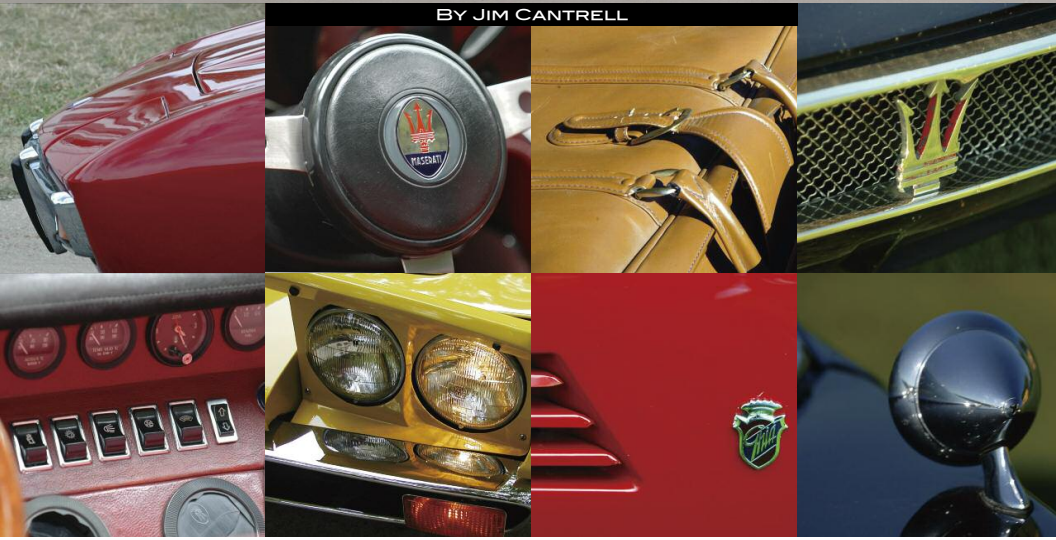




THE MASERATI GHIBLI:
Ghibli
AN EXCITING EVOLUTION

BY JIM CANTRELL



Origins

The mid-1960s are arguably the zenith of the GT sports car culture and this is especially true for the Italian manufacturers such as Maserati. Racing on Sunday was seen to be inextricably

linked to sales the following week, the world economy was in full swing and the long arm of safety concerns and oil embargoes were still years in the future. This was also the heyday of continent cruising across Europe or North

America at great speeds and in great comfort. The wealthier set might think nothing of jumping into a Ferrari 250 in Milano and driving north to watch the Le Mans event in one weekend. It is thus both appropriate and symbolic that one of Italy's great GT cars was born in this time: the Maserati Ghibli.

The Maserati Ghibli was a high performance front-engine coupé built by Maserati between 1967 and 1973. It is a true thoroughbred; undeniably a Grand Touring car of significance, and it was powered by a race bred 4.7-liter engine developing 340 hp. This motor incorporated race-developed technology, such as dry-sump oiling and twin overhead cams per bank, fed by four twin-choke carburetors. Earlier GT cars, such as the Mexico and Quattroporte, used the same basic engine, but it was the Ghibli that put it to its penultimate form.

Maserati began life in the early part of the century by building bespoke racecars and it was not until after World War II that Maserati began to build cars for general public use. The A6G was one of Maserati's first such cars and began the post war focus on touring cars based on race heritage. This continued through the 1950s and Maserati's first real "production" cars that were made in large numbers were the 3500GT (if you want to consider production in the thousands as "large," which was the case for the cottage Italian car industry of the era). This model was produced through the early 1960s and it provided much needed cash flow for new models and more importantly, racing.

By the late 1950s Maserati found its Factory racing efforts increasingly hampered by its shortage of cash and sequentially developed purpose-built racecars for privateers and provided them with unofficial Factory support. Maserati at the time was owned by the Orsi family, whose machine tool business encountered a deal-gone-bad with Argentina. Undaunted by difficult economic conditions in Modena due to these bad deals with the Peronist Argentinian government, Maserati

began pushing into successively more significant production cars by starting to produce road cars by the thousands per year, instead of several hundred per year. Racing continued into the 60s, but began to taper off as the decade waned on. For Maserati, this became the decade of the Gran Turismo and much of its revenues were derived from this source.

By the mid 1960s, the Gran Turismo, or GT, automobile became the cornerstone of Maserati's economic engine. The designation "GT" pays homage to the tradition of the grand tour, and represents abilities to make long-distance, high-speed journeys in both comfort and style. Successful Maserati GT cars of the 1960s included the Mexico, the 3500, the Quattroporte, and without a doubt, the 5000 GT. The 5000 GT was a coach-built car, which directly adopted the 450S motor with good performance results. However, ownership of these cars was restricted more to heads of State, extremely wealthy individuals and anyone else who could

afford to have four hours of service for every hour on the road! The Ghibli in many ways filled the gap between the need for a similar car with a tad more reliability and perhaps less exclusivity.

Technologically, the Ghibli followed a successful line of Maserati racecars and Grand Touring machines alike. Prior to the Ghibli, Maserati had fielded a long list of modern racecars, including the 300S, the "Birdcage," and the inimitable 450S. The latter was powered by a V8, which is a direct predecessor to the later 4.7 and 4.9 motors found in the Ghibli. The newer V8 motors were milder in many ways and had improvements for reliability with, of course, compromise in performance. For those lucky enough to have heard the 450S run in anger, there is not much to compare with it. Its sounds are a deep rumble, tempered with the tease of sound of gear driven cams, and throaty sound of air rushing into the four downdraft Weber carburetors. When I drive my Ghibli, I still hear echoes of these same sounds and this savagery has some-

how remained in a subtle way in the heart of the Ghibli. The 450S's success was so great and its threat to the racing establishment so immense that rule changes on engine displacement essentially removed it from competition.

It is hard to pinpoint exactly what heritage was drawn on for the Ghibli, but many sources point to a combination of the Mexico and 5000 GT for the mechanicals – including engine and suspension. Mechanically, much of the Maserati Mexico and Quattroporte were used as a basis for the Ghibli's mechanical under-pinnings. The motor, ultimately derived from the 450S motor and later 5000 GT versions, was a direct descendant derived from the Mexico and QP, but with displacement of 4.7 liters and a dry sump oiling system. The dry sump oiling system, while race inspired, is surprisingly due to the need for a low hood height rather than anticipated operating conditions.

The car is based on the mechanicals from the Maserati Mexico and the earlier 5000 GT and 450S, by borrowing the

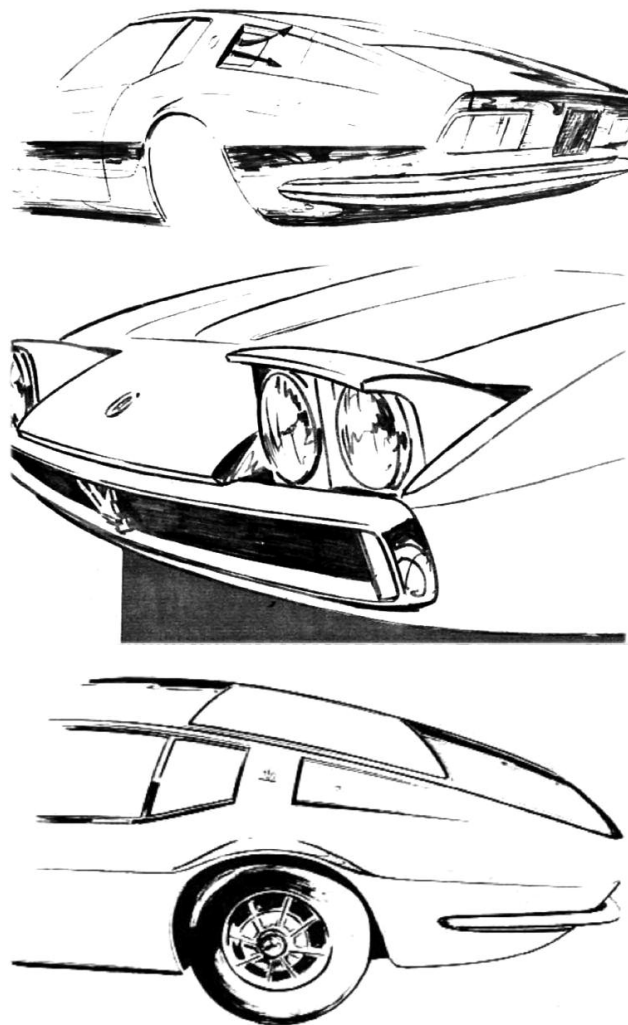


Figure 1. Early design drawings of the Ghibli as penned by Giugiaro show the early thinking of the Ghibli design. Courtesy of the Vintage Exotics Collection.



