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MOTOR SPORT



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PREVIEW TO THE BRITISH GRAND PRIX

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Bristol	- Manor Tyres	0272 M[illegible]
BEDFORDSHIRE		
Biggleswade	- Stapletons	
Dunstable	- Carnoisseur	0767 3[illegible]
Flitwick	- Town Tyres	0582 47[illegible]
		0525 7[illegible]
BERKSHIRE		
Maidenhead	-Stapletons	
Reading	- Elite Tyres	0628 2[illegible]
Slough	- Feltham Tyres	0734 5[illegible]
		0753 5[illegible]
BUCKINGHAMSHIRE		
Aylesbury	- Stapletons	
Buckingham	- C. G. Tyres	0296 4[illegible]
High Wycombe	- Adams & Page	0280 8[illegible]
		0494 2[illegible]
CAMBRIDGESHIRE		
Cambridge	- Cambridge Performance Tyres	0223 4[illegible]
Huntingdon	- Stapletons	0480 5[illegible]
Peterborough	- RS Wheels	0733 3[illegible]
CHESHIRE		
Nr Chester	- Demon Tweeks	0829 7[illegible]
Macclesfield	- E.A.R.S.	0625 4[illegible]
Stockport	- Direct Tyres	061 480 [illegible]
Warrington	- Jim Jeffery Tyres	0925 6[illegible]
CLEVELAND		
Middlesbrough	- C&S	0642 24[illegible]
CO DURHAM		
Peterlee	- Swift Motor Sport	091 58[illegible]
CORNWALL		
Launceston	- Greenaways Tyres	0566 7[illegible]
CUMBRIA		
Barrow	- Duddon Tyres	0229 8[illegible]
Kendal	- A&S Tyres	0539 7[illegible]
Workington	- Gates Tyres	0946 8[illegible]
DEVON		
Plymouth	- Gupa-P Discount Tyres	0752 2[illegible]
Torquay	- Torquay Tyres	0803 3[illegible]
DYFED		
Garnant	- JJ Tyres	0269 8[illegible]
ESSEX		
Colchester	- Williams Tyres	0206 5[illegible]
Rainham	- Elite Autos & Designs	04027 2[illegible]
South Benfleet	- Jet Tyres	0268 7[illegible]
GLOUCESTERSHIRE		
Gloucester	- City Speed	0452 4[illegible]
HAMPSHIRE		
Southampton	- Derek Warwick Honda	0703 2[illegible]
Winchester	- Micheldever Tyres	09628 [illegible]
HERTFORDSHIRE		
Barnet	- Stapletons	081 448 [illegible]
Bishops Stortford	- Tyre Tech	0279 5[illegible]
Hemel Hempstead	- Discount Tyres	0442 6[illegible]
Hitchin	- Supertyres	0462 4[illegible]
Letchworth	- Stapletons	0462 6[illegible]
Stevenage	- Stapletons	0438 3[illegible]
Watford	- Stapletons	0923 1[illegible]
Welwyn Garden City	- Supertyres	0707 3[illegible]
HUMBERSIDE		
Hull	- Savoy Tyres	0482 79[illegible]
JERSEY		
St. Saviour	- Derek Warwick Honda	0534 5[illegible]
KENT		
Bexleyheath	- Dartford Tyres	0322 5[illegible]
Dartford	- Dartford Tyres	0322 7[illegible]
Sevenoaks	- Formula One Accessories	0438 8[illegible]
Tunbridge Wells	- Littlejohn Tyres	0892 5[illegible]
LANCASHIRE		
Blackpool	- Tyres South Shore	0253 6[illegible]
Preston	- Windynook Garage	0772 7[illegible]
Rochdale	- Newbold Tyres	0706 3[illegible]
Southport	- West Coast Off Rd Centre	0704 2[illegible]
Wigan	- Pemberton Tyres	0942 2[illegible]
LEICESTERSHIRE		
Ibstock	- Jeff Fowkes Wheels	0530 6[illegible]
Leicester	- Graham Goode	0533 8[illegible]
LONDON		
Chalk Farm	- Chalk Farm Tyres	071 267 [illegible]
Colindale	- Northway Tyres	081 205 [illegible]
Edmonton	- Ripspeed Int	081 803 [illegible]
Eltham	- Grays Tyres	081 859 [illegible]
Hanwell	- Grays Motor Factors	081 840 [illegible]
Pinner	- Terry's Tyres	081 868 [illegible]
SE6	- London Tyre Warehouse	081 697 [illegible]
WEST MIDLANDS		
Birmingham	- BMTR	021 643 [illegible]
Stourbridge	- Speedequip	0384 3[illegible]
Warley	- Auto Quip	021 429 [illegible]
Wolverhampton	- Chase Tyres	0902 7[illegible]
MIDDLESEX		
Brentford	- Motorwise	081 560 [illegible]
Uxbridge	- Cowley Road	0895 3[illegible]
NORFOLK		
Kings Lynn	- Kings Lynn Tyres	0553 7[illegible]
Norwich	- SCA Race	0603 7[illegible]
Thetford	- Forest Heath	0842 7[illegible]
NORTHAMPTONSHIRE		
Northampton	- Scotts Tyres	0604 7[illegible]
NOTTINGHAMSHIRE		
Nottingham	- Prosport	0602 4[illegible]
SCOTLAND		
Aberdeen	- Kenway Tyres	0224 2[illegible]
Bridge of Don	- Kenway Tyres	0224 8[illegible]
Edinburgh	- Auto Image	031 337 [illegible]
Glasgow	- Auto Image	041 333 [illegible]
Grampian	- GT Tyres	05422 [illegible]
Lockerbie	- Express Tyres	05762 [illegible]
Murrayshire	- GT Tyres	0309 7[illegible]
Tayside	- Tayside Tyres	0382 4[illegible]
Wishaw	- Cooper Bros	0698 3[illegible]
SHROPSHIRE		
Market Drayton	- Market Drayton Tyres	0630 5[illegible]
Oswestry	- P&B Tyres	0691 6[illegible]
STAFFORDSHIRE		
Cannock	- Chase Tyres	0543 7[illegible]
Telford	- Chase Tyres	0952 6[illegible]
SUFFOLK		
Bury St Edmunds	- Bury Tyres Services	0284 7[illegible]
Halesworth	- Halesworth Motor Company	0986 6[illegible]
Ipswich	- Williams Tyres	04737 [illegible]
SURREY		
Cranleigh	- Surrey Off Road Specialists	0483 2[illegible]
Guildford	- Guildford Tyre Company	0483 5[illegible]
Haslemere	- Haslemere Tyres	0428 6[illegible]
Newdigate	- Newdigate Tyres	0306 7[illegible]
Surbiton	- Surbiton Tyres	081 397 [illegible]
SUSSEX		
Crawley Down	- Palmers Auto Centre	0342 7[illegible]
East Grinstead	- Felbridge Tyres	0342 3[illegible]
Hove	- Tyre Care Centre	0273 7[illegible]
Maresfield	- Littlejohn Tyres	0825 7[illegible]
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Kingsbury	- PMC	0827 8[illegible]
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Rugby	- TW Tyres	0788 5[illegible]
WILTSHIRE		
Salisbury	- Bathwick Tyres	0722 3[illegible]
Swindon	- The Tyre Supplier	0793 5[illegible]
WORCESTERSHIRE		
Redditch	- ETB	0527 6[illegible]
Stourport	- ETB	0299 3[illegible]
Worcester	- ETB	0905 2[illegible]
YORKSHIRE		
Doncaster	- DMA	0302 3[illegible]
Leeds	- Stapletons	0924 2[illegible]
Sheffield	- Hawleys Tyres	0742 7[illegible]

MOTOR SPORT

INCORPORATING **SPEED** AND THE **BROOKLANDS GAZETTE**

VOL LXVII No.7 JULY 1991

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FRONT COVER: *The Williams-Renaults at last came good in Mexico, Riccardo Patrese leading team-mate Nigel Mansell in a race on which the Anglo-French team stamped their authority.*

MOTOR SPORT
SUBSCRIPTIONS

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MATTERS OF MOMENT

Complications

Compared to motoring in vintage times, we drive in a complicated age. And as 1992 approaches we are going to be faced with many additional complications. As if there were not sufficient already, especially in party politics! In terms of car ownership, there are so many changes and additions on the legislation front, particularly where the running of the older vehicles is involved, that it is indeed fortunate that we have the FHVC keeping a careful watch on developments and trying to enforce a sane view of what motoring should be about.

Then motor racing is no longer the simple sport it once was. Complications inevitably came into it quite soon and have since multiplied into bewilderment. Scores of championships, with their complex points awards, fuel consumption limits, grave bickerings at official levels, weight handicaps added on a sliding-scale after each round of saloon car contests, "stop-go" penalties, spot checks on F1 weights and wings, unusual F1 finishing orders, driver fines and penalties, and so on; necessary maybe, but complicated.

Ordinary drivers do not escape either. They are required to obey ever more signals, speed limits, white lines, yellow lines, no parking notices, danger signs, etc, with a complex system of points-totting-up if they are caught disobeying. Even in rural Wales new speed limit signs are mushrooming, along with more kerbs and roundabouts, regardless of the cost of erecting and maintaining such "developments". At a time, too, when local Council spending is said to affect the levels of Community Tax we shall all have to pay. There is added complication at Council meetings when it becomes essential to decide where a "Give Way" globe should be placed on a crossroad at which all roads have equal status — and where, in less complicated days, horn-tooting usually ensured a safe crossing. So we are being ever more regimented, rather like train drivers, with a view to setting us safely on our respective ways. Yet, highly desirable as it is to eliminate where possible every accident, let us not overlook the fact that for every careless or criminal driving act, hundreds of thousands of drivers of vehicles of all kinds manipulate their machines with sufficient skill and consideration not to have accidents. Yet along with the reckless and the inexperienced, they can fall victim to radar traps, unmarked police cars and the like, while speed remains the scapegoat in the minds of most bureaucrats, contrary to the thinking of experienced police Chief Constables. It is like the mad dog syndrome, where a small percentage of pit bull-terriers trained to fight and kill are such a serious danger that they need to be dealt with, but hundreds of thousands of other dogs are harmless pets for the young, the middle-aged, and the old, and very often almost essential companions to lonely old-age persons.

Cars themselves have become vastly more complicated, too, and thus difficult and expensive to maintain. While MOTOR SPORT is all in favour of the high-performance Supercars capable of 150 to 170 mph or so, costing astronomical sums, which can be wonderful fun and fast transport in the hands of experienced drivers, these cars in themselves must surely bring complications — in the matter of consulting with the bank manager, perhaps, although in the case of those who can afford to actually purchase such road-burners it may well be a case of the bank managers consulting them! These supercars may be abnormally fast but speed in itself is not necessarily the killer. In which respect we wonder whether reducing the legal speed of large trucks from 70 mph to 60 mph on Motorways will have much effect, except to keep them longer in the middle lanes while overtaking "mimsers" who clog the inner lanes of our important Motorway system.

