



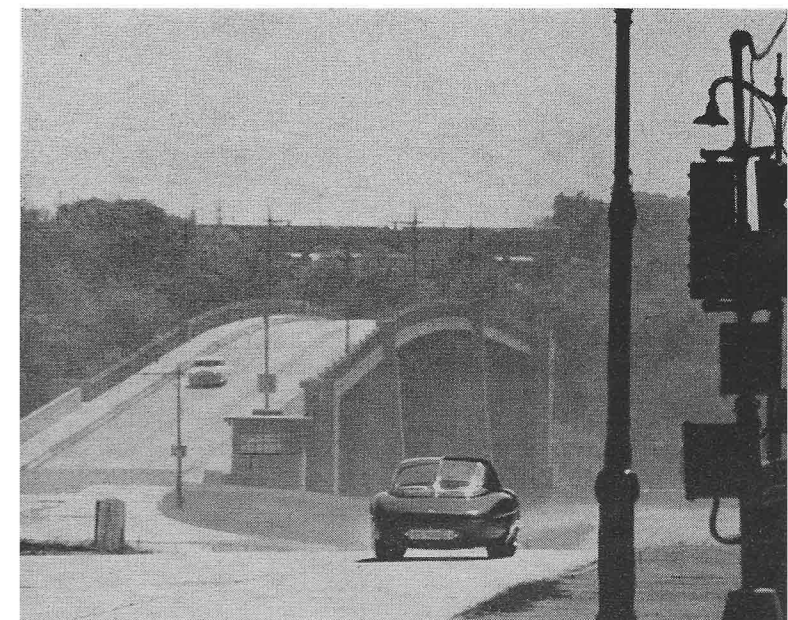
Last of the Red-Hot Alfas!

by Karl Ludvigsen

“... the same scream that electrified Le Mans spectators . . . performance that's long-legged and sustained . . . near the upper limits of our experience.”

► Next to Mercedes, Alfa Romeo is the make most sadly missing from the rolls of modern racing car builders. No firm has a greater competition heritage, or a finer postwar record — unfortunately compiled during the late Forties, when relatively few Americans were tuned in to the European Grand Prix scene. While Alfa production cars reflect this heritage in a general way, with their massive brakes, twin overhead cams and fine steering, there's never been a postwar sporting Alfa Romeo that incorporated any of the actual mechanical methods that made the supercharged type 159 Alfetta the finest racing car of its day. There were, though, prototypes of great modern Alfa sports cars in the tradition of the 2.9-liter two-seaters of the late Thirties — prototypes that saw racing action but were never built for sale. This automobile is one of those prototypes, probably the finest of them all.

It began in 1952 when the Milanese factory contemplated the production of a big six-cylinder passenger car tentatively named the Giulia, an obvious big sister to the Giulietta. As a first step toward it, an engine was laid out with the then-current 1900TI four as a base, using the same valve gear and 82.5 mm bore but adding two cylinders and in-



creasing the stroke from 88 to 92 mm to get a displacement just short of three liters. This engine, tuned to 200 bhp at 5500 on an 8-to-one compression ratio, powered the super-streamlined Touring-bodied machine that burst on a startled motor sporting world as the *Disco Volante* or “flying disc”, in recognition of its shape — something of an exaggerated forerunner of the D Jaguar. Though revealed in 1952, the car made no racing appearances that year.

Then, in the 1953 Mille Miglia, a very impressive racing Alfa Romeo was unveiled, still nicknamed the *Disco Volante* by racegoers though it was only generally derived from the 1952 car. Still using the 1900TI valve sizes (50 mm intake, 42 mm exhaust), the six was given bore and stroke increases to 88 x 98 mm to bring it to 3500 cc. It had five speeds forward instead of the original four, and the twin-tube frame of 1952 had been dropped in favor of a backbone-type space frame similar to that used later in the DBR2 sports-racing Aston Martin. Both had de Dion axles, but the later car had the rear brakes mounted inboard. Hammered together at the eleventh hour by Colli, the coupe bodies for these cars were magnificently hairy, with all kinds of scoops, trap doors, filler caps and rivets clustered on their exteriors.