Figure 2. The author's 1967 Ghibli – originally an Italian market model – shows the clean lines of the first year production Ghibli without safety equipment and extra lights (Courtesy Vintage Exotics Collection).

Mexico chassis and suspension and improving on the motor first put in the great 450S racing machine, and later fitted for the street on the 5000 GT. The Mexico further refined this motor for street use and the Ghibli used a derivative of the Mexico V8 in 4.7-liter form. Differing from the Mexico, the Ghibli V8 had a dry sump oiling system, which was normally associated with racing motors, but in this case was more due to the need for a low and sleek hood. Eliminating the oil sump allowed the

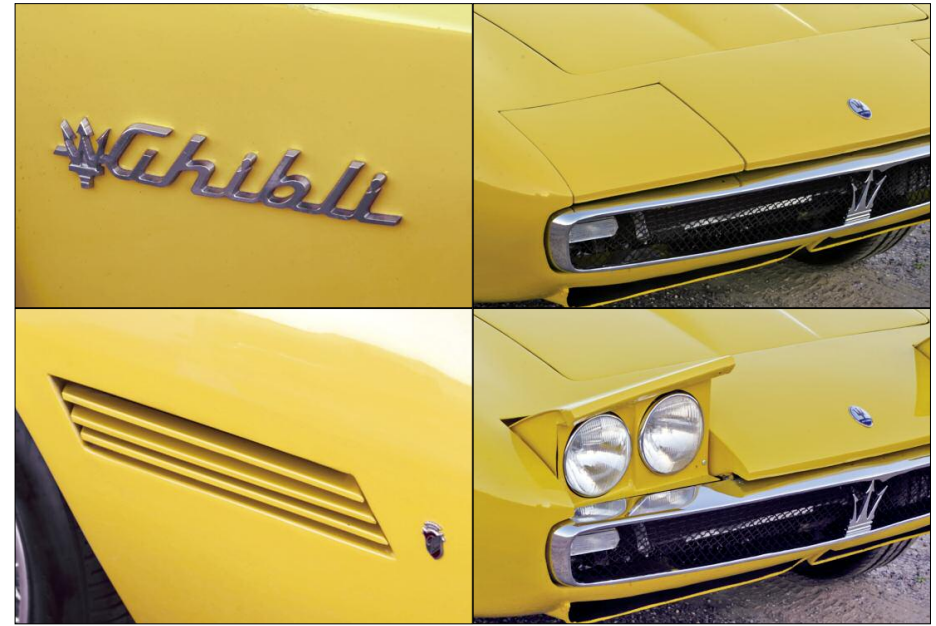
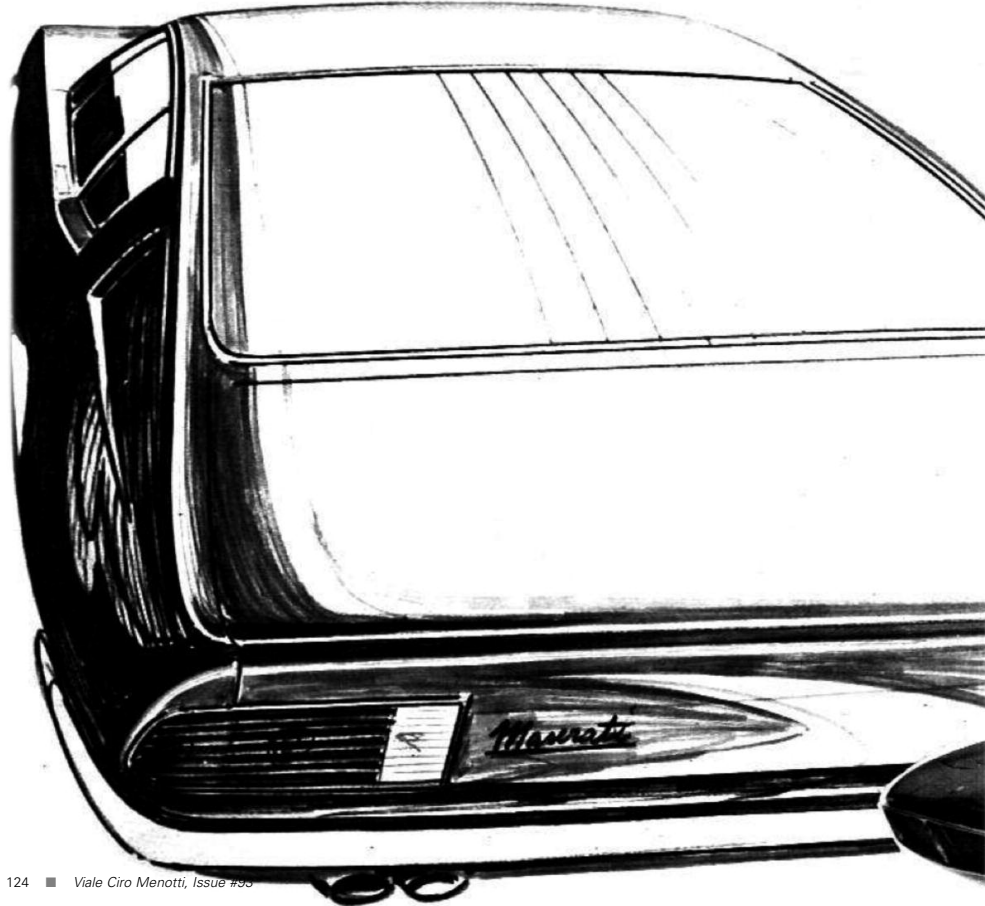
motor height to be reduced by about 100 mm. Even the radiator had to be slanted to accommodate the low hood profile, thus demonstrating the dominance of the product design over engineering necessity.

So much about the Ghibli styling was new and innovative, that apart from the obvious mechanical inheritance, there was little precedence to draw on at Maserati to inspire this kind of style. For the styling, a bright and strong new force in the design field was brought

into the fold to develop the revolutionary and fresh Ghibli form – Giorgetto Giugiaro, the famed Italian designer. The Tipo 115, in Factory parlance, began as his brainchild and was named after a warm wind in North Africa, as the Maserati tradition dictated.