If you can afford it, and want it, by all means have a car representing the peak of high-performance achievement. But in this age of recession, with the high cost of petrol and the need to reduce exhaust-pollution, is it too much to hope for that our clever designers and technicians will continue to improve the now very excellent smaller and less expensive cars? Sales are reported as falling seriously. Perhaps what is wanted to stimulate them are even more economical cars, say of Sierra or Cavalier size, and a new family of much smaller cars with similar built-in refinements, leaving the half million pound road-burners to the Very Rich.

WB

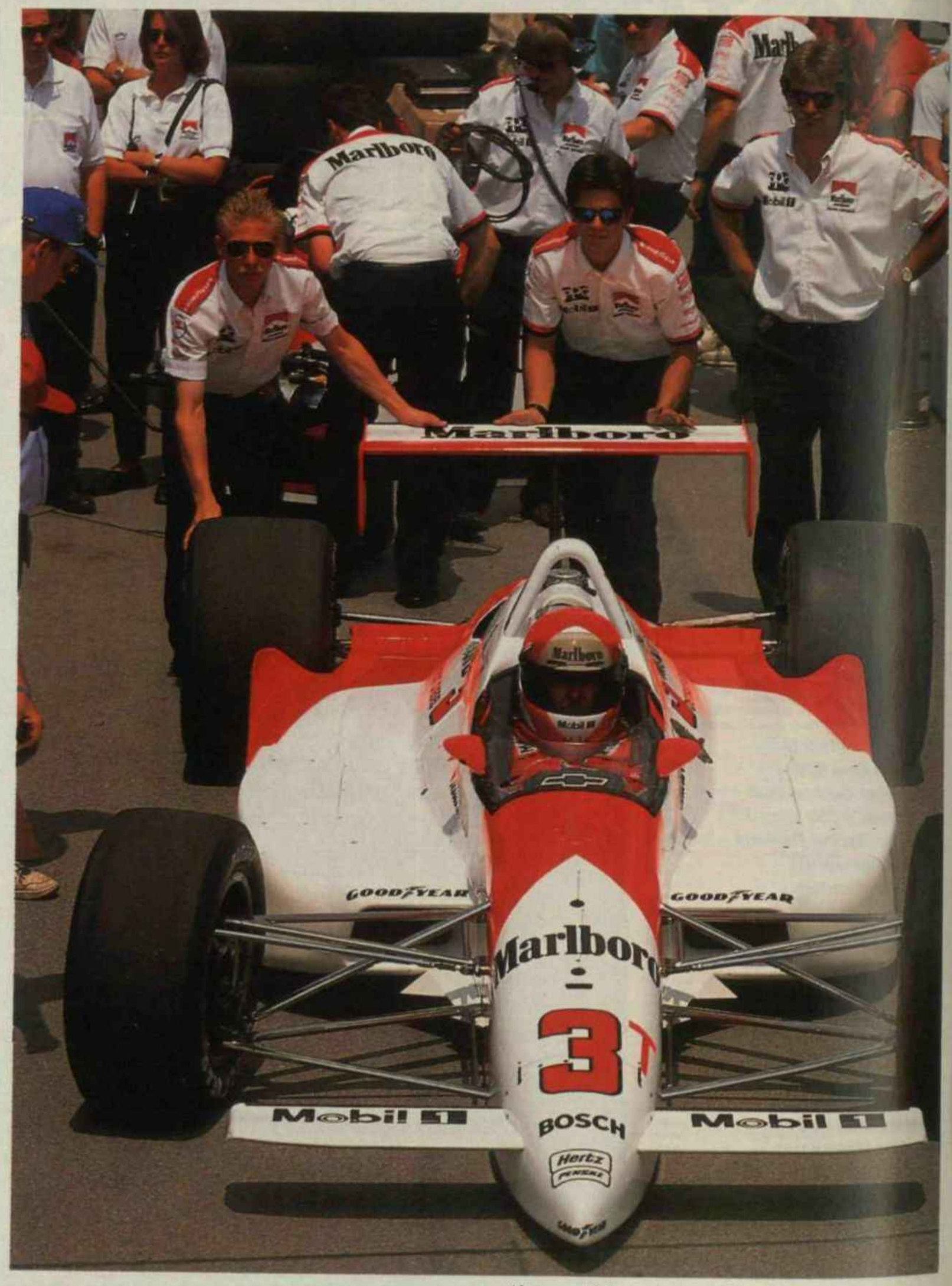
GB v USA

The Indianapolis 500 is one of the fastest of motor races, won this year by Rick Mear's Penske-Chevrolet at 176.46 mph, his closing laps run at over 220 mph. So it came as a surprise to read in Eoin Young's weekly Diary that it was not until 1939 that the Indianapolis track had been lapped at over 130 mph. In fact, I think Eoin has confused the ten-lap 130.06 mph qualifying average speed achieved by Lou Meyers (Bowes Winfield) in 1939 with the Indy lap record, raised for the first time to better than 130 mph in 1937, by Jimmy Synder, when his centrifugally-supercharged six-cylinder Sparks Special was timed at 130.492 mph.

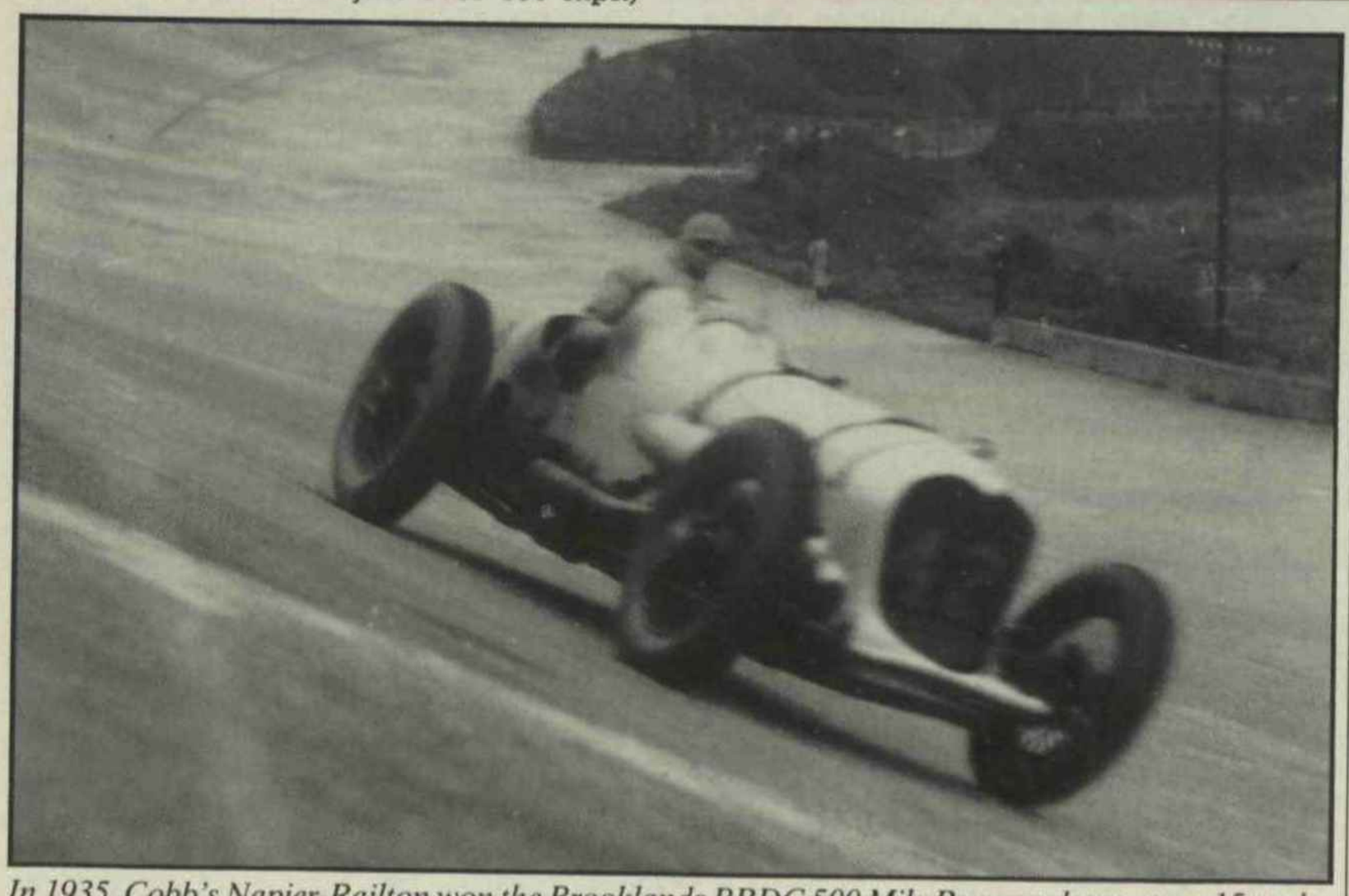
It is well established that in spite of its standing-start, as opposed to a rolling-start in the American race, the Brooklands BRDC 500 Mile Race was run at a faster average speed than the American classic in 1929, 1931, 1933, 1935, and 1936, although the Brooklands' race was handicapped. Indeed, the 1935 BRDC event was over 15 mph faster than the USA marathon. As for lap speeds, by the time the Indy lap had been turned at over 130 mph for the first time, thirteen 130 mph Brooklands' badges had been won (there were to be four more by 1939) and the lap record for the Weybridge track had stood for one and a half years at 143.44 mph.

It is rather pointless to compare different tracks and the varying types of cars running thereon, without qualification. In considering the slower lap speeds at Indy up to the war, against those established at Brooklands, it has to be remembered that between 1921 and 1937 Indy rules for the 500 called for an engine size which averages out to 3122.5cc, although for much of this period the cars were more advanced technically than many of the Brooklands cars. The engine size of the Brooklands' cars which won for their drivers a 130 mph badge up to May 1937 (the date of the Indianapolis race, when the Indy lap record was raised to just over 130 mph) averages about, I think, to just over 5608cc. However, many of these cars were older than the contemporary Indy racing cars and not so many supercharged. Reverting to the speeds at which the respective 500 Mile races were won, it should be taken into consideration that at Indy after accidents (which were rather prevalent there) part of the race would be run at reduced speed behind a pace car, which did not happen at Brooklands. On balance though, it seems that Brooklands was the faster course.

WB



Above: Although capable of speeds over 220 mph, Rick Mears was the winner of this year's Indy 500 at an average speed of 176.46 mph.