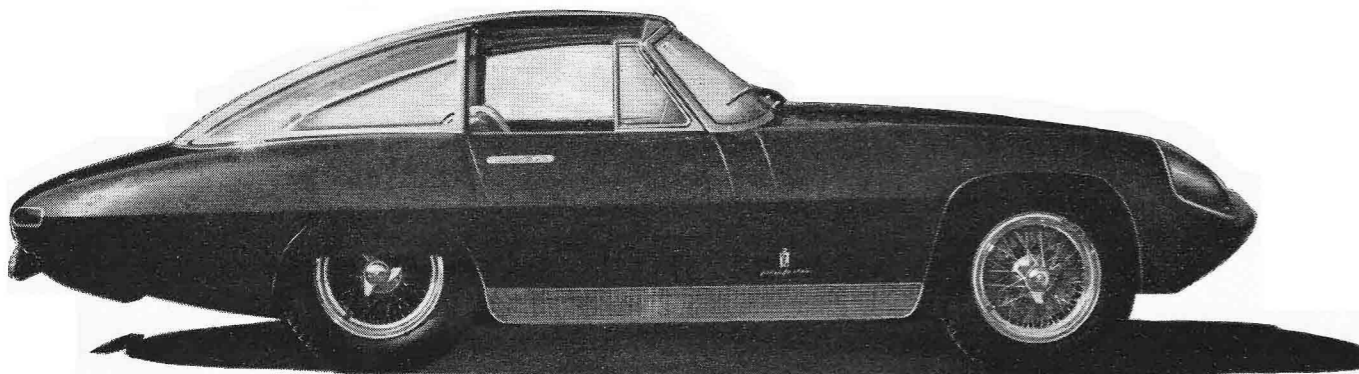


SCI was the world's first publication to drive and describe the 3500 cc Disco Volante—it was one of the most savage machines we've tried.

It was one of these machines that Fangio drove to a spectacular second in that year's Mille Miglia, covering the final miles with the left front wheel flapping aimlessly with a broken tie rod.

The team failed to finish a single car at Le Mans, then made a test appearance before a Nürburgring sports car race before announcing their withdrawal from competition for the year. Five of these racing coupes were built; four are readily accountable for today. One was rebodied as a spyder by the factory, and driven to an obscure win by Fangio in the Supercortemaggiore sports cars race at Merano in 1953. It's in the Alfa museum today, next to the 1952 *Disco*. Another was given Boano touring-type coupe bodywork and sold (or presented) to Argentina's Peron in 1955. A third coupe went to Joakim Bonnier, who was then the main agent for Alfa Romeo in Sweden. He found the headroom too small and had the car rebodied by Zagato in roadster fashion in 1955, then competed extensively with it before selling it to Henry Wessells III, inveterate American Alfa enthusiast. Next it was owned by Shelly Spindel, when it was driven in competition by Rodger Ward and Bruce Kessler, and now it's garaged by John Willock of Long Island. A fourth car was reportedly given a Ghia coupe body, and is not now traceable. The fifth you see on these pages.

This chassis, once a prototype for the stillborn Giulia, has become a styling workhorse for Pininfarina—one of the "dream cars" of Italian industry. Its first incarnation was as the "Super Flow", a wild coupe with upswinging windows and plexiglass-covered front wheels. "Super Flow II" was a more conservative version, and the third manifestation was as an open roadster with twin headrests. First shown at



Alfa Romeo has sent its rebodied Disco on a cross-country dealer tour to sound out public opinion on its styling and the possibility of a new model.

Geneva early in 1960, the fourth body is the one on these pages. Like all the others, it's intended to evoke reaction from the Italian populace regarding its styling features, the particular issue in this case being a two-piece retractable roof. To carry the question to the American populace, this car has made an extended tour of Alfa dealers in this country to ascertain our opinions on the styling and on the general prospects of a bigger Alfa Romeo model. This made it possible for SCI to be the first publication in the world to drive the 3500 cc *Disco Volante* and describe it in full.