Giugiaro was a relatively young 27-year-old designer when he joined Ghia in 1965 after leaving Bertone. At the time, Ghia was going through a number of ownership changes and was widely believed to be on the verge of closing

Figure 3. Early drawings show quarter view of Ghibli with surprising inclusion of rear window defroster lines showing. Drawing courtesy of Vintage Exotics Collection.



when Giugiaro joined them as the head of design. Here, Giugiaro penned the Ghibli, which many people believe to be his lifetime masterpiece. Many observers of the 60s GT automobile industry believe that the Ghibli was “the best of the best” in many ways. In terms of style, it is perhaps one of the most beautiful cars ever made, with a form that seems to imitate the wind that it splits as it flies down the Autostrada. The Ghibli’s form is a delicate balance of sex appeal, brutish masculinity, and a faint sense of feminine balance. Some 42 years after the Ghibli was first penned, it is still considered one of the most beautiful cars ever made. Giugiaro is quoted as saying, “The Ghibli is a symbol of outrageous hedonism, the result of total creative freedom. I finally got one, but not until my 60th birthday. ” The Ghibli was much emulated in later models by other manufacturers, but none of them struck this balance in the same way.

Its technological prowess was first in class, with a front “mid-engine” design enabling the low sloping hood by the shorter dry sump V8, and power transmitted through a 5-speed gearbox. It is important to remember the era – the 1960s – and how advanced much of this was for the time. The suspension was based on standard double A-arms in the front, and a live axle and leaf springs at the rear coupled with leaf springs. Together, this car is capable of 160+ MPH top speed, impressive cornering capability, and brisk acceleration that would give many cars of the day a good run.

The Ghibli, as these early concept design drawings show, was designed to be low, sleek and well rounded. Looking down the hood of the Ghibli shows an aggressive and beautiful low profile that looks as good from the inside as it does as seen by the passerby. Normally hidden pop-up headlight

assemblies also compliment the low front end. These blend well into the small grill opening, which gracefully leads the Ghibli slicing into the wind. Also note the vertical turn indicator lights that were used on the prototype, but did not make it into production, which were horizontally mounted.

The profile of the Ghibli shows how form follows function, and the remainder of the design is both aerodynamic and continues the theme of being low and long. The Ghibli is a long car for the times and the GT theme. The long wheelbase is complimented by its low overall height. The rear quarter panels of the car incorporate air vents flared into the panel and adding design interest to the car with the addition of the fuel doors and Maserati emblems. The rear of the car gradually slopes down to a large and nearly horizontal window. It is interesting to note that the window heater lines in the Ghibli are vertical



Figure 4. The original Ghibli prototype as displayed at the 1966 Turin auto show as its public debut. The response to this original showing was overwhelming for Maserati. What was believed to be a limited production car received so many orders stapled with checks that increased production had to be planned.

rather than the traditional horizontal. This can also be seen in the early design drawings and this small touch seems to further the overall appearance of low and long. The rear of the Ghibli abruptly descends vertically, but nicely turns somewhat forward, seeming to imply that every part of this car wants to be on the move forward. This continues with the outer panels wrapping down under the rear bumper to finish far forward of the most rearward point of the car.

The Ghibli has a fantastic visual look and sold itself on appearance alone. Giugiaro himself described the Ghibli as having "a very striking, long, flat hood, full-width radiator grille, pop-up headlights, a sharply angled windscreen, wide squat sidelights that ended in a vertical segment, and very clean flanks – even though the coach-line did have lots of movement to it. The rear end was high for aerodynamic efficiency, as well as functional reasons (the two fuel tanks lie behind the rear axle and have a very raised neck)."

Over the years, the Ghibli had many famous owners. Henry Ford II was so impressed by the Ghibli that he reportedly approached the Orsi family with an offer to buy the company from them. Other notable owners included Frank

Sinatra, Milton Berle, Wilt Chamberlain, Sammy Davis Junior, Peter Sellers and Jean-Paul Belmondo. Certainly there are other famous owners of these cars, but even this short list shows that this car was considered as a "A-list" car to own in its day.

Early Concept Cars and Turin Prototype

The eventual implementation of the Ghibli in production is remarkably unchanged from the original design penned by Giugiaro. Many subtle elements that can be seen in the initial design are changed, due to either style considerations or practicality of design

and manufacturing. What is unexpected from early drawings of the Ghibli is how little the design actually evolved from the initial sketches to the final design. Notable changes include the style, but not form of the rear tail lights, the orientation of the front marker lights, the lack of air vents in the hood some of the locations of emblems, and side marker lights. The production models eventually had a different trunk (early wrap-down trunks like the prototype are limited to the first 130 production models), vents in the hood, side vents behind the front wheels and emblems and side marker lights on the front and rear side flanks of the cars.



Figure 5. An early Ghibli studio form that appears to be made from clay used to evaluate the design concept and plan for production (Courtesy of Maserati North America).

Maserati Ghibli from 1967 to 1973

The Maserati Ghibli was a high performance front-engine coupé built by Maserati between 1967 and 1973. A true thoroughbred GT, it was powered by a 4.7-liter engine developing 315 hp. The dry-sump twin cam V8 engine with four twin-choke carburetors differed from that used in the Mexico and Quattroporte of the same period, which followed a wet sump design. The model was originally devised as a two-seater, despite being 4.69 meters long and having a wheelbase of 2.55 meters. The Ghibli did become a 2+2 for production.

The chassis featured simple, yet effective cart-sprung rear sus-

pension, also found on the Quattroporte II which was introduced at the same time. The project was principally overseen by Eng. Alfieri and it was unveiled at the Turin Motor Show in late 1966 on the Ghia stand, with deliveries starting in March of the following year. The steel bodies (with an alloy hood) were manufactured by Vignale.

The Ghibli had a fantastic asset in its striking visual appearance, and it could easily have sold itself based on looks alone. Its dramatic styling was the work of a young Giorgetto Giugiaro, at that time working for the Ghia studio in Turin.

MODEL	Ghibli
MASERATI INTERNAL CODE	Tipo AM115
PRODUCTION START	1967
NUMBER PRODUCED	1170 (all coupés combined including Ghibli SS)
IGNITION	single-plug Bosch distributor with automatic advance, coil ignition (via a transistor from 1970)
LUBRICATION	two concentric gear pumps (pressure and scavenge)
TRANSMISSION	5-speed + reverse ZF (automatic to order), self-locking differential
REDUCTION	1:3.31
GEAR RATIOS	I=2.97; II=1.92; III=1.34; IV=1; V=0.9; R= 3.31
CHASSIS	tubular steel ladder-frame platform chassis
FRONT SUSPENSION	double wishbones, coil springs, telescopic dampers and anti-roll bar
REAR SUSPENSION	leaf springs, hydraulic telescopic dampers and anti-roll bar
BRAKES	ventilated discs, servo-assisted, hydraulic, independent dual circuit
BRAKES FRONT	294 mm discs
BRAKES REAR	272 mm discs
STEERING	worm and sector (power assistance to order)
COOLING SYSTEM	water-cooled
LENGTH	185.04 inches (4,700 mm)
WIDTH	70.47 inches (1,790 mm)
HEIGHT	45.67 inches (1,160 mm)
WHEELBASE	100.39 inches (2,550 mm)
FRONT TRACK	56.6 inches (1,440 mm)
REAR TRACK	55.9 inches (1,420 mm)
DRY WEIGHT	3416 lbs (1,550 Kg)
CURB WEIGHT	3637 lbs (1,650 Kg)
TIRES	front/rear Pirelli HS 205 VR 15 (215 VR 15 from 1972)
WHEELS	magnesium alloy, 7.50 x 15 (wire wheels to order)
TOP SPEED	164.5 mph (265 kmh)
BODYWORK	2-door, 2+2 coupé
FUEL TANK	two tanks, 100 liters (21 Imperial Gallons / 26 US gallons)
PRODUCTION DATES	1969-1973
ENGINE	90° V8, light alloy casting with pressed-in cylinder liners in special cast iron
BORE AND STROKE	93.9x85 mm
TOTAL DISPLACEMENT	4,709 cc
DISPLACEMENTS (UNITARY)	588.62 cc
COMPRESSION RATIO	8.5:1
MAXIMUM POWER	310 bhp at 6,000 rpm
MAXIMUM TORQUE	47 Kgm (341 lbs/ft) at 3,500 rpm
TIMING GEAR	two valves per cylinder, two chain-driven overhead camshafts per cylinder bank
FUEL FEED	naturally aspirated, four vertical twin Weber 40 DCFN/5 carburetors (42 DCFN/9 from 1969)
FUEL & LUBRICANT	N.O. 98/100 RM

The new Ghibli project was principally overseen by Engineer Alfieri, and it was unveiled at the Turin Motor Show in late 1966 on the Ghia stand. At this show, deliveries were to start in March of the following year, so the production of the bodies and mechanical elements were fairly mature by the time of the show. The steel bodies (with an occasional alloy hood or trunk) were manufactured by Carrozzeria Ghia, although several sources (including Maserati's web site) state that Vignale assisted in production in some capacity.