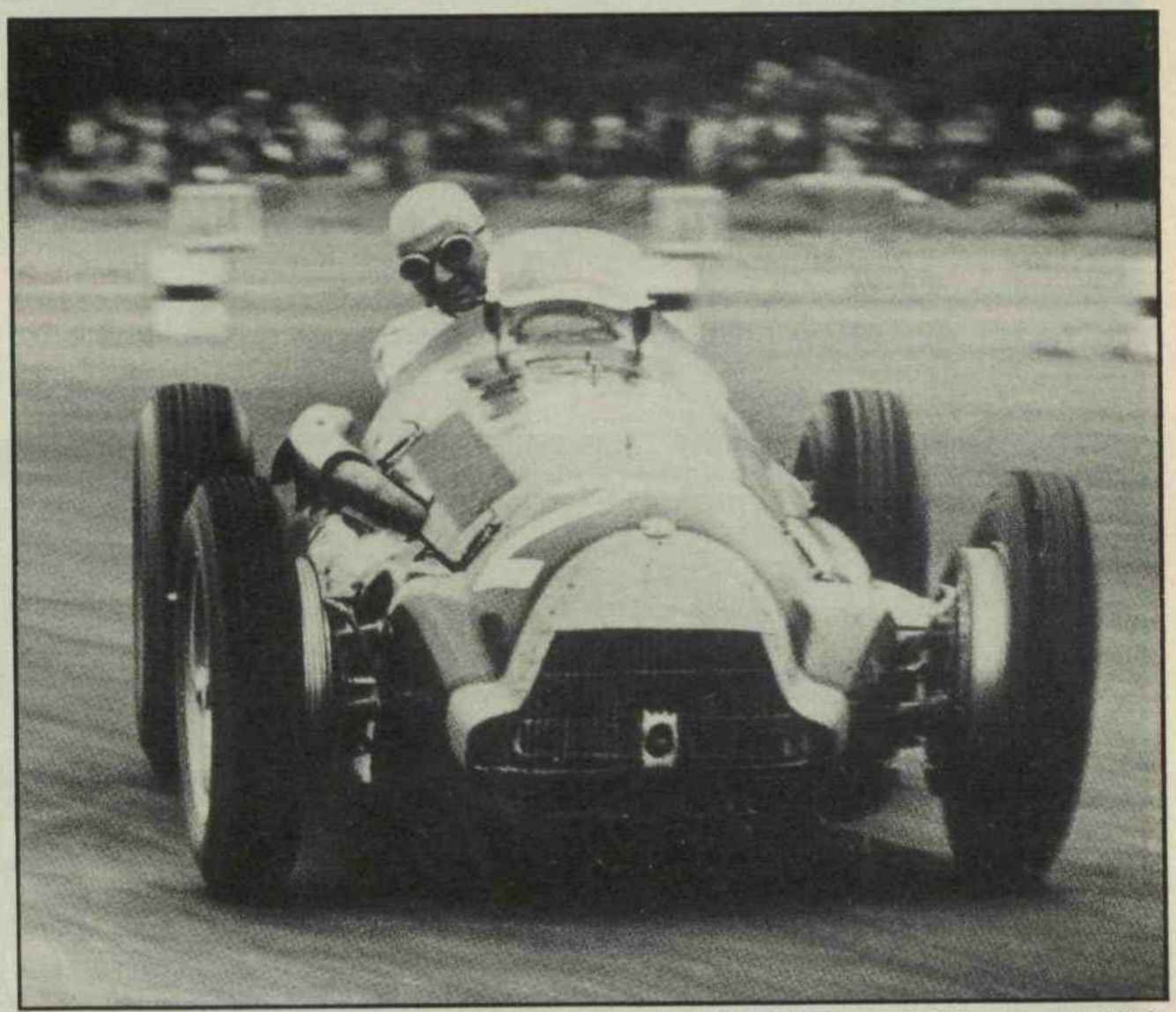
In 1935, Cobb's Napier-Railton won the Brooklands BRDC 500 Mile Race, and was some 15 mph faster than that year's Indy race.

Historic Photographs

With the ever rising values placed on historic cars there is a useful outlet in collecting other facets of the motoring sport. Photographs perhaps give greater accuracy than drawings and paintings, and the work of the great motoring cameramen,

such as George Monkhouse, Geoff Goddard, Alan Smith, Guy Griffiths and a very few others offer splendid and varied studies of motor racing. It is excellent that Griffiths, who has been taking great photographs for over 60 years, and is still doing so, his action racing shots as sharp as his studies of celebrities, has now made available some of his memorable pictures, through Axfords of The Hall, 82 Centurion Road, Brighton, E.Sussex, BN1 3LN. They have a catalogue of these pictures, priced at £2. A set of marvellous postcards costs £25 for 62 cards, B & W 40 x 50cm prints are available for £15 each (20 for £250) and colour prints for £20 each, or six for £100. The quality and perception of Guy's photographs are too well-known to need re-embellishment and the catalogue, a worthwhile item on its own, gives details of print sizes and 64 clear samples of their great variety, from veterans on the Brighton Run to magnificent action shots of the great drivers and cars of the 1940s to the 1960s, and portraits of these leading drivers, from Nuvolari downwards.

Guy raced himself in the 1930s, was responsible for the Griffiths Classic Sports-Car Formula, and knows what it is all about. I rate his photography as the best there is, and welcome this opportunity to give others access to his work. WB



A sample of Guy Griffiths' photographs – Fangio in a Tipo 158 Alfa Romeo at Silverstone in 1951.

JULY FIXTURES

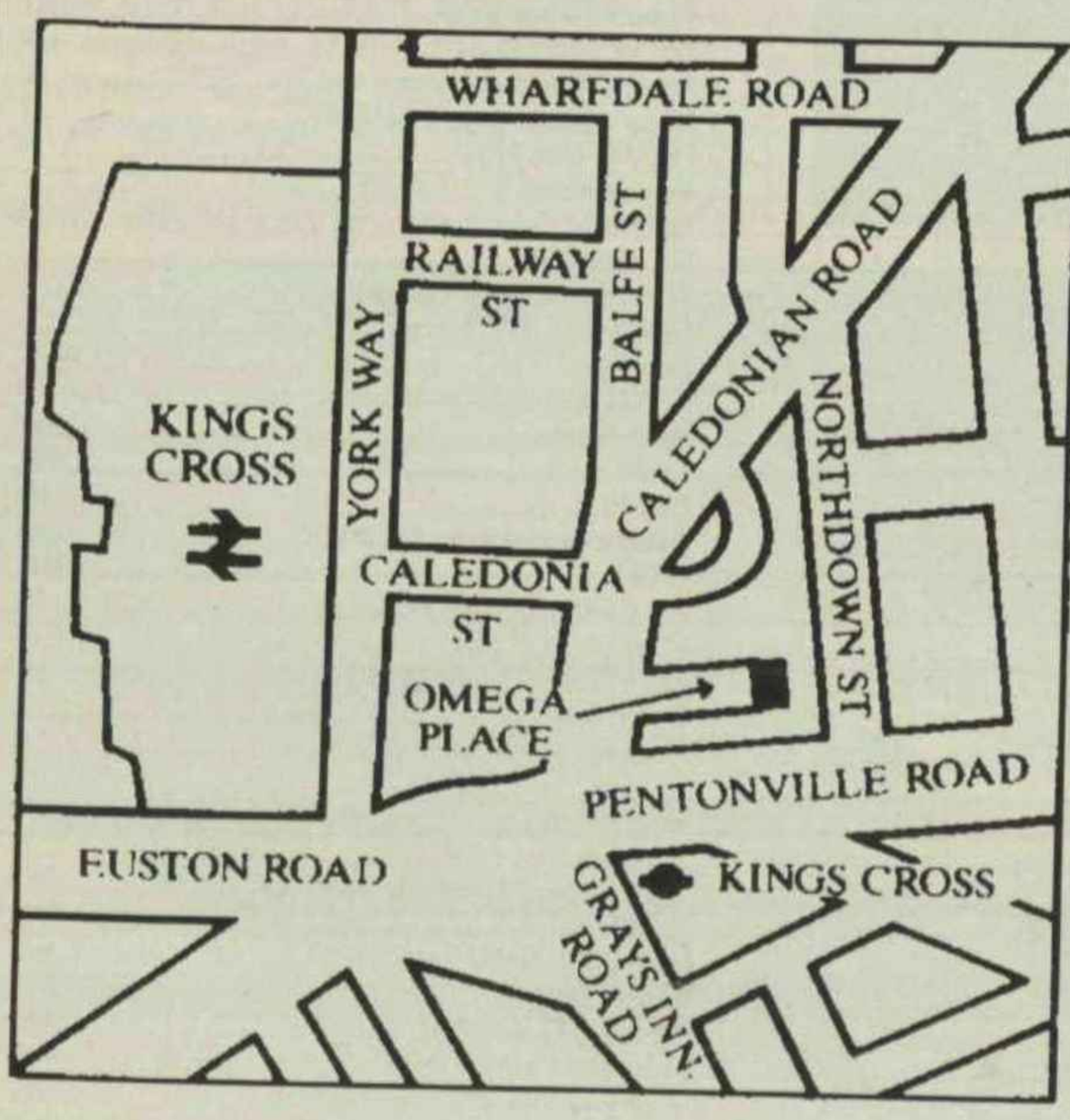
C—Closed. R—Restricted. N—National. INT—International

