The Autocar
30 JUNE 1961 ONE SHILLING

MG MIDGET
Re-introduced

The Autocar

FOUNDED 1895 LARGEST CIRCULATION

Right, Sergio Farina hands over his car outside the modern Pininfarina factory on the outskirts of Turin

Below. Few drivers would adopt this stretched arm attitude at the wheel, but it demonstrates the amount of room for rear passengers

IN BETWEEN—TIMES

The Technical Editor Recounts his Experiences with some Unfamiliar Foreign Cars : Ferrari 250 GT Coupé 2+2 : Abarth Record Monza : and a Go Kart

DURING the course of any one year, *The Autocar* series of road tests covers on average between 45 and 50 cars. A considerable amount of organization is necessary to achieve this programme, for no matter how well planned there are inevitable fat and lean periods. Moreover, much as we try to provide a well-balanced diet of wide-interest bread-and-butter models and the occasional exotic dish, there are still several makes which cannot be included for a variety of reasons. Often the manufacturers are not co-operative in wanting a searching road test report published, or they feel unable to make a car available for the length of time such tests take.

In order temporarily to fill the gaps, the opportunity can sometimes be taken during foreign visits to borrow examples of the rarer cars for short periods, and thus obtain some brief experience of them. Full road test equipment is not usually available on such occasions, and it is necessary, therefore, to calibrate the car's speedometer—not such an accurate method as our normal use of a trailing fifth wheel, but, nevertheless, accurate enough to convey impressions.

During a recent Continental trip to visit some Italian racing establishments, the chance arose to borrow a Ferrari 250 G.T. coupé 2+2 and a Fiat Abarth 100 Record Monza. In many ways they are so different and yet so alike; the Ferrari is smooth, refined and tractable, the Abarth harsh, inflexible unless revving fast, and yet very fascinating. Both thrive on high engine speed, made possible by the use of twin overhead-camshaft valve gear.

In my opinion there is no substitute for torque, which means large displacement engines when talking of real performance—which is why the American vee-8 engines of 5-litre and 6-litre capacity are so captivating. However, I can also appreciate the almost equal fascination of obtaining high powers from small cylinders, with the inevitable frequent gear changing associated with them resulting from the wide speed range which they demand.

Bodies for the Ferrari are manufactured and finished by Pininfarina. Current production is 10 bodies per week for the 2+2 model and from two to three units per week of cabriolets, 250 G.T. and Superamerica special bodies. It was appropriate, therefore, that the borrowed car was the personal transport of Sergio Farina, son of the founder, and it was standard in every respect. Designed as a high-speed tourer in the grand manner, and sold admittedly at a very high price—for in Italy it costs the equivalent of between £3,300 and £3,400—it is, nevertheless finished to a very high standard and laid out and equipped in a manner appropriate to its character.

Of all the cars I have driven, few have felt so right as the Ferrari in regard to the driving position—as one would expect with such a long competition history. Much thought has been given to the relationship between the steering wheel, seats and pedals, and there is not a single fault

The cockpit of the Ferrari is workmanlike and attractive: the good pedal layout is seen clearly

At speed on the Ivrea autostrada where a mean maximum of 137 m.p.h. was recorded

IN BETWEEN-TIMES . . .

to find. The seats provide excellent support under and to the side of the thighs, and a well-proportioned backrest, fully adjustable for rake, holds the driver firmly without restricting his movements. Even with the front seat well back for a full arm's length driving position, an adult of average height can sit in the rear with his head just clear of the roof and his knees up against the front-seat squab; there is sufficient room to curve them slightly round the sides.

It is a rare occurrence these days to drive a car with bottom hinged pedals for the clutch and brake, but the Ferrari demonstrates that they are unquestionably superior to the best-designed pendant types, even if one does realize the convenience of these in permitting combined master cylinders and reservoirs.

Good Ventilation

Good heating systems are taken for granted on most modern cars, but cool air ventilation is not given quite the same thought. The Ferrari was excellent in this respect. There are the usual hot and cold controls for screen and general heating, with exit flaps on either side of the central instrument console; in addition, there is a direct fresh-air control at each side. Pulling a lever beneath the facia directs cool air around the feet, although the blast was found to be too severe at speeds above 100 m.p.h. Pushing the control inwards directs air to grilles at each extremity of the facia and each of these has a butterfly control for volume; the bezel face, which has three guide vanes, can be swivelled to direct the flow through 360 degrees. If the rear-side extractor ventilator windows are opened a very well-balanced fresh air flow can be obtained without draughts or excessive wind noise.