Judging by the construction of the Ghibli, the early bodies were coach-built and showed the expected quality of build associated with hand-crafted and stitched body panels. Many of the early Ghiblis show hammer marks on the hoods, trunks and lower portions of the bodies, not readily seen from "street level." Later Ghiblis show marked improvements in the body workmanship, as the details of the manufacturing and processes assumedly improved with experience and number. Many of the surviving Ghiblis have been restored to the point of being very straight, and the crafts-

manship of the bodies is far better now than when they left the Factory.

The early Ghiblis were very rough machines. The history on how the bodies were made, what processes were employed, and when changes occurred are not entirely clear. However, the very early bodies appear to be mostly coach built, while the later bodies – 1969 and later – appear more refined, perhaps as a result of more stamping operations for panels and improved assembly processes. I personally refer to the early bodies (the first approximately 130 cars) as the "early production bodies," as they closely resemble the original prototype shown in Geneva. I also refer to the 1968 and later bodies as "production bodies" since they show serious signs of production improvements.

Maserati changed a lot of the features on the cars – especially during the first year of production. The very earliest cars had some unique features not found on the later cars, and these included both mechanical and cosmetic elements. To further the confusion, the numbering on the cars has a haphazard element to it with cars numbered later having earlier features and

differing engine sizes than one would expect. Maserati apparently had logical reasons for doing this, ranging from the way the cars were ordered, to using parts on hand to finish a production run, to avoiding ever increasing US market import requirements.

According to sources at the Maserati Factory and other collectors with experience with these cars, the bodies were assembled and painted at the Carrozzeria and delivered to Maserati ready for assembly. Many of the cars' bodies remained at the Factory until an order was received asking for a particular color. This explains the fact that many of the early bodies with the wrap down trunks were mixed in with later production cars. This author's 1967 Ghibli, for example, is numbered AM1115-276 – was assembled in March 1968 according to Factory records, included an early (and rough) wrap down trunk body, but had electrical and mechanical components from later 1968 models. Maserati was also known to "fudge" the year of manufacture, as was the case with this car, to avoid emissions requirements and make customer orders.



Figure 6. The first Ghibli prototype with Bertochi, the official Maserati "test driver" holding the door open. (Source: Road and Track 1967)

Prototype

The first, and I believe only, pre-production Ghibli prototype was unveiled in Geneva in late 1966. This car was, unlike many prototypes of the day, a working model. It was used later in the year for demonstrations to the press and for engineering development of the production models. Road and Track was given a ride in this vehicle in the early in 1967. This road test and the associated photography give us a feel for the early Ghibli prototype.

This car was finished in a bronze exterior with a light gray leather interior and charcoal carpets. While this color combination might be controversial in some quarters, the end result was not. This car was low slung and was, in fact, a bit lower than later production models. What is most striking to me, and many other observers, is how close this prototype is to the actual early production models and this speaks well to its true status as a production prototype.

Despite this high similarity, there were some unique features of this car that did not make it into the production car. One of the notable unique features is the vertical front marker lights that fit into the edge of the bumpers. Production models had conventional (and likely cheaper) Carello lights that mounted to the upper or lower parts of the bumper, instead of being specially made for the Ghibli bumper. Another interesting feature of the prototype was the location of the door entry mechanisms and the apparent lack of exterior door handles. Examination of the photos and Factory sources indicate that the "door handles" were located at the top of the doors and resemble more the later Corvette production door handles of the 70s that are integrated into a pocket in the door. It is not known why these were installed on the prototype. A 1966 Road and Track article describes these vertical "Corvette-like" door handles as a design issue. Production Ghiblis used a more common handle



Figure 7. This side shot of the Ghibli prototype shows the lack of exterior production door handles and the early drop down trunk. The exhaust, bumpers and side trim are much as they were on early production models. (Source: Road and Track 1966)



Figure 8. Front shot of the Ghibli with the lights lifted. The early bodies, like the prototype, lacked additional air inlets for the radiator. (Source: Road and Track 1967)

that was also used on other Italian makes, including the Iso. Perhaps it was simply a cost and availability issue with Maserati deciding to implement the more commonly available handles instead of these prototype systems.

The prototype showed a wrap down trunk which was carried over to approximately the first 130 models built. Later production models had a cleaner trunk lip that was about one inch tall and removed the "head banger" reputation of these early models. A wrap down trunk is a tell tale sign that the car is an

early model and was built in the very earliest production run of bodies – or as I refer to them "early production bodies." One source (unconfirmed) stated that Maserati never thought beyond the first 100 cars when it was shown and the unexpected rush of orders for the new car caused them to expand the original hand built production run to 130 cars and plan for a larger production run resulting in the later production bodies.

The prototype and early versions of this car had a single air inlet to the radiator through the grill as can be seen in



Figure 9. Interior shot of the Ghibli prototype. (Source: Road and Track 1967)

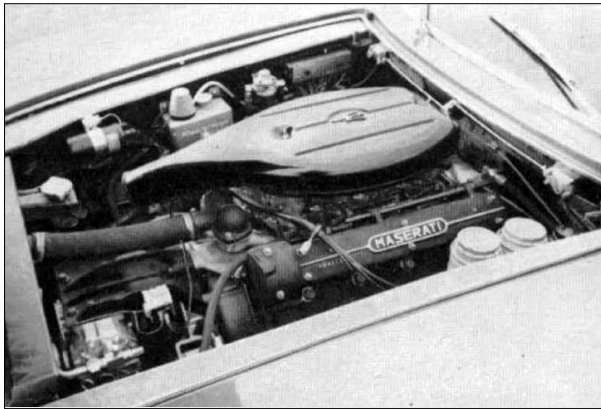


Figure 10. The engine bay of the Ghibli prototype. (Source: Road and Track 1967)

Figure 8. Later models of the early bodies had two additional air vents formed in the sheet metal directly below the grille, adding additional airflow. We can only assume that incidences of overheating at speed have been reported due to this oversight. All production bodies have the air inlet modification. The Factory also retrofitted some of the early cars (such as the author's AM115-276) with these two air inlets.

Another interesting area of difference between the prototype and early cars is the hood. The prototype Ghibli has a pair of air vents in the hood that provide for increased airflow through the radiator and most likely reduce under hood temperatures. They also look great. I have personally seen some of very early cars that do not have these vents and this leads me to believe that many early hoods had this "simplification" to make

production easier. Again, a good assumption is that the hood vents were added later to deal with apparently troublesome airflow issues. On the author's Ghibli 276, it is clear that the hood vents were added to an otherwise flat hood by welding in hammer formed vents into the flat hood panel. Later production hoods appear to be stamped.