Date	*Organiser*	*Venue*	*Event*	*Type*
28 June-3 July	**Rally of New Zealand Ltd**	**Auckland, New Zealand**	**New Zealand Rally (WRC)**	**INT**
28-30 June	**AC Targa Florio**	**Ypres, Belgium**	**24 Hours d'Ypres Rally**	**INT**
29-30 June	**BHRC**	**Brands Hatch, Fawkham, Kent**	**BTCC, British F3000**	**INT**
29 June	**BRDC**	**Oulton Park, Tarporley, Cheshire**	**F3**	**INT**
5-7 July	**FFSA**	**Magny Cours, France**	**French Grand Prix**	**INT**
6-7 July	LIMRC	Lydden, Dover, Kent	Trucks, Inter Saloons	R
6 July	BRSCC	Castle Combe, Chippenham, Wilts	Ferraris, Modified Saloons	R
6 July	HSCC	Oulton Park, Tarporley, Cheshire	Historic Sports & Saloons, 500s	N
6 July	CPRC	Cadwell Park, Louth, Lincs	FF1600, First, MGs	N
7 July	VSCC	Mallory Park, Kirkby Mallory, Leics	Vintage racing	C
7 July	Swindon Phoenix CC	Swindon, Wilts	Rallycross	R
7 July	SMRC	Knockhill, Dunfermline, Fife	Race Meeting	R
7 July	JCC	Pembrey, Llanelli, Dyfed	JCC Championship Car Races	R
7 July	BRSCC	Donington, Castle Donington, Derby	Honda CRX, TVR Tuscan	R
7 July	Midland AC	Shelsley Walsh, Hereford	Hillclimb	N
7 July	SRC	Snetterton, Norwich, Norfolk	Thundersaloons, Forward, First	N
7 July	**Finnskoga MC**	**Holjasbanan, Sweden**	**Rallycross**	**INT**
7 July	**Indy Car Grand Prix Inc**	**Burke Lakefront Airport**	**CART**	**INT**
7 July	**AC Enna**	**Enna-Pergusa, Sicily, Italy**	**F3000**	**INT**
12-14 July	**RAC MSA**	**Silverstone, Towcester, Northants**	**British Grand Prix, F3, BTCC**	**INT**
14 July	**Meadowlands Grand Prix Inc**	**Meadowlands Sports Complex**	**CART**	**INT**
20 July	OPRC	Oulton Park, Tarporley, Cheshire	Brit F3000, FF1600, MGs	N
20 July	BARC	Harewood Hill, Nr. Leeds, Yorks	Hillclimb	N
20 July	OPRC	Oulton Park, Tarporley, Cheshire	Brit F3000, FF1600s, MGs	N
21 July	Darlington & DMC	Croft Circuit, Darlington	Rallycross	R
21 July	BRSCC	Cadwell Park, Louth, Lincs	Open FF1600, FF2000	R
21 July	BARC	Lydden, Dover, Kent	Single-seaters, Sports	R
21 July	Scottish MRC	Ingliston, Edinburgh	Race Meeting	R
21 July	BHRC	Brands Hatch, Fawkham, Kent	Forward, First, MGs	N
21 July	**HSCC**	**Donington, Castle Donington, Derby**	**Int'l Classic Sportscar Festival**	**INT**
21 July	**Molson Indy**	**Toronto Exhibition Place**	**CART**	**INT**
22-28 July	**Automobile Club Argentina**	**Buenos Aires, Argentina**	**Argentina Rally**	**INT**
26-27 July	**Northern Ireland MC Ltd**	**Belfast, Antrim**	**Ulster Rally**	**INT**
26-28 July	**Automobile Club von Deutschland**	**Hockenheim, Germany**	**German Grand Prix, F3000**	**INT**
27-28 July	**BRSCC**	**Brands Hatch, Fawkham, Kent**	**Interserie car races**	**INT**
27-28 July	**BRDC**	**Silverstone, Towcester, Northants**	**International Historic Festival**	**INT**
28 July	BARC	Gurston Down, Broadchalke, Wilts	Hillclimb	R
28 July	**LIMRC**	**Lydden, Dover, Kent**	**Rallycross Supaprix**	**INT**
28 July	BARC	Mallory Park, Kirkby Mallory, Leics	Modified Production Saloons	R
28 July	BRSCC	Snetterton, Norwich, Norfolk	FF1600, S2000, MGs	R
28 July	**BRSCC**	**Donington, Castle Donington, Derby**	**BTCC**	**INT**

Before going to a particular event, we strongly advise you to check with the organisers or circuit that the scheduled meeting is taking place



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Market Report

The economic situation is certainly not tipped for recovery, but is there a glimmer of hope for the classic car market filtering through the spring foliage? The Budget has strangely enough encouraged classic car ownership. The price of new cars have been increased with 17.5% VAT and company cars are now no longer the heavily subsidised perk of the past. The informed buyer is guided by the values of old; pedigree, performance and style rather than valves, technology or gimmicks.

The market for affordable, stylish convertibles is booming and together with the combination of a market on its knees and a continuing demand for an enjoyable means of transport these cars now represent an excellent opportunity. There are good cheap fruits to be picked from the trees of other peoples' cash needs.

Tangible assets that can be fun are the fashion and for continued long term growth the idea of a beautiful pedigree sportscar is attracting a greater following.

What would you prefer in your pocket, a building society book or the keys to your Aston Martin? Happy motoring...

Lamborghini Miura. 1968. Red. 10,000 kms only. Fantastic. LHD. Interesting history.
Lancia Flavia Vignale Spyder. Fulvia Zagato and Beta Spider. £2,995 - £7,995.
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The Bright Side

Dear Reader,

As we plough our way into the 1990s, and for many it is not proving too easy, there should be a simple goal, to reach the year 2000. Not because the year 2000 is particularly significant, unless you happen to have been born in the year 1900, but it does seem to be a nice round figure and a point at which to look back to see where we have come from. Much more important will be to spend a good deal of time looking to where we are going. Looking back is easy, looking forward is very difficult but very rewarding if you have an active and inventive mind, and every now and then I remark to a good friend of mine "We live in a wonderful world" and I really mean that.

Driving in the vicinity of London Airport at Heathrow one day when the sky was blue and there wasn't a cloud in sight, I saw Concorde zooming up into the pale blue yonder, followed by a lumbering Boeing 747 Jumbo carrying some 350 people, and then a small private Falcon executive jet. There were aircraft taking off for all parts of the world, the exclusive few in Concorde about to travel at twice the speed of sound, the public *en masse* heading for South Africa non-stop in the Jumbo, and the small group in the Falcon going about their private business. Meanwhile cars, coaches and giant articulated lorries were pounding westwards on the M4 and thousands of vehicles were circulating our vast capital city on the M25 Motorway.

I was driving a "state of the art" Porsche and was well aware that not far away were Mulsanne Bentleys, Mercedes-Benz, Jaguars, BMWs and a lot of other good cars transporting people about. Family saloons and small vans were hurtling along at speeds unobtainable by sports cars a few years ago, and in the distance I saw an HST train heading to the west on its 125 mph journey to Bristol. I could not help thinking "we live in a wonderful world" but I must admit that my second thought was "but we are all mad, because we are all going to finish up six foot under the ground, so why are we bothering?" Not long after these thoughts I am sure someone did something stupid on the M25 and the whole world that was circulating London came to a grinding halt and then the world was not so wonderful.

Then we have a bad air crash, or rail crash, and suddenly the world is even less wonderful, and then someone starts a war and you then know the whole world is mad. If you only look at the gloom and doom, as some newspapers do, then I feel you are not only heading for a mental home, but you are missing out on opportunities. Few things are perfect and even fewer remain perfect, so it pays to enjoy them while you can, and when they change you can either look back and enjoy that which has gone, or you can look forward to the next change, in anticipation of it being better. Which way you look depends entirely on yourself, it is your choice. My natural instinct has always been to look forwards, with occasional looks back into a period in which I have lived, but at the time was too young to appreciate our wonderful world. I have no interest in looking back for the sake of being fashionable, which I think is what the word "Nostalgia" is all about.

Recently there was a gathering at Donington Park to celebrate the 30th anniversary of the Jaguar E-Type and my first instinct was "Why?" For its time the E-type was a giant of a car and I enjoyed more than 200,000 miles of European motoring in a couple of 4.2-litre E-types and have a lot of happy memories. I also have a lot of happy memories of a lot of other things I have done, but I have little interest in celebrating any of their anniversaries, whether the first or the ninth. I must admit to celebrating my own birthday 70 years after it happened, but that was a personal thing, not an organised rally. When I saw the first E-type I must admit that I raised an eyebrow and jumped at the chance of trying it, but I soon gave it back for there were too many things not to my liking. This was in the days of 600 miles in the day motoring about Europe and the 3.8-litre E-type had awful seats, a terrible gearbox, abysmal headlamps and suspect disc brakes, but the engine and the looks were superb, but they were not sufficient to tempt me. Four years later the 4.2-litre was introduced with most of the faults corrected and I was sold on the E-type and motored impressively for the next ten years in a perpetual state of wonderment, saying to myself, "this is unreal, it can't go on." This was before speed limits or radar had been invented, when traffic was still relatively scarce, when such European motorways that existed were almost empty and the E-type was King of the Road and you could spend all day cruising at well over 100 mph without let or hindrance, as the saying goes. But those days are long gone, they were the wonderful world of the nineteen-sixties. If I wanted to pay tribute to the E-type Jaguar it would be in 1994, but why 30 years anyway? If it is just a convenient opportunity for a jolly among friends, fair enough, they can happen at any time and the more the merrier.

Some years ago I set off with some friends in vintage cars to attend a gathering due to take place at an old disused racing circuit. Inevitably, we were late in leaving, and even later arriving, and the gate guardian said: "Oh dear, you're too late, they all left some while ago, but go on in, as you may find the answer still there." We went in and the place was deserted, apart from two other cars that had arrived as late as we had. None of us knew where the Run had gone to, or where the lunch-stop was due, or even if anyone was coming back, so we had our own "jolly" on the spot. It was a glorious summer's day so after nosing around the place and driving round the circuit the four vehicles went off in convoy to a local pub for lunch and a chat. By mid-afternoon we set off home having had a most enjoyable day that was totally impromptu and we wondered if all those who had turned up on time had as nice a day and those that were late!

Looking back on my Jaguar days I remember being told by a number of Grand Prix racing people who were using 3.8-litre E-types for transport, not to have chromed-wire wheels. If you were going to use the performance and roadholding of an E-type, especially on European roads, you would crack or break spokes, especially in the back wheels. It was something to do with the chrome-plating process, so I took their advice and used painted wheels; not that I wanted chrome wheels anyway. Nowadays when I see a pristine E-type with chrome wire wheels I cannot help looking sideways at it, especially if it is cruising along at 45 mph on the way to a Concours d'Elegance, as I go by at 70 mph in my Ford Diesel van with my racing motorcycle in the back. To each his own.

I am sure that most readers follow the "Old Car" Auction world, even if few of you ever get involved financially, and the fact that there has been some serious changes taking place cannot have been missed. I would not go so far as to say that the selling of old cars by auction has collapsed, but the top of the icing on the cake has gone, and at one point the icing seemed to be thicker than the cake. The peak of this world for the moneyed few and the speculators and entrepreneurs, was at Monte Carlo just prior to the Grand Prix, but this year the peak was very flat. Christie's, Sotherbys and Brooks all had exotic auctions this year, which in itself seemed unreal. One auction at Monte Carlo seemed enough, but three within hours of each other seemed unreasonable.

From the auctioneers point of view none of them were a roaring success, exotic cars just did not sell and there was an undercurrent of doom and gloom. But not from one of the Auction Houses, they were priding themselves on the fact that a lot of their cars NEARLY made their bottom price estimates. They did not sell, but that did not seem to be important! I could not help likening it to the Grand Prix qualifying scene, where the team that was 27th and failed to get into the race by a couple of hundredths of a second, were congratulating themselves on NEARLY qualifying for the grid. I suppose it is like the teams who NEARLY win. What you might call looking on the "bright side".DSJ

●Things They Say

Make your minds up, lads! After the first big race on the completely rebuilt Silverstone circuit drivers were heard to say that it was all right, but too bumpy! After some initial testing on the brand new Formula 1 circuit at Magny Cours in France, drivers were heard to say that it was all right, but was too smooth.



The Williams-Renaults were the class of the field in Canada, only bad luck robbing either one of victory.

Broken Spells

Montreal, June 2

After the first four Grand Prix races of this season, in the USA, Brazil, Italy and Monaco, the domination by the combination of Ayrton Senna, McLaren and Honda with the strong support of Goodyear tyres, Shell fuel and oil and many other branches of the motor racing industry, had the Formula 1 world spellbound. Four pole positions, four race victories, 1st and 2nd at the Imola race, it was all becoming too much domination by one team and some people were ready to give up and start thinking about next year! Fortunately there were some who were not prepared to accept this domination as inevitable, not only drivers, but car designers, engine specialists, fuel companies and even tyre manufacturers. The fact that Gerhard Berger, in an identical car to Senna, could be beaten, and frequently was beaten, gave hope to many, though there were few who were prepared to say how Ayrton Senna was going to be beaten.