With the three-litre 12-cylinder engine peaking at 7,000 r.p.m., at which speed 240 b.h.p. is developed, the rev counter is calibrated to 8,000 r.p.m. without any indication of a maximum limit. When representative performance figures were taken, the change was at peak power point in each ratio, and throughout the range the engine was very smooth, although rather noisy in the higher range; there was a slight vibration at 5,000 r.p.m. Maximum speeds in the gears, each of which has first class synchromesh, corresponding to 7,000 r.p.m. were 49 m.p.h., 73 m.p.h., 99 m.p.h. and 125 m.p.h. at corrected speeds. Over a timed kilometre in top overdrive, which is a Laycock-de Normanville type, a mean maximum speed of 137·2 m.p.h. was recorded; this corresponds to 6,000 r.p.m. and it is thus obvious that the spacing of the ratios is well matched to the car's performance and character, and the overdrive is what its name implies.

The following standing start figures, after correcting the speedometer, were achieved.

0-60 m.p.h.	8·7sec
0-80 m.p.h.	13·2sec
0-100 m.p.h.	19·1sec
0-120 m.p.h.	30·4sec

With more practice these figures probably could have been improved, for it is not an easy car to get off the mark. Insufficient throttle results in slow times—as might be expected with the torque curve peaking at 5,000 r.p.m.—and too much results in time wasting wheel spin. At all times the car was particularly stable, giving the impression of immense rigidity, and it could be taken extremely fast through very actue corners, the Pirelli Cinturato tyres making no protest, despite the quite noticeable understeer characteristics. There is very little roll indeed, and because of the light yet high-geared steering, the car can be thrown around with precision and safety.

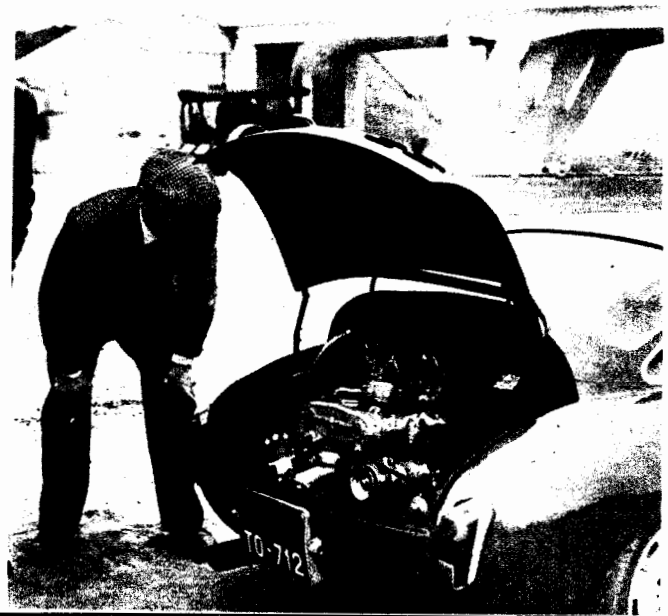
The Dunlop disc brakes stood up well to severe use, but on this particular car there was servo lag, and the hydraulic system needed bleeding. In spite of the high cornering abilities, the suspension is by no means harsh and cruising at speeds in excess of 100 m.p.h. is comfortable and restful, for there is practically no wind noise.

The Ferrari can be summarized by relating it to the history of its creator. The company started in racing and thus know all the tricks of providing performance allied to precision and safety in handling. When it was decided to market expensive grand touring cars, it was realized that performance alone was not enough, for it must be combined with restful and comfortable travel, which the Ferrari certainly offers.

Exhilarating Abarth

If the Ferrari can be likened to a panther, so the Abarth Monza Record can be considered as a little terrier straining at the leash, rearing to go, perhaps slow off the mark, but always full of energy. With the same individual cylinder capacity as the Ferrari, but having one-third its total number, and thus displacement, the Abarth 1000 Bialbero is less than 10 m.p.h. slower; the relative weights are 12cwt for the Abarth and 24cwt for the Ferrari. These figures explain the difference in their characteristics, for the Abarth relies on high engine revs in conjunction with large valve openings and overlaps, which means that there is not much useful power below 4,000 r.p.m.