Examination of the interior of the prototype Ghibli indicates that overall it is much the same as the early Ghibli cars. The gauge positions and switches appear to be the same as production cars. One interesting variation is the location of the gearshift exit from the center console. Experienced Ghibli owners will notice that the production car had the gearshift exiting further back on the center console. Thus, the apparent position in this car could be due to a different transmission than the production cars, the motor/transmission assembly being mounted further forward than the production models, or the dash assembly being further back in the car. Whatever the reason, there is a notable geometry difference here.

The view of the motor compartment of the prototype also reveals similarity to the production models. Overall, there is much the same equipment – the two brake fluid reservoirs indicating dual hydraulic system brakes, the unique "backwards" York air conditioning compressor, the slanted radiator and conventional ignition. The fuel pressure regulator is mounted further back than the production cars and there is a "mystery box" between the ignition coil and the fuel regulator. Ghibli owners familiar with adjusting the latches on the hood will notice that the hood latches vary from production units and have an interesting center pivot which shows in the parts manuals but is not seen on later cars.

Production Models

All early production Maserati Ghiblis used the standard independent front

Maserati Ghibli SS from 1969 to 1973

In 1969 Maserati launched the Ghibli SS, a sportier version of its flagship coupé with the dry-sump 90° V8 now enlarged to 4.9 liters. The dry sump design had been devised in order to best accommodate the low hood line of Giugiaro's sleek coupé, and was later used for the very same reason on the Khamsin. Horsepower was up to 335 which gave a top speed of 280 kph (175 mph). This turned the Ghibli SS into the fastest Maserati road car in production. Prodigious braking

performance came from the two twin-servo assisted ventilated discs with three pistons per caliper.

The equipment level was worthy of such a thoroughbred GT with adjustable steering column, anti-theft steering lock, leather upholstery, tinted & electric windows, reclining seats with head rests, heated rear windscreen, dashboard clock and even air conditioning all came as standard.

MODEL	Ghibli SS
MASERATI INTERNAL CODE	Tipo AM115/49
PRODUCTION START	1969
NUMBER PRODUCED	1170 (total Ghibli & Ghibli SS production)
IGNITION	single-plug Bosch distributor with automatic advance, coil ignition (transistorised from 1970)
LUBRICATION	two concentric gear pumps (pressure and scavenge)
TRANSMISSION	5-speed + reverse ZF (automatic to order), single dry plate clutch, self-locking differential
REDUCTION	1:3.31
GEAR RATIOS	I=2.97; II=1.92; III=1.34; IV=1; V=0.9; R= 3.31
CHASSIS	tubular steel ladder-frame platform chassis
FRONT SUSPENSION	double wishbones, coil springs, telescopic dampers and anti-roll bar
REAR SUSPENSION	leaf springs, hydraulic telescopic dampers and anti-roll bar
BRAKES	ventilated discs, servo-assisted, hydraulic, independent dual circuit
BRAKES FRONT	294 mm discs
BRAKES REAR	272 mm discs
STEERING	worm and sector (power assistance to order)
COOLING SYSTEM	water-cooled
LENGTH	185 inches (4,690 mm)
WIDTH	70.47 inches (1,790 mm)
HEIGHT	45.67 inches (1,160 mm)
WHEELBASE	100.39 inches (2,550 mm)
FRONT TRACK	56.6 inches (1,440 mm)
REAR TRACK	55.9 inches (1,420 mm)
DRY WEIGHT	3,640 lbs (1,660 kg)
CURB WEIGHT	3,901 lbs (1,770 kg)
TIRES	front/rear Pirelli HS 205 VR 15 (215 VR 15 from 1972)
WHEELS	magnesium alloy, 7.50 x 15 inch (wire wheels to order)
TOP SPEED	285 Km/h (177 mph)
BODYWORK	2-door, 2+2 coupé
FUEL TANK	two tanks, 100 liters (21 Imperial Gallons / 26.5 US gallons)
YEARS OF ACTIVITY	1969-1973
ENGINE	90° V8, light alloy casting with pressed-in cylinder liners in special cast iron
BORE AND STROKE	3.7x3.5 inches (93.9x89 mm)
TOTAL DISPLACEMENT	4,930 cc
DISPLACEMENTS (UNITARY)	616.16 cc
COMPRESSION RATIO	8.5:1
MAXIMUM POWER	335 bhp at 5,500 rpm
MAXIMUM TORQUE	49 Kgm (355.5 lbs/ft) at 4,000 rpm
TIMING GEAR	two valves per cylinder, two chain-driven overhead camshafts per cylinder bank
FUEL FEED	naturally aspirated, four vertical twin Weber 42 DCFN/11 carburetors
FUEL & LUBRICANT	N.O 98/100 RM

suspension employing coil springs, conventional shock absorbers and an anti-roll bar. At the back was a conventional Dana 44 (Salisbury) differential with dual leaf springs, radius rods, conventional Koni shocks and another anti-roll bar. A pair of 12-gallon fuel tanks provided a range of nearly 300 miles. Braking was accomplished by Girling disc brakes, using dual brake boosters as was used on various Sunbeams, Lamborghinis and other European cars. Standard were beautiful Campagnolo magnesium alloy knock-off wheels with Pirelli Cinturato tires. Knock-off Borrani wire wheels were also available as an option and gave the car a beautiful, if not aggressive appearance.

Maserati's proven four overhead camshaft V8 was derived from the old 450S motor. The motor's displacement was 4719 cc, thanks to a bore and stroke of 93.9 x 85 mm, respectively. Compression was 8.5:1 and four Weber 38 DCNL carburetors were fitted to early models. The earliest engines produced 330 bhp at 5500 rpm, but later production engines were fitted with the bigger 40 DCNLs and the motors were capable of running at 6000 rpm and producing 340 bhp. The motor was dry sump oiled and was coupled to a hydraulic clutch. Early models used the dual plate clutch system, which was derived from race experience. While perhaps a superior engineering solution, customers found this combination difficult to drive due to the "on-off" nature of this arrangement. A change

early in the production run to a single plate clutch made the standard ZF five-speed gearbox a bit more civilized. The 4.7-litre V8 provided enough grunt for a 168 mph top speed, 0-60 in 6.4 seconds and 0-100 in 15.2. The standing quarter was possible in 14.5 seconds.

The Ghibli stood at a mere 45-inches high and access to the interior was remarkably good. The interior demonstrated a well laid out set of instruments and switches, but there is still some mystery in decoding the purpose of many of the switches without reading the Owner's Manual. One of the remarkable things that tall people will notice about the Ghibli is the very tall headroom available. Even the tallest people could fit into the Ghibli with no problems. Air conditioning was fitted as standard along with electric windows. Early cars had a small tray and cushions behind the seats that served as small rear seats. My children have rode back in these "seats" and enjoyed the experience immensely.

Several options were available for the production car, including a Borg-Warner automatic transmission, power steering and Borrani wire wheels. Supplementary driving lights could be ordered along with a Blaupunkt AM/FM stereo. European cars were fitted with a 3.31 rear axle ratio and North American models received a slightly livelier 3.54 axle ratio.

In 1969 Maserati launched the Ghibli SS, a sportier version of the coupe with

the V8 now enlarged to 4.9 liters. Horsepower for the SS was up to 335, which gave a top speed of 175 mph. This turned the Ghibli SS into the fastest Maserati road car in production. There are few visual cues to the SS model, other than the SS emblems on the trunk and on the glove box. An additional and notable visual difference was the exhausts where the Factory SS had dual exhaust exits below the rear bumper as opposed to the standard Ghibli driver's side exits.