Alain Prost seemed to have unwittingly destroyed what morale there was in the Ferrari team, just as he nearly did with the turbo-Renault team and then the McLaren-Honda team, but the only other truly front-running team, Williams-Renault was totally unaffected by the little Frenchman, and were actually encouraged by the fact that Ferrari were opposition that could be dealt with comparatively easily. The Senna/McLaren/Honda combo was something else altogether, but not invincible as far as Patrick Head, the leader of the Williams car-design team, and Bernard Dudot, the leader of the Renault engine design team, were concerned, and these two have been working well together for a long time. A quick look back at the previous four races shows that the Williams FW14 and its Renault V10 power unit could almost match the McLaren MP4/6 with its Honda V12 engine and there was not a lot missing from the efforts of the two Williams drivers. Nigel Mansell we know always gives of his best, and Riccardo Patrese was surprising everyone by his quiet application to the job in hand and lure of possible victory, which was occasionally within sniffing distance.

It would be nice to record that the Frank Williams team beat the McLaren team soundly and won the Canadian Grand Prix, but this did not happen. They beat the McLaren team in qualifying and led them in the race, but before the chequered flag they stumbled and fell, but this time there was no McLaren to pick up a lucky win, nor even any Goodyear-shod runners who could benefit. The result was a win for Nelson Piquet in a Benetton B191 running on Pirelli tyres, and powered by a works Cosworth V8, fuelled and oiled by Mobil, thus breaking a lot of established 1991 spells.

After the Friday early morning pre-qualifying session, in which the Dallara-Judd V10 cars of Pirro and Lehto, and the Jordan-Cosworth V8 HB cars of de Cesaris and Gachot had little difficulty in taking the all important top four places, the serious business of the Canadian Grand Prix began to unfold. The interesting surface in the island in the great St Lawrence river had been resurfaced for much of its length, a number of iron covers over inspection pits of the underground electrical system of the island were moved, and the very fast ess-bend running from the final straight onto the straight past the pits had been transformed into a much tighter and slower ess-bend, calling for some pretty heavy braking from nearly 190 mph, all of which seems to satisfy the majority of the Formula One world.

The morning was grey and dull, with threatening rain which did actually arrive before the morning test session was over, which caused a bit of an unreal situation in the tentative results of the morning. There were a few minor changes in the pit lane scene, with Stefan Johansson replacing Alex Caffi in the second Footwork-Porsche, due to the little Italian having been involved in a road accident in his home town of Brescia, and Johnny Herbert was taking the place of Julian Bailey in the second Lotus. Of more specific interest was Ford supplying the Jordan team with HB Cosworth engines almost to the same specification as those used by the Benetton team, and the Ferrari team no longer being managed by the publicity-conscious Cesare Fiorio, his place being taken by what almost constitutes a "committee".

Everything seemed to be progressing reasonably well in view of the fact that there had not been any previous practice nor testing on this scenic public park circuit, when it was all brought to a halt by the red flag. Senna had come to rest on the far side of the circuit with his V12 Honda engine broken and a lot of oil about the place, and Piquet was heading for the pits with a trail of gearbox oil following him. As if that was not bad enough the unfortunate Patrese had been following Senna and slid on the oil and crashed heavily, giving himself a nasty pain in the neck, which prompted the F1 doctor to prescribe "rest". Ron Dennis took the blame for the Honda engine blow-up by indicting his own inspection department, which had caused a blockage to the oil system, because everyone knows that Honda engines don't "blow up". This lost Senna a lot of testing time as he had to change his programme to the spare car, and by the time he was ready to set a time on qualifying tyres a drizzle of rain had begun.

Up until the accident Patrese and Senna had been setting the pace, with Mansell in strong support, but just before the track started showing signs of dampness Roberto Moreno got his Benetton to the top of the list, where he stayed. During the break of one and a half hours between the end of

NON-QUALIFIED

No	Driver	Nat.	Car/Engine	Tyres	Best Lap	Result
18	Fabrizio Barbazza	I	AGS JH25-Cosworth V8 DFR	G	1 min 24.491s	DNQ
17	Gabriele Tarquini	I	AGS JH25-Cosworth V8 DFR	G	1 min 24.653s	DNQ
8	Mark Blundell	GB	Brabham BT60Y-Yamaha V12	P	1 min 24.661s	DNQ
12	Johnny Herbert	GB	Lotus 102B-Judd EV8	G	1 min 24.732s	DNQ
14	Olivier Grouillard	F	Fomet 191-Cosworth V8 DFR	G	1 min 24.795s	DNPQ
34	Nicola Larini	I	Lambo 2-Lamborghini V12	G	1 min 25.736s	DNPQ
35	Eric van de Poele	B	Lambo 2-Lamborghini V12	G	1 min 26.900s	DNPQ
31	Pedro Chaves	P	Coloni C4-Cosworth V8 DFR	G	1 min 34.475s	DNPQ



The Benetton-Cosworths were never quite front-runners, but nevertheless could be included in the premier group rather than be classified as "best of the rest".

morning testing and the start of qualifying, a time when those with nothing to do go and have lunch, there was a lot of engine changing going on at the top end of the pits, as well as repairing, and also at the lower end of the list, but as always, a day's work was accomplished in 1½ hours by the hard-working mechanics and all was virtually ready for the all-important qualifying hour, all except one thing — the weather! The rain was coming down steadily and there wasn't a qualifying tyre in sight, everyone being mounted on heavily treaded rain tyres, because regardless of the weather, qualifying was going to take place, and all times were going to count for grid positions. If the rain was going to stay, and get worse the following day, a reasonable Friday time might be all-important. Though the lap times were 15 seconds down on what they should be the competition and effort was undiminished and it became clear that Williams-Renault had a better overall set-up of handling, traction, stability and engine management, which Nigel Mansell instantly made good use of, than McLaren-Honda or Ferrari. In a fair amount of pain Patrese did a valiant job but could not be expected to give much support to his team-mate at this juncture, and Jean Alesi was doing his utmost to lift Ferrari out of their own mire by nearly matching Mansell's performance.

Senna was a distant (eight-tenths of a second, which is distant in Formula One language) third, with the chirpy Moreno just behind him, and de Cesaris by far "the best of the rest". Overall the first day of the Canadian GP ended on a slightly gloomy note.

On Saturday morning the sun was shining, the roads were dry and things began to buzz. Lap times were better than last year, in spite of the slower ess-bend at the end of the lap, and continual improvement on all fronts was the real name of the game. Once again the Williams-Renault package was showing a marked superiority, and Patrese was back in front of his team-mate, regardless of any neck pains. Normally this would have put him second to Senna, but this time Senna was down in 3rd place. For a while it looked as though 1 min 20 secs was going to be a natural barrier to aim for, but as "testing" ended and everyone did a few laps to establish qualifying conditions in readiness for the serious business of the afternoon, Patrese, Mansell and Senna all got into the 1 min 19 sec bracket. Significantly Bertrand Gachot had his Jordan 191 in "best of the rest" position, ahead of all the B-teams, while in the Brabham team there was a good deal of Japanese concern over the Yamaha engines.

During the lunch break the sun began to get really hot, and by the time qualifying began it was almost too hot for efficient high-speed conditions and instead of the pace carrying on below 1 min 20 sec a lap, as the morning had indicated, it took half-a-second step backwards, but it did not make any real difference to the overall scene. The two Williams-Renaults still dominated the scene, the Renault V10 engines, with their new 1991 deep-throated exhaust and obvious impressive torque spread, were being used to the full by the Williams chassis, suspension, brakes and aerodynamics, to say nothing of the drivers; and the ELF petrol company mentioned that they had supplied Renault with some special "qualifying fuel".

Patrese was alone in breaking 1.20 on the first runs, Senna having set the ball rolling with 1.20.481, and Prost nudging it with 1.20.656, but Mansell was suffering his usual frustrations which always only seem to affect him! He was all set to go for his first run when the Williams suffered a fault in the electrical system of the gearbox operation and though Mansell sent a signal to the control unit that he wanted first gear the car sat there fatly in neutral gear position.

This was eventually sorted out and he roared off down the pit lane to the exit, where he had to stop for the mandatory tyre mark check, and at that point the electro-mechanical over-ride control of the clutch failed to function and the clutch did-not want to know about freeing, with the result that the engine stalled. By the time Mansell had walked back to the Williams pit the mechanics had almost got his spare car ready, so he was soon into that and away. He put in a first class run with a lap of 1.20.295 and went on to another one in 1.20.954, so there was not much wrong with the spare car, but Patrese was holding pole position with 1.19.893. There are times when one is prompted to think that maybe the modern hi-tech racing car is getting too complex for the fiery Birmingham brain.

Looking remarkably unflustered, though still in some pain with his neck, Patrese did his second run and improved his time to 1.19.837 indicating quite clearly that his first one had not been a fluke, and the Renault engineers were looking very contained with the whole affair. Senna improved his time by over a tenth of a second, but it was not even quick enough to challenge Mansell's ruffled run, and when Mansell went out for his second run and improved to

1.20.225, the Senna/McLaren/Honda combination knew it was beaten fair and square. They were beaten by an all-round competent package, rather than one outstanding feature.

All this excitement for the front of the grid tended to overshadow anything that was happening at the back of the grid, barely four-and-a-half seconds away, but it might just as well have been four-and-a-half hours! The two Italians Tarquini and Barbazza failed to get their AGS-Cosworths onto the grid, as did the two British drivers Blundell (Brabham-Yamaha) and Herbert (Lotus-Judd). The Footwork-Porsche team were a little happier at getting both A12 cars in, and Eddie Jordan was well pleased with his two drivers being in the middle of the grid on this challenging circuit. Team Tyrrell would have liked their drivers to have been a bit nearer the front with their Honda V10 engines, but were not unhappy with actual race prospects.

Sunday was a beautiful sunny day, Canada at its best, and in spite of fairly high admission charges, a strong crowd assembled in anticipation of seeing something exceptional, especially with the Williams-Renault cars in first and second places on the grid and the reigning World Champion in third place; a very unusual position for Ayrton Senna, who was making no excuses, he was simply "out-speeded". As the morning warm-up half-hour started electrical trouble reared its head again in the Williams pit. Patrese's engine would not start, not due to engine trouble, but caused by a failure of the electrical system that deals with the collection from the tank and the distribution to the intake system. While this does not sound very much there are a lot of "gizmos" involved and by the time it was sorted out the test half hour was over, so there was no opportunity to run the car. Meanwhile Mansell was flying the flag valiantly by being fastest in race trim still leading the two McLaren-Hondas.

