



YANKEE MUSCLES IN ITALIAN SUITS



JOSEPH LOWREY

The Idea Factories Tailor a New Crop

BY JOSEPH LOWREY

PURELY AS A car manufacturing country, Italy could hardly justify holding an International Auto Show. For many years past, the Fiat Company has accounted for more than 80% of the country's car production, so one large showroom could cover the really commercial exhibits.

Nevertheless, early in each winter, one can find top brass from General Motors and other of the world's lead-

ing car builders at Torino, strolling about the annual *Salone dell'Automobile*. The reason is that a series of relatively small coachbuilding and styling organizations in Milano and Torino have become idea factories for the entire automotive world. If there were fewer fundamentally new shapes to be seen at this winter's exhibition than on some other recent occasions, there was a most notable increase in the extent

to which "dream cars" had been built around American horsepower.

However much individual poverty there may still be in Italy, Torino, as the old capital of Piedmont, is a city with a superb air of permanence and of communal wealth. Its main streets are paved with giant slabs of hand-cut marble, as are the sidewalks. Set in a green park overlooking the River Po, the finely vaulted reinforced-concrete halls of the auto show building have their own polished marble floors, swept continuously by a white-coated staff. Stylish surroundings which blend ultra-modern with medieval architecture seem to provide designers with a stimulus which is lacking in more ordinary industrial towns.

Of the famous Italian coachbuilding

companies, Ghia has the closest links with America. Three of the five exhibits on his stand at the recent *Salone* were built around modified American V-8 engines, the other two being a smaller car with a British Ford engine and a Bugatti re-bodied for an American buyer. Past links with Chrysler, for which Corporation Ghia manufactured the limited series of turbine car bodies and various other special vehicles, now seem to be weakening as more use is made of power by Ford.

THERE WAS, however, a new Ghia 450/SS Spyder 2+2 seat sports car, in small scale production and based upon easy-to-service mechanical parts from the 235-bhp Barracuda S. This tubular-chassis open car of 98-in. wheelbase is very simple indeed in its rounded exterior form, headlamps being buried within the radiator air intake. Exterior door handles comprise merely pushbuttons level with the body surface, plus fingertip recesses to let a door be pulled open easily.

Also simple in its form, but very much more angular and wedge-shaped, is Ghia's new 2-seat converti-

ble body on a Shelby-American Cobra 427 chassis. Large-area sloping covers streamline two of the rectangular headlamps which have gained much favor in Europe. Radiator cooling air for the Ford V-8 engine is all taken in below the front bumper. Inside the 2-seat body, European-style leather covers almost every possible surface, with the leather-covered instrument panel curved so that both tachometer and speedometer dials exactly face the driver. Face-level air vents are placed centrally above the console on which minor switches and instruments are mounted.

Most glamorous car of the Ghia display was a model of very mixed design ancestry, shown in mechanically incomplete form as the Ghia-de Tomaso and intended for such 1966 long-distance sports car races as those at Daytona, Le Mans and Sebring. Far below the surface of this rear-engined, 2-seater, there is a Ford 289-cu. in. cylinder block and a few other recognizable American components, but this is a very specialized lightweight vehicle indeed. Ultra-low bodywork of plastic and fiberglass is dominated by fenders

which enclose wide Goodyear racing tires. The body is carried on a short, box-section, backbone chassis which uses the engine and transaxle castings as structural elements, pivoting rear suspension linkages on the latter. The Ford engine is completely re-worked, not merely with aluminum cylinder heads providing straight downdraft ports from four twin-barrel Weber carburetors, but also with bowl-in-piston combustion chambers dimensioned for a 12.75:1 compression ratio below flat-faced cylinder heads. A longer-stroke crankshaft gives 292 cu. in. displacement with stock cylinder bore. Dry sump lubrication permits lower mounting of the engine. As exhibited, the 5-speed transaxle leaves driveshaft universal joints to absorb a surprisingly large difference of height between a limited-slip differential and the rear hubs.

NEATLY ANGULAR sports sedan bodywork by Fissore on the British TVR chassis already has been seen publicly. A multi-tubular frame accommodates a Ford Cobra engine. Entirely new is the car which Osi de-



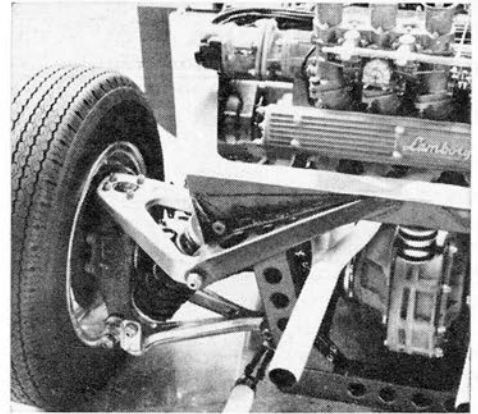
GAUGES face driver amid leather luxury in the Ghia 427 Cobra.