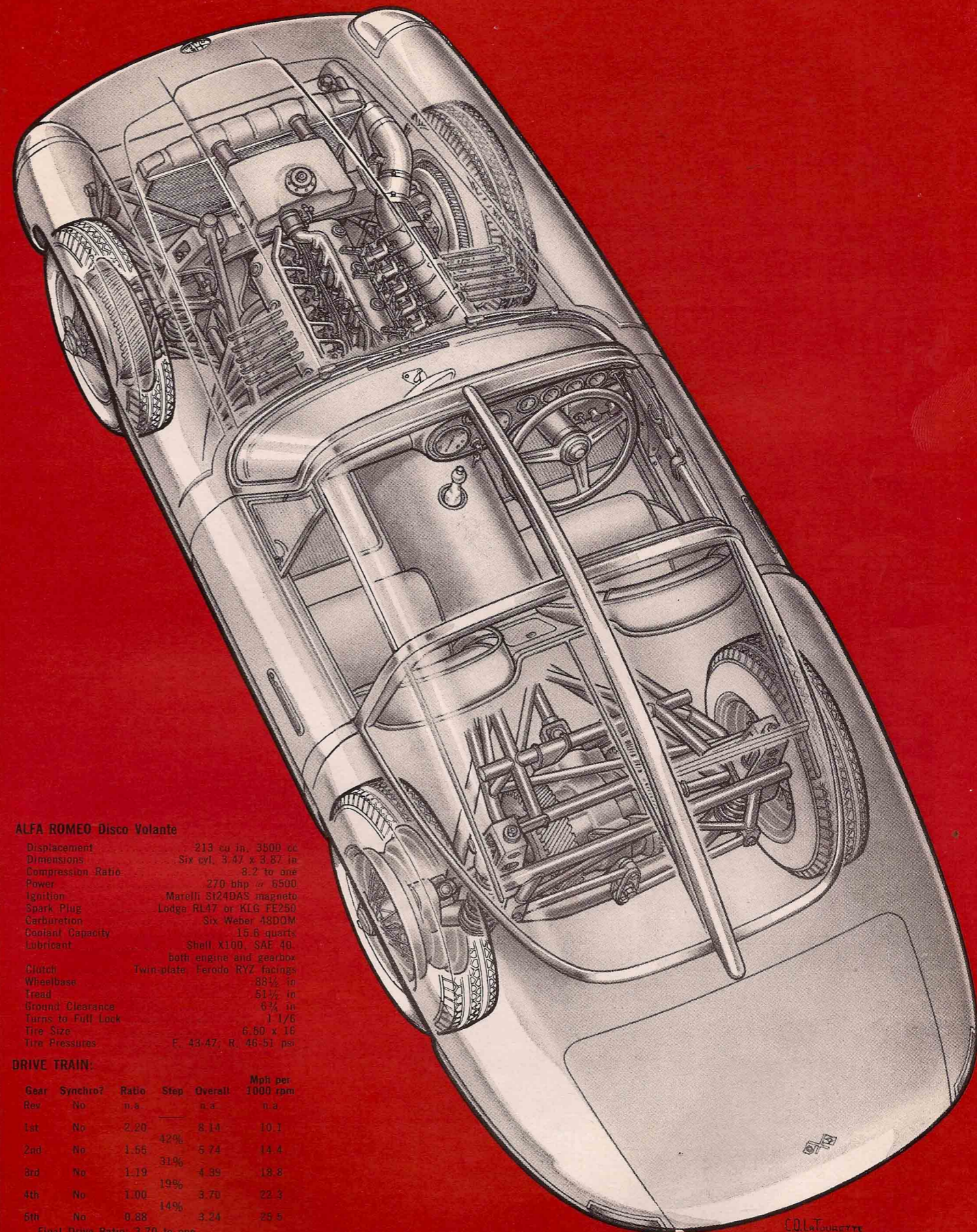
Knowing that this car had been specially set up at the factory to be *driven* all the way across the U.S. and back, we figured it would be drastically detuned to a smooth-running, tractable—and relatively dull—automobile. It turned out to be one of the most savage machines we've ever sampled! If it wasn't still in full Mille Miglia racing tune, then perhaps it had the next warmer range of spark plug. Certainly it varied little more than that from all-out competition trim. How to tell? The sound, for one thing. Have you ever heard a good Bristol engine in race tune, as in a Frazer-Nash or A.C.? It's a frenetic crackle, with the sharp smoothness of a high-winding six against a deep, muscular background tone. The *Disco* sounds just like that—but about three times as loud! The sheer noise this car made was absolutely deafening. Without a doubt, it was the same scream that electrified the Le Mans spectators in 1953. Probably more good planning than good fortune accounts for the exhaust pipe's placement along the left side, away from the right-hand driving position!

