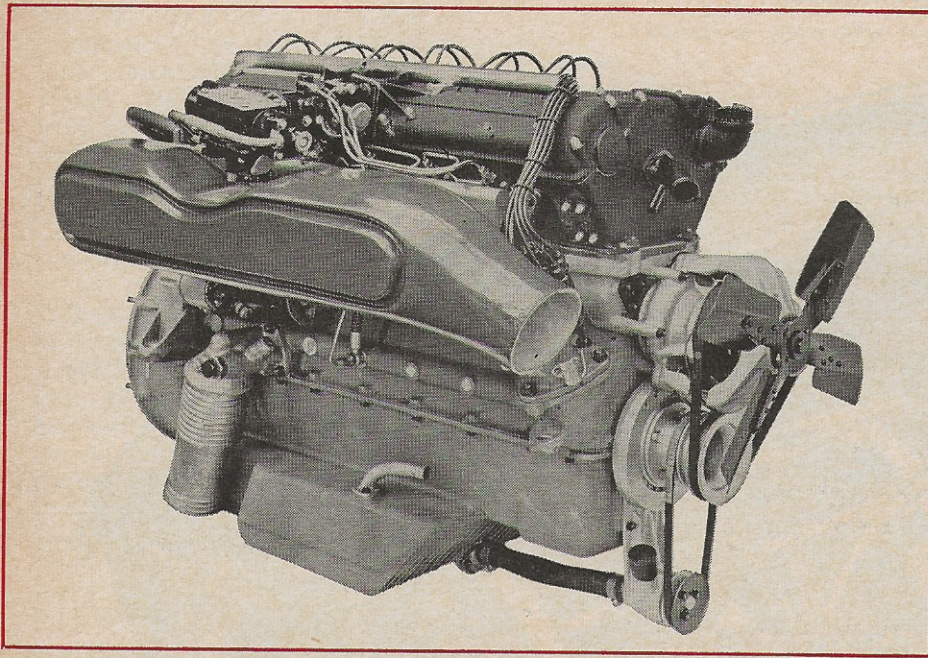
R: Rigid axle, dual radius rods, vertical coil springs, Panhard rod, anti-roll bar.



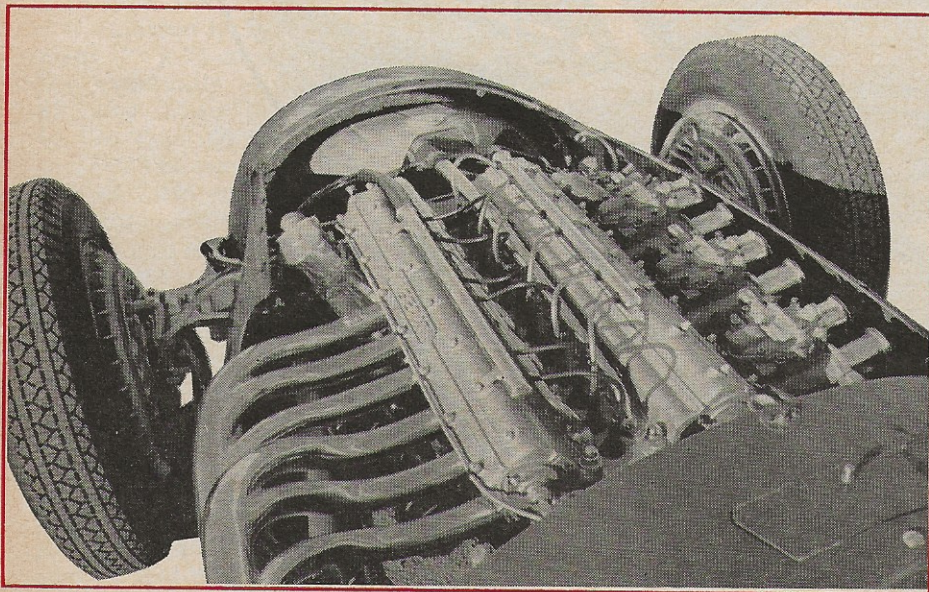


A chassis that simply bristles with technical refinements provided the basis for a new generation of Maserati sports cars. The A6G 1500 was underpowered in its original form but the engine design offered scope for development and enlargement.