WEDGE-SHAPED angularity is apparent in the Ghia construction of this 2-seat convertible on a Shelby-American 427 Cobra chassis.



FROM LAMBORGHINI comes a GT prototype car featuring a 244-cu. in. V-12 engine mounted transversely just ahead of the rear wheels.



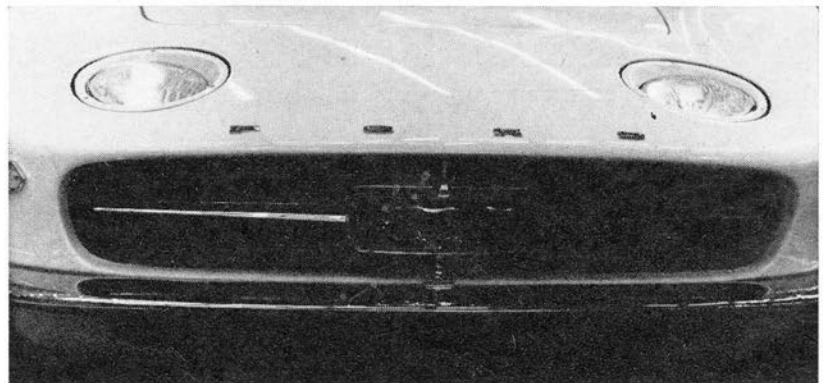
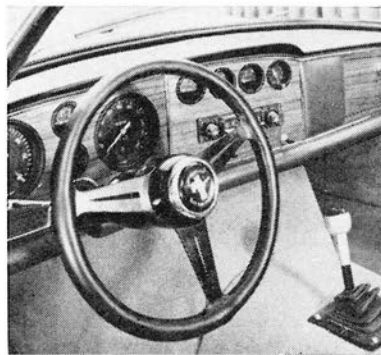
V-12 DEVELOPS 430 bhp at 8000 rpm and top speed of 198 mph.

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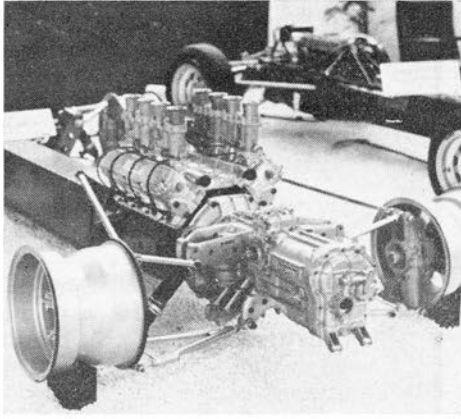
scribes as a Ford Mustang, only the engine, clutch, transmission and galloping horse emblem being identifiable with Detroit's design. Osi has expanded rapidly in recent years as assembler and builder of coachwork for other car companies, and for this so-called Mustang has designed an entirely new steel tube chassis of 94.5-in. wheelbase with 55-in. tread. Rear wheel suspension is independent by coil springs and pairs of transverse links, with similar arrangements using light-alloy arms at the front. Two-door hardtop bodywork is molded in fiberglass and plastics, this determining the planned production rate of two cars per day. The two headlamps hinge forward from the sloping nose when required. Not extremely low, with a roofline 47.5 in. above the road, this front-engined car is equipped for street use rather than solely for racing. It features very large cooling air ducts to the rear disc brakes, placed inboard on the sprung differential casing, as well as to the front pair. Once again, the Osi Mustang is a prototype, requiring additional testing before production starts this spring.

VERY MUCH in production, the Chevrolet-engined Iso Rivolta was too familiar an exhibit to arouse great interest on the Bertone coachwork stand. Much more glamorous and a less familiar sight than the 4-seat sedan, the Iso Grifo 2-seater also is no longer a novelty.

Though this report is concerned mainly with American-powered cars, a new Lamborghini V-12 chassis is too interesting and too comparable with the V-8 cars on other stands to escape mention. This tractor factory has



ENGINE, CLUTCH, transmission and horse emblem are all that remain of the original Ford Mustang after a session with the fiberglass and plastics craftsmen at Osi. Production is set at two units per day.



TRANSAXLE castings are chassis elements in de Tomaso design.