Factory Spydres

The Maserati Ghibli was offered as a convertible from 1969 until 1972, with the same dry sump 4.7 liter V8 as the coupe. The Spyder was first shown at the Turin Salon in November 1968 and production was underway by early 1969. Some twenty-one examples were completed before the end of that year. The Ghibli Spyder was one of the last projects Giugaro worked on for Ghia in 1967 before setting up his own consultancy - Italdesign. The clean lines that characterized the Coupe were only accentuated by the drop dead gorgeous Spyder. The fabric top folded away neatly underneath a rear deck panel behind the seats and could be raised or lowered in quickly. The gas fillers were relocated to the top of the quarter panels ahead of the trunk lid, but the remainder of the car is much as the Coupe. A Factory hardtop with large windows made the car a practical companion for all seasons, although only between 20 and 25 Ghibli Spydres

were ever sold with it. Many people found the top somewhat unattractive, as it breaks up the otherwise beautiful lines of the Spyder, but its rarity makes it an accessory that is in high demand among collectors today.

The Spyder was also offered in SS form. With only twelve produced, it remains a mystery why so few Ghiblis were ordered in Spyder trim. Production of both these 4.7-liter and 4.9-liter variants continued until late 1972.

Production Numbers

Nominally, the Ghibli numbering followed a systematic development and started at AM115-002 and continued using even numbers only for the Coupes. Motors always had the same number stamped on them, as the chassis and this stamp is located on the top of the block near the back of the heads.

The Spydres had odd numbers and this is a key method to determine if the Maserati Spyder at hand is a conversion or a Factory produced Spyder. It is estimated that approximately 50 Coupes were converted to Spydres. (See chart above.)

Model Year	Chassis Number Range	Number Produced
1967	Coupe: 002 - 182	90 Coupes
1968	Coupe: 184 - 732	274 Coupes
1969	Coupe: 734 - 1432 Spyder: 1001 - 1059	271 Coupes, 29 Spydres
1970	Coupe: 1434- 1884 Spyder: 1061 - 1233	225 Coupes, 64 Spydres
1971	Coupe: 1886 - 2282 Spyder: 1235 - 1299	198 Coupes, 32 Spydres
1972	Coupe: 2284 - 2508	112 Coupes

Variations Between Models

Maserati made a number of modifications during the production of the Ghibli. Many of the variations involved modifications of the mechanical, interior and cosmetic facets of the car. Some of the changes were due to changes from prototype based production techniques and many of the changes were due to changes in safety and emissions requirements.

Tracking such variations and changes are always interesting. Maserati had a policy of assembling cars to order as dictated by customer's needs, as well as the availability of parts on hand. As such, many early cars have different body features (no hood vents, no under grille vents, and wrap down trunks) and numbers of such cars did not always fall

into the first 120 cars, even though it is believed that only 120 of the early bodies were produced. Further, customers would occasionally order items such as enlarged fuel tanks (one such car was owned by Ivan Ruiz - a euro version SS Ghibli numbered AM115/49 1986). The Factory is also known to have installed the larger 4.9L motors into a dozen or so non-SS cars. One such example is number AM115-206, which is an early car, it left the Factory on January 9, 1968 for Germany, had ventilated disks, type 42 wheel hubs, and was fitted with a 4.9 L motor. Factory records record this car as a Ghibli 5000 - which is odd and interesting. Thus, any and all variations of the configurations quoted here are subject to a large uncertainty factor!

Continued on Page 136



Figure 11. The beautiful Maserati Ghibli. This model was also equipped with the optional removable hard top (Courtesy of Ivan Ruiz).



Figure 12. The Ghibli Spyder hardtop. Some consider this a less than desirable addition to the clean lines of the Ghibli but with its rarity, it is still considered a very desirable option to have. (Courtesy of Ivan Ruiz)






 <p>AM115-002 to AM115-202</p> <ul style="list-style-type: none"> • Early production bodies • Smiths gauges • Dual brake boosters (Girling) • Dual front calipers • Wrap down trunk • Heads cast for two plugs per cylinder • Cannister oil filters • 38 DCNL Webers 	 <p>AM115-204 to AM115-232</p> <ul style="list-style-type: none"> • Ventilated disks on brakes • Larger diameter knock off wheel hubs • Under grille air vents • New window lifts • Veglia gauges • Spin off oil filters • 40 DCNL Webers 	 <p>AM115-234 to AM115-416</p> <ul style="list-style-type: none"> • New door locks • New hood locks • New windshield wiper system • Shorter trunk lid (with exceptions such as author's AM115-276 with wrap down trunk) 	 <p>AM115-418 to AM115-676</p> <ul style="list-style-type: none"> • New carburetors (42 DCNF Webers) • Change to new distributor & capacitive discharge ignition • Mods to air conditioning and ventilation systems • Single disk clutch • New panhard rod assembly 	 <p>AM115-678 - AM115-2508</p> <ul style="list-style-type: none"> • Bonaldi brake booster (single) • New crankshaft • Bolt on wheels as standard • New plastic dash vents • New dashboard layout and switches (square) • Padded steering wheel hubs
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Figure 13. Factory changes based on production number. Maserati's numbering system was not always reliable and as such this list should only be considered as a guide. The author's own car is an excellent example with an early body and late mechanicals.

Maserati Ghibli Spyder

from 1969 to 1972

The Maserati Ghibli was offered as a convertible from 1969 until 1972, with the same dry sump 4.7 liter V8 as the coupé. The clean lines that characterized Giugiaro's design were a visual delight, the classic proportions of the front-engine configuration with a long hood and steeply raked windscreen produced this effect. It was strictly a two-seater. The fabric roof folded away neatly underneath a rear deck panel behind the seats and could be raised or lowered in just a matter of minutes. A stunning factory hardtop with large windows made the car a practical companion for all seasons, although only

between 20 and 25 Ghibli Spydery were ever sold with it, making it an accessory that is in high demand among collectors today.

Along with the Simùn prototype, the Ghibli Spyder was one of the last projects Giugiaro worked on for Ghia in 1967 before setting up his own consultancy. In the 4.7 guise the Ghibli Spyder was capable of reaching speeds of 250 kph (156 mph).

MODEL	Ghibli Spyder
MASERATI INTERNAL CODE	Tipo AM115/S
PRODUCTION START	1967
NUMBER PRODUCED	125 (total Ghibli Spyder & Spyder SS production)
IGNITION	single-plug Bosch distributor with automatic advance, coil ignition (via a transistor from 1970)
LUBRICATION	two concentric gear pumps (pressure and scavenge)
TRANSMISSION	5-speed + reverse ZF (automatic to order), self-locking differential
REDUCTION	1:3.31
GEAR RATIOS	I=2.97; II=1.92; III=1.34; IV=1; V=0.9; R= 3.31
CHASSIS	tubular steel ladder-frame platform chassis
FRONT SUSPENSION	double wishbones, coil springs, telescopic dampers and anti-roll bar
REAR SUSPENSION	leaf springs, hydraulic telescopic dampers and anti-roll bar
BRAKES	ventilated discs, servo-assisted, hydraulic, independent dual circuit
BRAKES FRONT	294 mm discs
BRAKES REAR	272 mm discs
STEERING	worm and sector (power assistance to order)
COOLING SYSTEM	water-cooled
LENGTH	185.04 inches (4,700 mm)
WIDTH	70.47 inches (1,790 mm)
HEIGHT	45.67 inches (1,160 mm)
WHEELBASE	100.39 inches (2,550 mm)
FRONT TRACK	56.6 inches (1,440 mm)
REAR TRACK	55.9 inches (1,420 mm)
DRY WEIGHT	3416 lbs (1,550 Kg)
CURB WEIGHT	3637 lbs (1,650 Kg)
TIRES	front/rear Pirelli HS 205 VR 15 (215 VR 15 from 1972)
WHEELS	magnesium alloy, 7.50 x 15 (wire wheels on request)
TOP SPEED	169 mph (272 kmh)
BODYWORK	two-door, two-seater spyder
FUEL TANK	two tanks, 100 liters (21 imperial gallons / 26 US gallons.)
PRODUCTION DATES	1969-1973
ENGINE	90° V8, light alloy casting with pressed-in cylinder liners in special cast iron
BORE AND STROKE	93.9x85 mm
TOTAL DISPLACEMENT	4,709 cc
DISPLACEMENTS (UNITARY)	588.62 cc
COMPRESSION RATIO	8.5:1
MAXIMUM POWER	310 bhp at 6,000 rpm
MAXIMUM TORQUE	47 KgM (341 lbs/ft) at 3,500 rpm
TIMING GEAR	two valves per cylinder, two chain-driven overhead camshafts per cylinder bank
FUEL FEED	naturally aspirated, four vertical twin Weber 40 DCFN/5 carburetors (42 DCFN/9 from 1969)
FUEL & LUBRICANT	N.O 98/100 RM