Latest version of the in-line six Maserati is the fuel-injected 3500-GT power unit which develops 235 bhp at 5,500 rpm with a compression ratio of 8.8 to one.



In Grand Prix racing form the 2 1/2-liter six-cylinder was made to develop 285 bhp at 8,000 rpm. Power was lower in the 3-liter but mid-range torque was increased.

design. The Type 26 Maserati was a dohc 1 1/2-liter straight-eight (60 x 66 mm) which developed 128 bhp at 5,300 rpm, and it was immediately launched into competition with the P-2 Alfa Romeo, the Type 35 Bugatti and an assortment of other makes.

From the 1 1/2 liters of the original Type 26 came the two-liter 26-B, essentially the same engine with cylinder dimensions enlarged to 62 mm bore and 82 mm stroke, giving a displacement of 1,975 cc. It developed 155 bhp at 5,300 rpm.

It is remarkable that from the very beginning Alfieri Maserati de-

signed nothing but high-speed high-efficiency engines, less complex for their time than the contemporary Fiat, Delage and Talbot multi-cylinder power units but never accepting a power loss for simplicity.

Development of the straight-eight continued as the displacement limit in GP racing was abandoned, and it became a 2.1-liter (65 x 82 mm), then a 2.5-liter (65 x 94 mm) and even a 2.87-liter (69 x 96 mm) before appearing in its best-known three-liter form (69 x 100 mm) under the designation 8-CM.

What first brought the Maserati

name before the public was not so much its racing participation as its success in attacking International Class Records. Putting two Type 26-B blocks on a common crankcase at a 45° angle gave a four-liter V-16, and in 1929 Borzacchini used an open-wheel single-seater so powered on the autostrada outside of Cremona to travel at a mean speed of 151.38 mph over 10 kilometers.

There was a profusion of Maserati engines in the early Thirties, overlapping in size and number of cylinders. The smallest was the 4-CS (1,100 cc) but the four-cylinder group went up to 2 1/2 liters, and the first sixes were much larger than the well-proved three-liter eight.

Alfieri Maserati was born about 1880 at Voghera as the son of a railroad engineer, and died in 1932 after a minor operation which had become necessary as an after-effect of a racing accident in 1927.

There were six Maserati brothers: Carlo, Alfieri, Bindo, Mario, Ernesto and Ettore. The eldest was Carlo, who built the single-cylinder Carcano car as early as 1898 and rose to become managing director of Junior before his premature death, which left Alfieri as the head of the family. Bindo became works manager for Isotta Fraschini (where Carlo had been chief tester) and joined the Maserati firm about the time of Alfieri's death. Ernesto worked with Alfieri on the design of the Type 26 and on all subsequent models until the three owners (Bindo, Ernesto and Ettore) sold out to Orsi in 1947 and promptly established OSCA.

Guerrino Bertocchi stayed in Modena with the Maserati trident rather than follow the Maserati brothers. The trident has its own story: it was inspired by the large fountain and statue of Neptune in the main square of Bologna, where Alfieri Maserati started his factory. The red and blue of the insignia are the traditional Bologna colors.

Bertocchi worked in turn with the engineers and designers brought in by Omer Orsi, such as Massimino, Colombo and Bellentani, before the appointment of Giulio Alfieri as technical director. Bertocchi has a son now working under Alfieri, so the line of succession seems assured.

The place of the A6G-1500 in Maserati history is all the more significant because it was created at a time when no one by the name of Maserati was any longer connected with the firm—yet it is a typical Maserati product and led to the development of a car that won the 1957 World Championship and a line of touring cars second to none. *CJD*