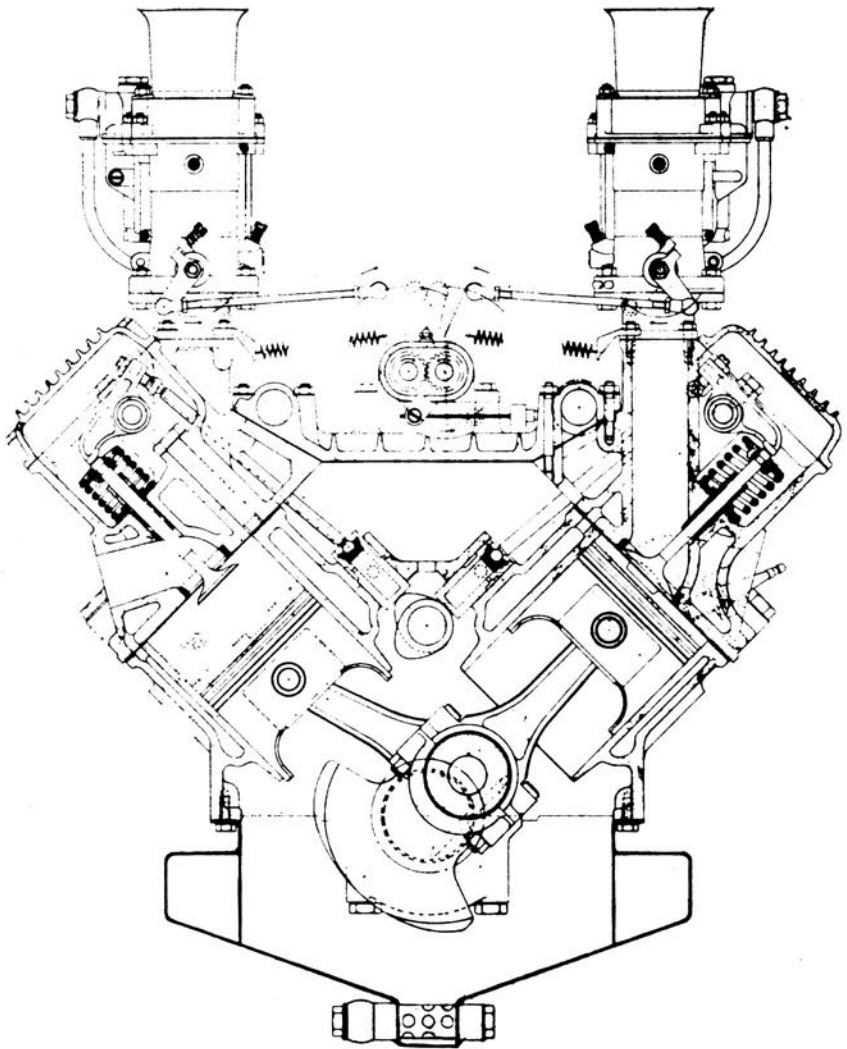
INTENDED FOR competition at Sebring and Le Mans, the Ghia-bodied de Tomaso uses a completely reworked Ford 289-cu. in. engine.

proved during the past two years that building GT cars of exciting design represents a very rewarding form of publicity for its relatively new name. Its latest prototype shows some inspiration from the Honda Grand Prix car, taking the 244-cu. in., 4-camshaft Lamborghini 60° V-12 engine from the front of an existing coupe model and linking it to a new transmission which lets the engine be placed transversely behind the two seats.

VIRTUALLY NO flywheel is needed on a V-12 engine, so gear drive from the crankshaft to a multi-plate clutch located on a gearbox behind the transverse engine may not magnify torsional vibration problems unduly. Hydraulic remote control is used for the 5-speed gearbox, from which another gear set drives the sprung differential. Universally jointed shafts go to independently sprung rear wheels. With its engine ahead of the rear wheels, batteries stowed amidship in a hollow frame backbone and the spare wheel above the driver's feet, the transverse-engined Lamborghini's low polar moment of inertia should make for incredibly quick steering response. Having used the arrangement on a special car about 10 years ago, this writer can vouch for the effectiveness of a horizontal radiator with air flowing upward through its passages.

Structurally, the Lamborghini prototype chassis is alarming. It displays an almost complete discontinuity of its main members just forward of the engine.

Certainly this is an exciting exercise in design for publicity. Claimed already to have demonstrated a top speed of 198 mph on the Monza track, with its engine developing 430 bhp at 8000 rpm, this is a car designed for use on streets and highways, not a pure racing machine such as the Ghia-



ALUMINUM HEADS, bowl-in-piston combustion chambers, dry sump oiling and four 2-barrel Webers translate American Ford into Italian de Tomaso.

de Tomaso.