The engine is based on the Fiat 600D, which has a capacity of 767 c.c.; this has been increased to 982 c.c. and converted very ingeniously to twin overhead camshafts with two twin-choke downdraught Weber carburettors, in which form it develops 93 b.h.p. at 7,000 r.p.m. Maximum torque is developed at 5,400 r.p.m. The platform chassis is basic Fiat 600 with Abarth modifications to the springs and dampers, non-servo Girling disc brakes are fitted to the front wheels, and the



So that is where all the performance comes from—the Abarth engine looks all camshafts and carburettors and rocks on its mountings when idling

rack-and-pinion steering has higher gearing to give quicker response.

It says much for the inherent safety of the basic Fiat suspension that it remains stable at speeds almost twice that for which it was originally designed. The ride was comfortable with no harshness often associated with competition types and the car could be placed accurately and held on course. It had rather pronounced oversteer characteristics on fast bends, but was quite controllable by the use of opposite lock and throttle-on technique. Of equal importance, it ran straight as an arrow at maximum speeds, unaffected by slight wind changes due to bridges or buildings.

There was no opportunity to take performance figures with this car, but assuming that the rev counter was accurate a sustained run was made with this recording 7,900 r.p.m., which corresponds to 128·5 m.p.h. with Michelin X tyres fitted. This is similar to the figure recorded by the American journal *Car and Driver*, which also recorded a standing ¼-mile in 16·2sec, 0-60 m.p.h. in 8·5sec, 0-80 m.p.h. in 16·3sec, and 0-100 m.p.h. in 24·0sec. The factory car borrowed from Abarth had closer gear ratios than the one tested by the American journal, so that improvement on these times could be expected.

There is nothing uncomfortable or incomplete about the cockpit layout, although it is clearly designed for extremely fast travel. The competition seats have a distinct layback attitude about their design, with angled side members to give outstanding lateral support. A short-legged driver when adopting the arm's-length driving position would find the pedals very far away indeed, to the extent of needing spacer blocks on the pads. The steering column is offset towards the centre of the car on the left-hand drive models and there is not much room for the outer elbow.

No concessions have been made to refinement, for at most speeds the car is as noisy as a rocket, resulting mainly from unsilenced carburettors and the exhausts. There were, however, no harsh transmission noises and the engine was quite smooth throughout its range, probably resulting from the extremely flexible mountings.

A short run was also made in the Abarth 2200 which Carl Abarth has developed from the Fiat 2100 by enlarging the cylinder bore and tuning the engine; this includes raising the compression ratio and fitting two twin-choke horizontal Weber carburettors. The body to his own design is built by Allemano and is a two-seater with two very occasional ones behind. In fact, for a tall driver sitting well back, the backrest would be almost up against the rear seat cushions. This is a very refined G.T. car, flexible and quiet, and in one maximum speed test it recorded a shade under 120 m.p.h.

This round-up of high-performance small-capacity engines was completed by my first experience of a Go Kart. In the past I have regarded these as toys, but on a suitable twisting course they can certainly be very exciting. The opportunity occurred after a very fine lunch at the house of Bernard Cahier, the well-known International journalist who lives at Evian, which is on the French side of Lake Geneva. Also in the party were racing driver-journalist Paul Frère and Sergio Farina.

My better-informed colleagues tell me that some Go Karts have a clutch and gearbox, but my baptism was undertaken on an American model with fixed drive. It demanded push starts and was controlled by a right-foot throttle and left-foot brake operating a single disc—almost as thin as a gramophone record—on the solid rear axle. The two-stroke engine is tuned to give its power at very high revs and over a very narrow speed range. This, combined with the fixed drive, meant that the two pedals often had to be operated simultaneously on the very tortuous circuit we used, to anticipate coming out of the corners with sufficient power.

Being new to this game I viewed the Go Kart with apprehension, particularly its lack of suspension and solid rubber tyres, which were of American dragster pattern having a very fat and flat tread with a low silhouette. My misgivings were soon dispelled, for once I had become accustomed to the directly coupled and, therefore, very quick steering and countered it by digging my elbows into the ribs, a surprising and really exhilarating performance could be obtained. This is enhanced by sitting close to the ground and driving on a twisty course. Tyre adhesion, particularly as it was drizzling with rain, was surprising in the extreme, for the car could be drifted in complete confidence through narrow sections, once the driving technique was mastered.

Although I was slower round the circuit than Cahier and Frère, at least I persuaded myself I was going very fast indeed, which perhaps explains the cult of Go Karts.

Left. A real projectile, easily controlled by human hands, if somewhat raucous. Below left. The Abarth 2200 and diminutive 1000 formate at speed. Below right: The extended driving position improves headroom and visibility on the Monza Record

Readers are assured that the Technical Editor was not really so scared as he appears here