At part throttle or when you back off suddenly this big six pops and bangs alarmingly, impatient to get going again. This isn't surprising in view of the gaping intakes of the six individual Weber 48DOM carbs (each with its own float chamber pressure-balancing pipe from the big ram air duct), and the drastic valve timing, which checks out this way:

	Intake	Exhaust
Opens	56° BTDC	75° BBDC
Closes	68° ABDC	45° ATDC
Duration	304°	300°
Overlap		101°

Nevertheless, when you step down hard at relatively low rpm the engine comes in strongly and pulls inexorably away. It's fortunate this is so, because the gearing on this car is right out of this world. At 6500 rpm, where the engine develops a peak of something like 270 bhp, the speeds in the five forward gears are as follows: 66, 93, 122, 145, and 166! It was helpfully pointed out that fourth is direct drive and fifth an overdrive for fast touring. In driving the *Disco* around New York we only used third gear seriously twice, first and second sufficing otherwise. The result of this gearing is performance that's long-legged and sustained rather than violent, but—even so—near the upper

(Continued on page 78)



ALFA ROMEO Disco Volante

Displacement	213 cu in., 3500 cc
Dimensions	Six cyl. 3.47 x 3.87 in.
Compression Ratio	8.2 to one
Power	270 bhp @ 6500
Ignition	Marelli S124DAS magneto
Spark Plug	Lodge RL47 or KLG FE250
Carburetion	Six Weber 48DOM
Coolant Capacity	15.6 quarts
Lubricant	Shell X100, SAE 40
Clutch	both engine and gearbox
Wheelbase	Twin-plate, Ferodo RYZ facings
Tread	88 1/2 in.
Ground Clearance	5 1/2 in.
Turns to Full Lock	6 1/4 in.
Tire Size	1-1/8
Tire Pressures	6.80 x 16
	F. 43-47; R. 46-51 psi

DRIVE TRAIN:

Gear	Synchro?	Ratio	Step	Overall	Mph per 1000 rpm
Rev	No	n.a.	n.a.	n.a.	n.a.
1st	No	2.20	42%	8.14	10.1
2nd	No	1.55	31%	5.74	14.4
3rd	No	1.19	19%	4.35	18.8
4th	No	1.00	14%	3.70	22.3
5th	No	0.88		3.24	25.5

Final Drive Ratio: 3.70 to one.

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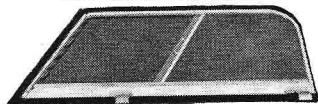
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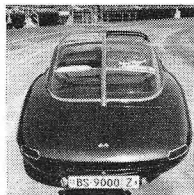
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RED HOT ALFA

Continued from page 28

limits of our experience.

With that high first gear we expected some trouble in getting away from rest, but the cushion-center twin-plate clutch handled starts and shifts more smoothly than we expected. The gearbox, with its stubby lever protruding through the vast center tunnel, felt solid as a bank vault and probably is just about that strong. Its helically-cut gears are selected by extremely rugged dog clutches: just two face dogs on the sliding clutch to engage four possible grooves in the gear. Nothing could be farther from synchromesh, but gear changes were easy and very, very fast. Since the differential is frame-mounted the drive line has a direct, "right-now" feel, emphasizing a small amount of free play that causes clunking noises when shifts are made. So sturdy do the clutch and gearbox seem to be that it's no surprise that the *Discos* suffered two failures of the spiral-bevel final drive in competition. That must have been the weakest link.