Maserati Ghibli Spyder SS

1973

Maserati's Ghibli Spyder was launched in 1969, the same year the 4.9 engine was introduced on the coupé. The new power unit was immediately available on the Spyder and the cars that were fitted with it were identified as the Ghibli Spyder SS. With 335 hp and a 270 kph top speed (169 mph) to match its stunning looks it was one of the most desirable production cars in the world at that time. It was also one of the most expensive. Of just 125 total Ghibli Spydery sold in the five years that the model was available, only a fifth were to SS spec – which today makes it a universally recognized and

much sought after classic, to such an extent that more than a few coupés have been transformed into Spydery through the years.

As on the coupé, an automatic gearbox could be fitted upon request and a significant number of Ghiblis were sold with it, as the United States was always the model's main market. At the Turin motor show in late 1970 minor changes were introduced to the Ghibli model lineup, mainly involving the headlights, dashboard and headrests.

MODEL	Ghibli Spyder SS
MASERATI INTERNAL CODE	Tipo AM115.S/49
PRODUCTION START	1973
NUMBER PRODUCED	125 (total Ghibli Spyder and Spyder SS production)
IGNITION	single-plug Bosch distributor with automatic advance, coil ignition (via a transistor from 1970)
LUBRICATION	two concentric gear pumps (pressure and scavenge)
TRANSMISSION	5-speed + reverse ZF (automatic to order), self-locking differential
REDUCTION	1:3.31
GEAR RATIOS	I=2.97; II=1.92; III=1.34; IV=1; V=0.9; R= 3.31
CHASSIS	tubular steel ladder-frame platform chassis
FRONT SUSPENSION	double wishbones, coil springs, telescopic dampers and anti-roll bar
REAR SUSPENSION	leaf springs, hydraulic telescopic dampers and anti-roll bar
BRAKES	ventilated discs, servo-assisted, hydraulic, independent dual circuit
BRAKES FRONT	294 mm discs
BRAKES REAR	272 mm discs
STEERING	worm and sector (power assistance to order)
COOLING SYSTEM	water-cooled
LENGTH	185.04 inches (4,700 mm)
WIDTH	70.47 inches (1,790 mm)
HEIGHT	45.67 inches (1,160 mm)
WHEELBASE	100.39 inches (2,550 mm)
FRONT TRACK	56.6 inches (1,440 mm)
REAR TRACK	55.9 inches (1,420 mm)
DRY WEIGHT	3416 lbs (1,550 Kg)
CURB WEIGHT	3637 lbs (1,650 Kg)
TIRES	front/rear Pirelli HS 205 VR 15 (215 VR 15 from 1972)
WHEELS	magnesium alloy, 7.50 x 15 (wire wheels to order)
TOP SPEED	174 mph (280 kmh)
BODYWORK	two-door, two-seater spyder
FUEL TANK	two tanks, 100 liters (21 Imperial gallons / 26 US gallons)
PRODUCTION DATES	1969-1973
ENGINE	90° V8, light alloy casting with pressed-in cylinder liners in special cast iron
BORE AND STROKE	93.9x89 mm
TOTAL DISPLACEMENT	4,930 cc
DISPLACEMENTS (UNITARY)	616.16 cc
COMPRESSION RATIO	8.5:1
MAXIMUM POWER	335 bhp at 5,500 rpm
MAXIMUM TORQUE	49 KgM (355.5 lbs/ft) at 4,000 rpm
TIMING GEAR	two valves per cylinder, two chain-driven overhead camshafts per cylinder bank
FUEL FEED	naturally aspirated, four vertical twin Weber 42 DCFN/11 carburetors
FUEL & LUBRICANT	N.O 98/100 RM

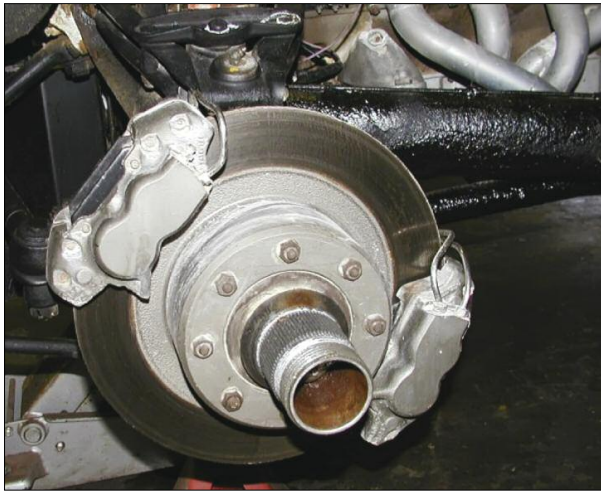


Figure 14. Image of the early dual brake caliper setup. Courtesy of Ivan Ruiz.

Brakes

All Ghiblis had four-wheel disk brakes with power assist, but there were three significant variations. The very earliest cars used non-ventilated disks and the front brakes had dual calipers. Less than 100 cars had this unique setup.

Early cars also had the dual hydraulic system with dual brake boosters. These Girling units were common to Lamborghinis, Sunbeams and Volvos of the era and operated independently of each other. Later models used a more conventional Bonaldi booster mounted to the master cylinder.

Interior and Instrumentation

The early cars through 1969, and many euro versions after this date, are considered to have the most graceful interior and dash setup. These cars were equipped with Smiths gauges and toggle switches like many other Italian cars of the era. They also had the solid cast aluminum vent covers for heating and ventilation. In 1968, Maserati switched the gauges to a more modern Veglia gauge. US bound cars were later fitted in late 1969 and 1970 with less attractive and less reliable rocker switches. Many of the later interiors had padded steering wheels in the interest of safety. It is almost universally agreed that the early dash and interior is more attractive and desired.

The remainder of the Ghibli interior remained much the same as the later models outside of the dashboard. Many different interior colors were available including, but not limited to: black, cream, red, tobacco, tan and blue. The dashboards are all covered by Alcantara and always in black, as can be seen in the associated images. The headliner was also a single color, which would best be described as a light tan color.

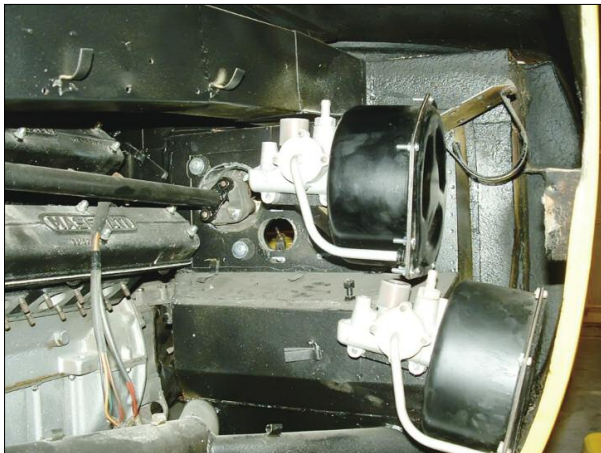


Figure 15. Dual brake boosters used on early cars. These systems were located behind the driver's side wheel as shown. Courtesy of the Vintage Exotics Collection.