By 2pm when the race started it was very hot (by 1991 standards) and there was some concern over tyre wear and possible pit-stops for fresh tyres, so the feeling was that there would not be a lot of furious motor racing in the opening stages of the 69 lap race. Before the parade lap got under way Martini's Ferrari V12 engined-Minardi was wheeled off the grid with brake problems and he lined up at the pits exit ready to start the race in the spare car, once the race was under way, according to regulations. By setting off the moment the pit lane had opened Patrese managed to squeeze in four laps before taking his place on pole position on the grid, now confident that his car was alright, but less confident about his personal stamina for what looked like being a hard race. Mansell was in a very buoyant and tigerish mood, and Senna was quietly viewing the whole situation, ready to improvise instantly as the opportunities arose, but not totally convinced that opportunities were going to arise.

As the field charged down to the first corner Mansell elbowed his way past Patrese and into the corner as if he was racing a deadly rival while Patrese, who has matured enormously in recent times, made no difficulties for his team-mate and settled into his own pace, leaving Mansell forging ahead as if he had Senna and Prost on his tail. In fact, Senna was on nobody's tail, following Patrese at a comfortable distance in third place, with Prost very close on the McLaren's tail. The rest of the field was fairly orderly except that Pirro had collided with de Cesaris and stopped at the pits for an inspection and new tyres. However, before the race settled down Alboreto was out, with Porsche engine trouble, and Suzuki was out of his Lola very smartly when a massive fuel leak had set the whole of the back of the car on fire. Berger was into the pits with electrical trouble causing a very flat-sounding Honda engine and after one more lap was out of the race.

By 10 laps an interesting and satisfactory pattern had formed. True to practice portents the two Williams-Renaults were looking comfortable in first and second places, with Senna watching them from a safe distance behind, though Prost was anything but a safe distance from the McLaren and was showing signs of wanting to get

STARTING GRID

6 **PATRESE** Williams FW14 1 min 19.837s (2) 1 min 37.593s (1)	5 **MANSELL** Williams FW14 1 min 20.225s (2) 1 min 35.065s (1)
1 **SENNA** McLaren MP4/6 1 min 20.318s (2) 1 min 35.843s (1)	27 **PROST** Ferrari F1/91 1 min 20.656s (2) 1 min 36.003s (1)
19 **MORENO** Benetton B191 1 min 20.686s (2) 1 min 35.897s (1)	2 **BERGER** McLaren MP4/6 1 min 20.916s (2) 1 min 38.223s (1)
28 **ALESI** Ferrari F1/91 1 min 21.227s (2) 1 min 35.257s (1)	20 **PIQUET** Benetton B191 1 min 21.241s (2) 1 min 37.354s (1)
4 **MODENA** Tyrrell 020 1 min 21.298s (2) 1 min 38.218s (1)	21 **PIRRO** Dallara BMS191 1 min 21.864s (2) 1 min 39.017s (1)
33 **de CESARIS** Jordan 191 1 min 22.154s (2) 1 min 37.097s (1)	3 **NAKAJIMA** Tyrrell 020 1 min 22.262s (2) 1 min 41.100s (1)
16 **CAPELLI** Leyton House CG911 1 min 22.443s (2) 1 min 40.906s (1)	32 **GACHOT** Jordan 191 1 min 22.596s (2) 1 min 38.383s (1)
24 **MORBIDELLI** Minardi M191 1 min 22.993s (2) 1 min 39.780s (1)	25 **BOUTSEN** Ligier JS35 1 min 23.040s (2) 1 min 38.517s (1)
22 **LEHTO** Dallara BMS 191 1 min 23.040s (2) 1 min 38.435s (1)	23 **MARTINI *** Minardi M191 1 min 23.125s (2) 1 min 37.864s (1)
29 **BERNARD** Lola L91 1 min 23.260s (2) 1 min 38.013s (1)	7 **BRUNDLE** Brabham BT60Y 1 min 23.516s (2) 1 min 38.405s (1)
9 **ALBORETO** Footwork A12 1 min 23.529s (2) 1 min 41.196s (1)	30 **SUZUKI** Lola L91 1 min 23.585s (2) 1 min 39.696s (1)
15 **GUGELMIN** Leyton House CG911 1 min 23.650s (2) 1 min 38.689s (1)	11 **HAKKINEN** Lotus 102B 1 min 23.923s (2) 1 min 42.900s (1)
10 **JOHANSSON** Footwork A12 1 min 24.433s (2) 1 min 49.019s (1)	26 **COMAS** Ligier JS35 1 min 24.460s (2) 1 min 39.670s (1)

N.B. Friday Qualifying (1) wet. Saturday Qualifying (2) dry.
* Started from pit lane in spare car.



Piquet's win at last broke the Senna\McLaren\Honda domination of this year's Grands Prix.

Martin Brundle and the Yamaha-powered Brabham have still to show their true potential, the Englishman retiring from the race after one third distance.

by, something we don't normally see the little Frenchman doing. Alesi was leading Piquet for fifth place, but Moreno had disappeared down the field and into retirement after spinning at the ess-bend by the pits. This was the real world of Grand Prix racing, but the following world of miscellany showed a far busier situation with some good racing going on. The two bright green Jordan cars were going really well and by lap 10 had Modena's Tyrrell neatly sandwiched between them, de Cesaris leading and showing speed without his normal abandon. Both Jordans had started on softer tyres than proved wise, and had to stop for a change when the wear rate became unacceptable, which allowed Modena to get away. Mixing it with the Jordans was Capelli in the first of the Ilmor V10-powered Leyton House cars, with Lehto going well in the Judd V10-powered Dallara of the Scuderia Italia, both of their respective team-mates being far behind with unhappy feeling cars, Gugelmin in 19th place and Pirro in 21st place.

By 20 laps not a lot had changed, except that Martini had now climbed up to midfield from his pitlane start in the spare Minardi. But shortly after that we lost Hakkinen (Lotus) and Morbidelli (Minardi) who both spun off and stalled their engines in separate incidents, and Brundle (Brabham) when his engine failed. Prost had suffered a malfunction of the electrical system of his gear-selection mechanism, and this unexpected pause in neutral allowed Piquet and Alesi to go by, but before 30 laps had been covered by the flying Mansell in his Williams-Renault something much more serious occurred. Senna's McLaren-Honda went quiet as it was accelerating away from the eastern hairpin, and it coasted to a stop with a lack of electricity in some of its vital engine areas, and before the spectators really got to grips with this unpalatable news there was another ominous silence, from Prost's Ferrari this time as it howled past the pits. An electrical gremlin had re-appeared in the gear-selection system and the car was left in neutral, so that Prost had little option than to park on the grass verge and walk back across the track to regain the pits.

It was beginning to look as if some anti-motor racing nut with a laser scanner, or something was beaming onto the hi-tech cars of Formula One, picking them off at random. The next to go was Alesi, but his retirement was a good old fashioned cloud of smoke, indicative of a piston breaking up. Then Patrese went missing, and Piquet and Modena went by into second and third places, but the Italian eventually appeared going slowly with nothing worse than a deflated rear tyre, punctured by something picked up on the track. New tyres got him back in the race, but the delay had dropped him to sixth place, one lap behind Mansell who was way out in front in full command of the situation. Both Jordans had been in for new tyres and were running splendidly and working their way up the field.

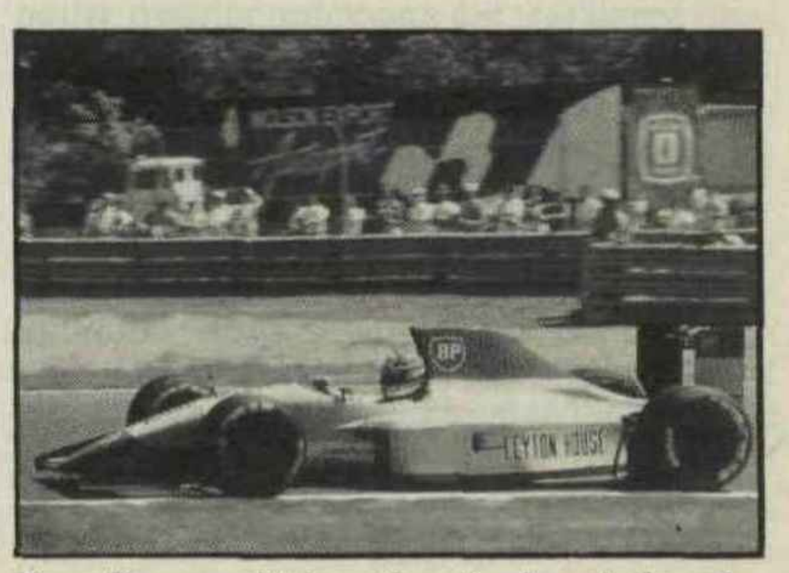
We were now past lap 40 and as a race not a lot was happening, but Mansell was doing a fine job out in front, even though it was difficult to believe, and more difficult to believe was the simple fact that he had been there since the first corner of the race. Piquet was securely in second place, thanks to failures of faster cars, but was doing all that could be expected of him in the underpowered Benetton, however brilliant the chassis might be. Capelli had hung on tenaciously and had climbed to fourth place, albeit a lap behind the leader, but even that comforting place was denied him when the Leyton House disappeared in a cloud of blue smoke emanating from the Ilmor engine. This allowed Lehto to inherit fourth place, but he did not enjoy it for long for Patrese soon caught him and went by. The Williams driver had been a bit worried about his personal stamina following his practice accident, but he need not have worried because he was feeling fine, and intent on getting back into second place. A pit stop on lap 47 by Modena for new Pirellis elevated Patrese into third place, but all thoughts of annexing Piquet's second place evaporated when the Williams gear-selection electronics missed a beat. Knowing all about the electrical system Patrese settled on nursing it in a secure third place, rather than risk trouble

trying to get second place. Around this time Mansell had eased off and let Patrese go by to unlap himself, and the two Williams cars ran round in close company so that they would end the race together, even though they were only a few yards from being a complete lap apart. In first and third places, with second place man Piquet safely half a lap away, the Williams pair prepared for a fairly dominant end to a performance that they had maintained all weekend. Before the end of the 69 laps the warning "bleep" that the gearchange electronics had given Patrese manifested itself by causing a problem on downward changes, but Riccardo was in sympathy with it and eased off a lot and nursed it along, intent on keeping going to the end.

This allowed Modena to bring the Tyrrell-Honda V10 within menacing distance, with Mansell still between the two cars, following Patrese's slowing pace, but not knowing why. When it became merely a matter of time before Modena caught Patrese and took second place, Mansell wisely decided to get out of harm's way, rather than get involved and the easiest way to do that was to speed up and go past his sick team-mate, and disappear into the middle distance, especially as his car was running perfectly. Modena went by into third place right on schedule, on lap 67, at which point Mansell was on lap 68 and as he started his 69th and last lap "our Nige" began waving to the spectators. At the finish line the chequered flag was ready to be waved at the worthy Mansell, but it was Piquet's Benetton that appeared, and there was some confusion for a moment or two, but the circuit television showed Mansell had stopped coming out of the eastern hairpin. Modena (Tyrrell), Patrese (Williams), de Cesaris (Jordan) and Gachot (Jordan) were all flagged-off after Piquet, now being on the same lap as him, and though Mansell's car was stationary on the grass verge his time for 68 laps gave him sixth place, but one lap behind the winner. Nelson Piquet was delighted to drop into first place at such a late stage in the race, and made no attempt to hide his elation, nor to make any pretence that he had actually won the race. Yes, of course he was sorry for poor Nigel Mansell, but he was delighted with the result. Even more delighted was the whole Jordan team, from Eddie Jordan himself right down to the newest well-wisher, and the whole team were last seen trying to get drunk on 7UP. Fourth and fifth by sheer hard work and hard driving in their first half-season is something not many new teams have ever achieved.