These Alfas appeared at Le Mans the same year Jaguar won so dramatically with its first use of disc brakes at the French track, so the writing was on the wall for drums after the Milan design staff had planned this machine. The drum brakes it has, however, are very interesting and probably more advanced than any others at that time. All four drums are bimetallic, with deep, helical finning. Mounted in-board, as mentioned, the rear brakes have conventional leading-trailing mechanisms with floating pivots—nothing very unusual. But in front the drum has been made very wide, the effective shoe width being about three inches. We say "effective" because Alfa engineers selected to use two shoes side-by-side, each about an inch and a half wide, giving a total of four shoes per wheel—all leading. This, of course, was done to improve the conformity between the shoes and the drum, often difficult to achieve with extremely wide shoes. We had no occasion to use the brakes really hard, but did notice that the pedal was firm in the racing manner and that there was a tendency to "pull" slightly to one side when the linings were cold.

Highly advanced for 1953, *Disco's* suspension is still excellent today. At the back it's de Dion, with the axle tube passing behind the heavily-finned final drive. Prime location for the tube comes from two radius rods which converge from the hubs forward to a central point, forming a triangle whose apex is pivoted to the frame by a two-way trunnion. A similar locating triangle was used on the prewar Grosser Mercedes and on the Pegaso, though in the latter case the triangle extended rearward rather than forward. Lateral location of the center of the de Dion tube is still needed, and in the Alfa it's supplied by a Watt linkage—one of the first uses of this now-popular device on a car suspension. Deep coil springs and tubular shocks are used, and the back

wheels are given a slight negative camber.

All these refinements, plus a tail-heavy weight distribution, result in exceptional traction in all directions at the back. Especially with the high gearing, it's almost impossible to spin the rear wheels, and there's ample cornering "bite". At the front there are unequal-length wishbones, conventional in layout but lovingly manufactured, and coil springs and an anti-roll bar (a short anti-roll bar is also fitted at the back). Steering is by a conventional box with three-piece track rod linkage placed ahead of the front wheels, calling for $2\frac{1}{3}$ turns from lock to lock for a turning circle of $44\frac{1}{2}$ feet. There's a springy, progressive feel to the steering—a feel of precision and an exact indication of what's happening at the front wheels.

Naturally we didn't take too many liberties with this exotic automobile (it was valued at \$40,000, probably not unreasonable in view of its origin and uniqueness) but we did get a good impression of its handling. One of the hardest tasks of the racing car designer is to combine a deep-kneed, flexible suspension (for comfort and adherence to rough road surfaces) with micrometric precision of wheel location (for accurate, consistent directional control). This has been done extremely well in the *Disco*. It's a surprisingly smooth-riding car, obviously well suited to the most rugged kind of over-the-road racing, but it manages to keep the high-level predictability of a pure racing car. Its competition heritage couldn't be revealed any more clearly.

The real reason for this car's existence is, of course, the body. From every aspect, Pininfarina's workmanship and development of line is flawless. It's an extremely striking car. As we've come to expect from Italian cars, the cockpit was very cramped for our six-foot types, but bearable. The broad tunnel forces you to sit well over to the side of the car; the overall width would easily be adequate for three abreast. Removable "side curtains" are fitted, an arresting anachronism, and the sliding roof feature—the main novelty of this body—proved disappointing. Its two sections didn't slide too reliably on their nylon rollers and tracks, and they were difficult to latch firmly against the top of the windshield.

It's rumored that Alfa Romeo has some larger powerplants and more sporty models in the offing; they may even be announced by the time this appears. We sincerely hope they'll incorporate some of the technical excellence and sheer virile excitement of this unforgettable *Disco Volante*. —KEL

(Answers to The Numbers Game page 60)

1. Sunbeam Talbot	.....	SAAB
2. BMW	.....	Goggomobil
3. Mercedes-Benz	.....	Jensen
4. Bugatti	.....	Austin
5. Cisitalia	.....	Peugeot
6. Bristol	.....	BMW
7. Austin-Morris	.....	Auburn
8. BMW	.....	Porsche
9. Alfa Romeo	.....	Jaguar
10. Maserati	.....	Ferrari
11. Siata	.....	Volvo
12. Delahaye	.....	Ferrari Mondial
13. Aston-Martin	.....	Dyna Panhard (Deutsch-Bonnet)
14. Rover	.....	Taunus
15. Packard	.....	MG
16. Bugatti	.....	Mercer
17. Bentley	.....	Isotta-Fraschini
18. Lotus	.....	Hispano-Suiza
19. Pegaso	.....	Mercedes-Benz
20. Porsche	.....	Skoda