Figure 16. Early Ghibli dash with rocker switches and steering wheel "not safe at any speed." Courtesy of Ivan Ruiz.



Figure 17. Later dash board configuration (actually from a SS model) with rocker switches and padded steering wheel. Courtesy of Ivan Ruiz.



Figure 18. This very early Ghibli has several unique features including a ventless hood, no air inlet vents under the grille, and no marker lights. Courtesy of the Vintage Exotics Collection.

Factory Ordered Options

There are no rules in Maserati collection except that any combination of production number, year and option is possible and it may indeed be genuinely a Factory option. The bottom line is that Maserati often tailored the many cars that it produced for its owners. The following is a list of options that have been noted on some cars and are believed to be Factory installed: enlarged fuel tanks, 4.9 liter motors in non-SS cars, later mechanicals installed in early bodies and registered as an early car, special paint and interior colors, custom tail-lights featuring three round Ferrari-like lenses and non-standard wheels (one example with Ferrari like Chromodora wheels is known). I am sure that there are other examples that have been noted by other collectors and the possibilities are numerous!

Colors

Maserati has had a standard set of exterior colors that they offered. The following colors were noted from an early Factory note translated from Italian by the author:

Table 1. Colors available on the Ghibli

Bianco Polo Park	Soft White
Verde Germoglio	Pea Green
Giallo Fly	Fly Yellow
Azzuro	Bright Blue
Bleu Montecarlo	Navy Blue
Rosso Fuoco	Bright Red
Nero	Black
Argento Auteuil	Silver
Grigio Ferro Metallic	Metallic Charcoal Grey
Oro Longchamps	Metallic Brown
Rame Metallic	Bronze
Blue Sera Metallic	Metallic Dark Blue
Bleu Ischia Metallic	Metallic Medium Blue
Bleu Metallic	Metallic Light Blue
Celeste Chiaro Metallic	Light Sky Blue
Berde Pino Metallic	Metallic Dark green
Verde Medio Metallic	Metallic Light Green
Marrone Metallic	Brown metallic
Rosso Rubino	Maroon Metallic



Figure 19. Comparison of two differing trunks from the early production bodies and the later production series. The latter is generally accepted as more practical if that word applies!

Changes to Body

Apart from the obvious difference with the Spyder and Coupe, the bodies remained more or less similar in appearance. The early cars showed the majority of unique body features and this is possibly due to the hand built nature of the early cars. The variations on the early bodies included: hood, under grille air inlets, and the trunk.

A few very early cars appear without the notable hood vents. I have personally noted three different cars, all with chassis numbers less than 100, with "ventless" hoods. Other than ease of manufacture, there is no apparent reason for this

deletion. Even the very first prototype had this feature so the deletion may have been an attempt at design simplification which was later added back into the production run because of functionality.

Other changes to the exterior of the car had to do with bumper over-riders and marker lights. Starting in approximately 1969, bumperettes were added to the Ghibli that were mostly graceful. Later models in 1971 and 1972 had much heavier looking bumper riders as seen in Figure 20. These were due to US bumper impact ratings and became rather unsightly. Other deviations and changes are the front marker lights. Very early cars had the front turn signal lamps mounted on the lower portion of the front bumper. Additionally, large marker lights were added on post 1971 cars for the same US safety regulations.



Figure 20. A later SS model with bumper over-riders and changes in marker lights. Many euro versions of these later cars did not have the unsightly additions added in response to US safety regulations.



Figure 21. From bumper light locations. Early versions are on the left. For 1968 through about 1970, the Carello lights were moved to the top of the grille opening. Later cars had a cheaper looking plastic light mounted on the bottom of the grille.



Figure 22. Early V8 with the DCNL carburetors. The Maseratis seem to have as much beauty under the hood as outside. Courtesy of Ivan Ruiz.

Motor

The Ghibli motor stayed mostly unchanged throughout the production run. With the exception of the larger 4.9-liter SS motor, the Ghibli had the same 4.7-liter V8. The early models had the 38 DCNL and 40 DCNL Weber carburetors, while the later motors switched to the DCNF carburetors. Visually, these systems were the same until later versions of the car had a different air filter that is often referred to as the "box." In approximately 1969, the Ghibli received a much-needed upgrade in its ignition system – from a standard dual point system to a Capacitive Discharge ignition. This solved a troublesome cold start problem with the motor, as well as known incidences of plug fouling. Early V8s also had an old-fashioned cartridge oil filter system that had a heat exchanger built into it to serve as an oil cooler. This



Figure 23. Variations on Ghibli wheels including the most common Campagnolos, the Borrani wire wheels, the bolt-on wire wheels and the late Campagnolo wheels.

system circulated coolant through the oil filter to maintain consistent oil temperatures. Conventional "throw away" oil filters, along with an externally mounted oil cooler, later replaced this system. Many owners report the old heat exchanger system is prone to leaking engine coolant into the oil and vice versa.

Wheels

The Ghibli came with four wheel variations. The early models were all classic knock-off hub designs and had a very clean outward appearance. Newer models switched to a more classic lug/nut design and particularly on wire wheels were less graceful. The Ghibli was offered with the Campagnolo Magnesium star wheels as standard with Borrani wire wheels as optional. Later models continued with wire wheels and the bolt-on Campagnolo wheels, but also had an upgraded Campagnolo wheel mounted to only the very latest cars.

The Last Ghibli

Over its design life, the Ghibli did not vary greatly in overall function. Many technical improvements were made to the car to fix problems that became known to the Factory, and other changes were made in the name of regulation. This was true mostly of the US-bound cars. The European market cars remained truer to the initial vision and are often considered the highly desirable models. In the end, nearly 1200 Ghiblis were made and many have survived.

How many have survived through the years? It's hard to know exactly. It is clear that the very early cars often suffered from engine fires and met their eventual demise in this way. Others had

their motors replaced by Chevy V-8s (yes, I know) and eventually died of neglect. Yet others were wrecked and met their demise by the crusher. Rust was also a well-known malady of these cars, as the hand-made nature of the cars was not conducive to long life.

In the end, the Ghibli went through much the same pattern as other unloved exotics. Maintenance costs were high due to specialty mechanics and parts costs, and after a certain amount of depreciation, the cars no longer justified keeping in the minds of many original buyers. The lower priced cars (many Ghiblis could be had for less than \$10,000 USD a mere 15 years ago) were bought by people without the money to maintain them.

The market for the Ghibli has clearly turned, and with it many cars are now being restored and being done well. This has also helped by increasing availability of many parts for the cars. While it's only a guess, there are likely some 500-600 Ghiblis remaining worldwide, with about half of them still on the road on any regular basis. I expect that the number will continue to decline, but I would imagine this decline to slow, as more and more people find this highly desirable car worthy of the cost of ownership. ■

"The good, the bad and the donkey.(Giugiaro at 70)(Giorgetto Giugiaro automotive engineer shares his wish for designing cars)." Automotive News Europe. Crain Communications, Inc. 2008. HighBeam Research. 24 May. 2009



Figure 24. One of the very first Ghibli Coupes and very last Ghibli Coupes. Largely unchanged, this car transitioned from the heyday of the 1960s to the emissions and safety laden concerns of the 1970s.