Mansell came back to the pits on the side-pod of Patrese's car on the slowing down lap, and even that breezy ride did nothing to disperse the total disbelief that a car that had performed perfectly for 68¾laps should suddenly peter out, without any prior warning. As he had changed down from fifth to fourth gear the gearbox suddenly went into a neutral between two gears and at that point the engine stopped. Unable to get into gear there was no way to try and bump-start the engine and the car had rolled to a stop surrounded by total disbelief. When it was retrieved it started up and everything worked! The only technical reason could be a random Beta particle among the chips; or was there really a maniac with a Laser Beam projector out on a boat in the mighty St Lawrence river?

With Senna not being on pole position, Honda engines blowing up in practice and failing in the race, all the front-runners having trouble, a V8-engined car winning the race, Pirelli tyres scoring first and second, and Mobil fuelling the winning car, not only were a lot of spells broken, but one left the Ile Notre-Dame looking over one's shoulder rather uneasily. But whatever it was about the Canadian GP it was not one to have missed. DSJ



Capelli got as high as fourth place before the engine let go.

RESULTS

Canadian GP, Montreal June 2
69 laps of 4.430 km circuit (305.670 km; 189.934 miles)

Pos	Driver	Nat.	Car/Engine	Tyres	Time	Best Race Lap	On Lap
1st	Nelson Piquet	BRA	Benetton B191-Cosworth V8 EXP	P	1h 38m 51.490s	1m 23.758s	34
2nd	Stefano Modena	I	Tyrrell 020-Honda V10	P	1h 39m 23.322s	1m 23.528s	52
3rd	Riccardo Patrese	I	Williams FW14-Renault V10	G	1h 39m 33.707s	1m 22.672s	48
4th	Andrea de Cesaris	I	Jordan 191-Cosworth V8 HB	G	1h 40m 11.700s	1m 24.105s	54
5th	Bertrand Gachot	L	Jordan 191-Cosworth V8 HB	G	1h 40m 13.841s	1m 24.479s	50
6th	Nigel Mansell	GB	Williams FW14-Renault V10	G	1 lap behind – not running	1m 22.385s	65
7th	Pierluigi Martini	I	Minardi M191-Ferrari V12	G	1 lap behind	1m 25.237s	46
8th	Erik Comas	F	Ligier JS35-Lamborghini V12	G	1 lap behind	1m 25.877s	36
9th	Emanuele Pirro	I	Dallara BMS 191-Judd V10	P	1 lap behind	1m 25.183s	45
10th	Satoru Nakajima	J	Tyrrell 020-Honda V10	P	2 laps behind	1m 25.620s	65
11th	Mauricio Gugelmin	BRA	Leyton House CG911-Ilmor V10	G	retired on lap 62	1m 28.212s	48
12th	J.J. Lehto	FIN	Dallara BMS 191-Judd V10	P	retired on lap 51	1m 24.680s	48
13th	Stefan Johansson	SWE	Footwork A12-Porsche V12	G	retired on lap 49	1m 28.420s	38
14th	Ivan Capelli	I	Leyton House CG911-Ilmor V10	G	retired on lap 43	1m 24.547s	40
15th	Jean Alesi	F	Ferrari F1/91-Ferrari V12	G	retired on lap 35	1m 24.125s	32
16th	Eric Bernard	F	Lola L91-Cosworth V8 DFR (Hart)	G	retired on lap 30	1m 26.510s	28
17th	Alain Prost	F	Ferrari F1/91-Ferrari V12	G	retired on lap 28	1m 24.186s	25
18th	Thierry Boutsen	B	Ligier JS35-Lamborghini V12	G	retired on lap 28	1m 26.469s	27
19th	Ayrton Senna	BRA	McLaren MP4/6-Honda V12	G	retired on lap 26	1m 24.647s	19
20th	Mika Hakkinen	FIN	Lotus 102B-Judd EV8	G	retired on lap 22	1m 26.626s	18
21st	Martin Brundle	GB	Brabham BT60Y-Yamana V12	G	retired on lap 22	1m 27.549s	13
22nd	Gianni Morbidelli	I	Minardi M191-Ferrari V12	G	retired on lap 21	1m 26.576s	16
23rd	Roberto Moreno	BRA	Benetton B191-Cosworth V8 EXP	P	retired on lap 11	1m 25.690s	9
24th	Gerhard Berger	AUT	McLaren MP4/6-Honda V12	G	retired on lap 5	1m 29.815s	3
25th	Aguri Suzuki	J	Lola L91-Cosworth V8 DFR (Hart)	G	retired on lap 4	1m 29.644s	3
26th	Michele Alboreto	I	Footwork A12-Porsche V12	G	retired on lap 3	1m 36.279s	2

Winner's Average Speed: 185.520 kph; (115.276 mph) **Conditions: Sunny & hot**

Fastest Lap: Nigel Mansell (Williams FW14-Renault V10) 1m 22.395s on lap 65; 193.579 kph (120.284 mph)

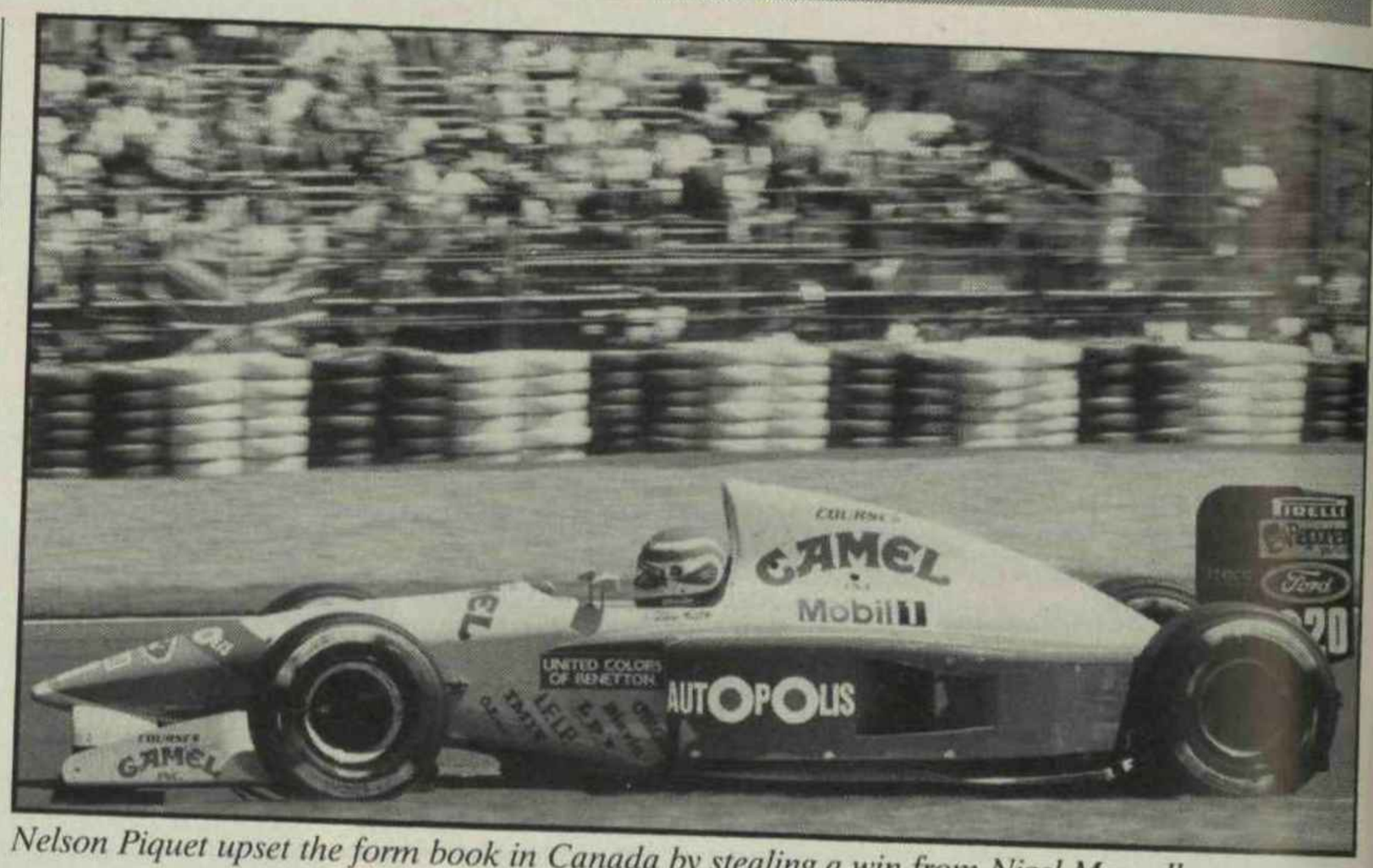
When the Light turns Green

If racing CARS interest you more than racing DRIVERS, and MOTOR RACING is more important to you than DRIVER RACING, then Friday and Saturday before a Grand Prix holds more in store than actual race day. These are the days of morning free-for-all testing for 1½ hours and afternoon qualifying for starting grid position for one hour. Sadly, the normal spectator cannot get very close to the interesting action of these two days, for much of it is hidden away in the pit lane garages or in the paddock, and it is only the end result that the spectator can see, when a driver goes out and makes fastest (or slowest) time of the day. What you can be sure to see is the car/driver/team effort working at its maximum for one lap, though naturally you see the combination for three laps; one warming up lap, one "flyer", and one slowing down lap, but you have to be paying close attention all the time for unlike true qualifying, as used at Indianapolis where drivers go out individually, a pole position lap can be at any time during the period between 1pm and 2pm.

For those fortunate enough to be allowed into the pit lane the signs that Senna, Mansell, Patrese or Prost etc, are about to go out "for a quick one" can easily be read, and a good circuit commentator can also read the signs and let the spectator know over the public address system, providing a car is not going past your particular loud-speaker at the time. Electronic display screens are gradually appearing at many circuits, to replace loudspeakers that cannot be heard, and also closed circuit television is making it possible to follow a car after it has gone out of your sight.

Monaco had such a screen mounted high up, overlooking the harbour and if, for example, you were watching along the harbour front and around the swimming pool complex, you could see a car coming out of the tunnel and down through the harbour "chicane" on the large screen, right to the moment it came into view. When it disappeared round Rascasse hairpin you could pick it up on the screen again for the rest of the lap. It was all a bit unreal at times, and some people were actually watching the screen all the time, even when the car was passing in front of them, which made me wonder why they bothered to buy a seat in the expensive grandstand! Admittedly the magic-screen does not give you the sound and the vibrations, but I suppose that will come eventually.