Doyen of Italian coachbuilders, Pininfarina, who is consultant for factories around the world, on this occasion showed his work only upon native-built chassis. His rear-engined Ferrari Dino V-6 coupe already has been mentioned in CL's "Autos

Abroad." An Alfa Romeo coupe of slightly fewer cubic inches emphasized that even with a somewhat taller car it can be a problem for the driver to see over a conventionally front-mounted engine.

Though details such as headlamp height are likely to be quite impracti-



CORPORATION GHIA produces the 450/SS Spyder, a 2+2 sports car on a tubular chassis, using Plymouth's 235-bhp Barracuda S engine.

year, with some very neat installations of parking lights and of rear lamp clusters, and with many door handles which involve finger-grip recesses, plus perhaps flush-fitting release buttons, but no projections outside the body surface.

RECTANGULAR HEADLAMPS, which have been taken up by mass-production factories as a practical aid to fitting large areas of high-set reflector into low-topped fenders, are becoming less common than previously upon specialist bodies. One of the Osi coachwork exhibits displayed interesting experimental Siem headlamps which overcome the impracticability of making the new high-efficiency iodine vapor lamps in double-filament form. Separate high-beam and passing-beam lamps of non-circular form are mounted closely above one another in a very compact (but at present rather ugly) high-powered light unit.

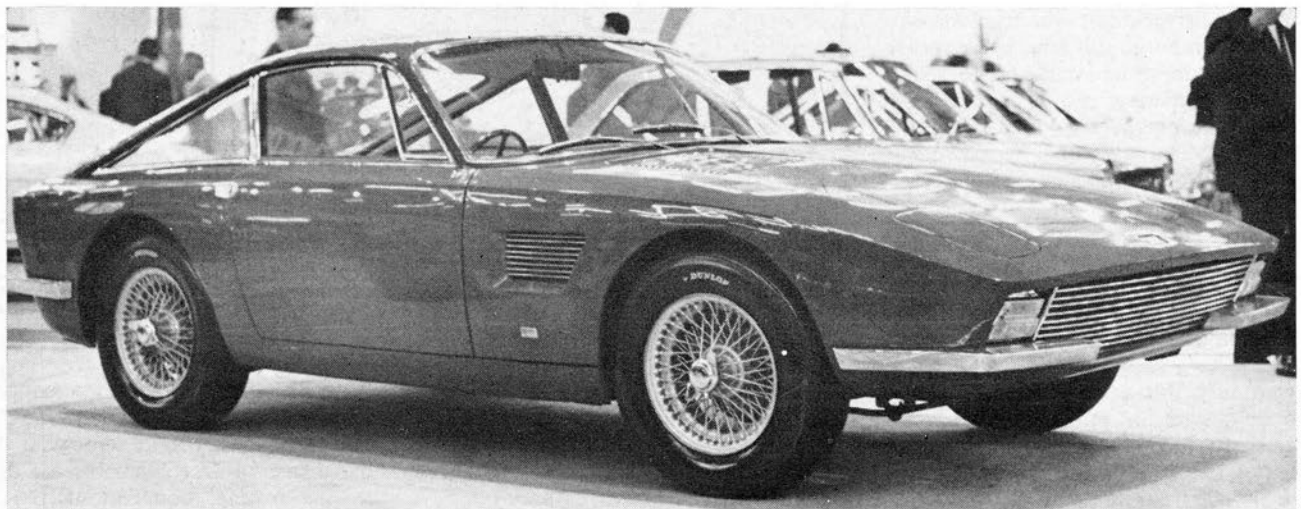
Alternatives to normal hinged doors still are the subject of experiment. One so-called safety car sponsored by an Italian magazine features slideback doors which do not obstruct the road when open. Pininfarina's Abarth-Fiat dream car has a hinge-forward roof canopy on light aircraft lines. Coachwork exhibits on Fissore's stand included an ultra-compact Aruanda town car mock-up of reasonably practical design. Two slide-back panels of wrapover glass replace a door and half of the roof.

While Italy earns fame and some dollars by building many of the world's most glamorous cars, a large proportion of the cars which squeeze through narrow streets in its ancient cities are still baby Fiat "Mice" of only 117 in. total length. ■

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cal on show specials, the ideas which are to be seen on Pininfarina and other models are a powerful magnet for stylists employed by large companies.

One rear-engined Abarth-Fiat coupe on the Pininfarina stand has a neat chromium plated steel protective and decorative strip running directly across the fronts of its four headlamps, set edge forward so that it does not mask the light appreciably. Simplicity of line is dominant this



ITALIAN BODYWORK by Fissore on a British multi-tubular chassis by TVR accommodates an all-American Cobra engine by Ford. This international blending of craftsmanship is what annually attracts U.S. engineers and stylists to European auto shows.

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