In the first qualifying hour at Monaco the air temperature was so low that qualifying tyres were lasting longer than expected, and it was possible to do more than one quick lap on them, and a number of drivers made more than the usual two fast laps. Near the end of the hour the two McLaren drivers went out for a third run, setting off



Nelson Piquet upset the form book in Canada by stealing a win from Nigel Mansell.

down the pit lane together, Senna leading Berger. This in itself was unusual, but I could not help noticing that a McLaren team member had been watching the Ferrari pit closely, and that the two McLarens followed Alain Prost down the pit lane as he was going out to make his second attempt for pole position in the Ferrari. Now there was nothing wrong in this, and there was no way that the McLarens could create "traffic" and baulk Prost, but psychologically it was bound to upset the Ferrari team, who are easy prey for such a ploy, and slightly disturbing for Prost knowing they were behind him. Senna matched the pace of the Ferrari, and there is no better place to be than right behind your rival if you want to find out how his car is handling, or where he is quicker or slower than you.

On the second afternoon of qualifying Prost tried the same bit of gamesmanship by following Senna down the pit lane as the McLaren driver was away on a serious qualifying run, but before Prost could see how the McLaren was performing Senna slowed right up and pulled over out of the way and Prost was forced to go by and continue on a fast lap. Senna went slowly, keeping an eye behind him and by the time someone else appeared in his mirrors Prost was way ahead and out of reach, so the McLaren driver wound everything on and started his "flyer" with a clear road ahead of him. As he once said, when asked about "traffic" during qualifying, "you can make your own traffic, or not."

Holding a Grand Prix through the streets of Monte Carlo in this day and age is unreal enough in itself, but there are always sights and sounds that live in the memory afterwards, some real and some unreal but the abiding memory of this year's race was the opening phase, when things were settling down. It is normal for a gap to appear between the bunch of five or six hard-chargers at the front of the field and the midfield runners, which can be led by anybody in the group, and then the stragglers bring up the rear. This year there was a bright green car hanging tenaciously onto the back of the leading group, as Andrea de Cesaris drove his Jordan-Cosworth HB faster than seemed reasonable, and certainly faster than anyone expected. Back in the days of national racing colours I used to watch a blue car hanging on to the leaders, as Jean Behra drove his Gordini faster than seemed possible, and later Harry Schell did the same thing with a green Vanwall, and they were heroic days.

It was an heroic day in Monte Carlo this year, as de Cesaris forced his way past Moreno's Benetton-Cosworth and then began to lean on Alesi's Ferrari. It was all fascinating stuff to watch, but somehow you knew it could not last, and shortly before one third race distance the Jordan's engine died when an electrical fault crept into the throttle control system. But is was entertaining while it lasted. You could almost feel the relief in the Ferrari and Benetton pits when the green car disappeared, for both teams are riddled with discontent within their management hierarchy at the moment and for a Jordan driven by de Cesaris to be giving them trouble was something neither team needed. While Eddie Jordan and Gary Anderson quietly worked away on their reliability factor, Benetton sacked their designer John Barnard, Ford announced that Cosworth were going to produce a V12 engine for next year, using Ford money and Ford electronics, and Ferrari sacked Cesare Fiorio from his position as Ferrari team manager. I am not suggesting that the little incident with the new Jordan had anything to do with these upheavals, but the Jordan team, with its non-alcoholic drinks sponsorship does seem to be getting along nicely in their first season in Formula One.

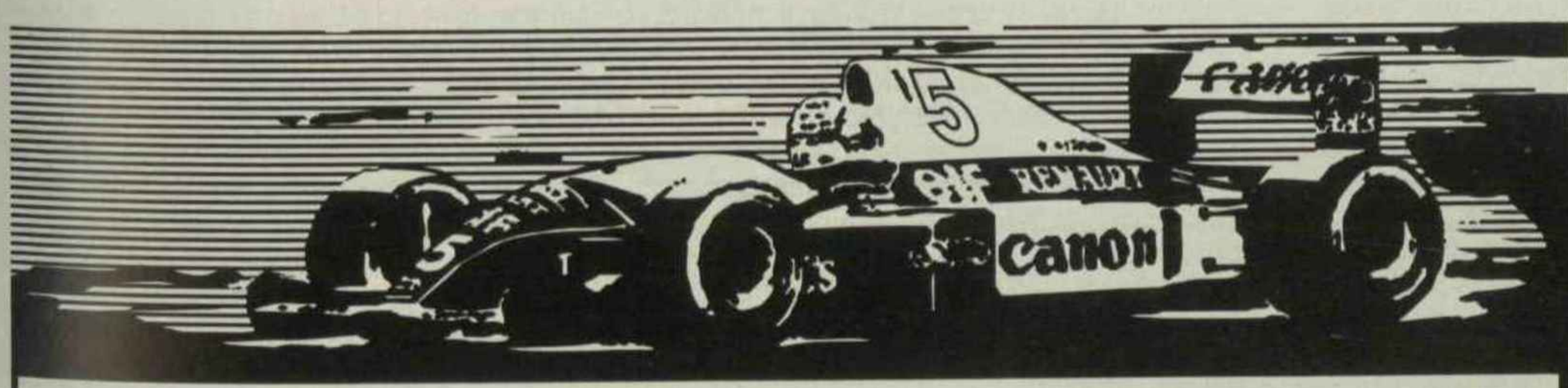
Perhaps if the cars were not bright green they would not be so noticeable, but with Eddie Jordan being a true (green) Irishman it does seem to be a most suitable colour. All three cars are so similar that it is virtually impossible to tell one from another, and like most F1 cars the racing numbers are hidden away out of sight on some part of the car that does show too much, otherwise it would carry advertising

material. To try and help identification the car of de Cesaris has green rear-view mirrors, the colour of the car, while the car of Gachot has the mirrors painted red; but now they are going by so fast that I cannot see that difference.

A similar problem arises with the two Larrousse Lolas, the two Tyrrells and others, and the only thing to do when trying to follow a race closely is to beam onto the second car of each team as it passes and if you can identify it positively then you know who the other one is that is ahead. Some teams have drivers with very distinctive helmet colours, such as Senna (yellow) and Berger (black and red), or Piquet (red and white) and Moreno (yellow). There are occupational hazards when you are trying to follow a race closely, and they are worse still if your name is Murray Walker and you are trying to do a running commentary from a television monitor screen, especially when there is a "glitch" and your screen goes from colour to black and white without any warning! Every now and then I mention the numbers' problem to team designers or team managers, but they all say the same thing. "Square inches of fibreglass on the body or aerodynamic appendages are worth a lot of money, especially prime sites, to sponsors. We cannot afford to give up that space for the numbers." Now if nice Mr Ecclestone and FOCA were public spirited they would pay all the teams for the square inches needed for a large and prominent racing number, and they could put "By Courtesy of FOCA" under the number. Just an idea, but I am continually meeting spectators who complain about not being able to read the numbers on F1 cars, especially those spectators who only get to see one live Grand Prix a season.

The pit lane at the Circuit Gilles Villeneuve on the Ile Notre Dame at Montreal was well up to standard for detail interest, and there was time to nose around on some small details such as the quick-lift jacks in use by those teams using the Tyrrell-style high nose and low front aerofoil fins. With a conventional layout, like a McLaren the front lever-jack can be fairly straightforward with a single bar or pad that goes under the nose and lifts on the front of the monocoque. With the "Tyrrell nose" nothing is flat until you get back to the beginning of the cockpit area, or the forward extending mandatory flat floor pan, which is not strong enough to lift on. Front jacks on these cars have all had to be specially designed with curved lifting pads to either cradle the nose, or to lift on the drooping "whiskers". Whatever system is used, any team using the fashionable "Tyrrell nose" has had to spend quite a lot of design-time on their front jacks. In all the teams, the most simple of jacks has still had to be designed and manufactured "in house" because they are all purpose-made. In the same vein some of the equipment used in the garages for lifting cars or engines, or carrying complete transmissions and rear suspensions, shows a most interesting degree of design and manufacture, all done by the team personnel. There is a lot more work done in a racing car factory than merely designing and building a racing car.

For a time during Saturday morning testing in Canada I wandered away from the pit area to the very fast ess-bend which is blind over a brow and leads on to the final straight. Senna was visibly quick through this section but the McLaren looked anything but stable, in fact on some laps it looked decidedly "nervous". In contrast the Williams-Renault looked very steady and was proving faster on the whole lap anyway. Other cars looked steadier but were slower, but even the slow ones were taking the blind brow at something like 150 mph. There were quite a lot of slower cars out on the track and Senna was doing a lot of overtaking, aided by marshals waving blue flags, and he wasn't having any trouble. Most drivers can recognise a McLaren-Honda in their mirrors, especially one with a yellow helmeted figure in the cockpit and most of them lift off momentarily and move out of the way. At one point Senna passed Emanuele Pirro driving a Dallara-Judd V10 and it was just as they were both opening up for the 180 mph dash down the final straight towards the pits. It was noticeable how Pirro dived into



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the McLaren slipstream as it went by, but more surprising was that it was still there next time round. Now if Senna was maintaining his pace this meant that Pirro would have recorded a faster lap than he could achieve on his own. On the next lap he had dropped back a little, and on the third lap he had lost his tow and was back on his own again.

It was a nice little example of a lesser driver learning from the Master, for it is one thing to be sucked along in a faster car's slipstream and another matter altogether to stay there for a whole lap, round all the corners. Back at the information centre where we lucky insiders' get all the speeds and lap times from the Longines-Olivetti timing team, it was fascinating to study the times. Pirro had recorded one lap that was over a second quicker than his regular laps, and the following two were faster than normal for him, but what turned out to be more significant was that in the afternoon qualifying he improved on his best morning lap, indicating that he had learnt something from his laps in the wake of the Master. It was all to no avail in the race because on the opening lap he collided with de Cesaris and had to stop for new tyres, thinking he had a puncture, but something was a bit out of line and affected the handling, so he did not have a very happy race. The race itself, apart from being remarkable because Senna was not on pole position and did not lead for a single moment up to his retirement on lap 26, saw the three top teams all plagued by electrical or electronic troubles in some way or another. McLaren-Honda, Williams-Renault and Ferrari are all so deep into electrics and electronic systems on the cars that when the bodywork is removed you see an electrical nightmare to the uninitiated. Williams and Ferrari both have sophisticated electronic control of gear-changing, the Williams in advance of the Ferrari in that the driver does not have to lift his foot off the accelerator pedal, while neither of them use the clutch pedal once they are on the move, or take their hands off the steering wheel to change gear. The Williams gear selection and change mechanism is programmed on a computer and all the driver has to do is to send an electronic signal. Clutch operation, throttle movement to regulate engine speed to gearbox shaft speed and road speed is all under the control of the electronic unit. The driver, with his accelerator pedal pressed hard down on the stop, has no control for a few milli-seconds while the computer programme is closing the throttles, freeing the clutch, engaging the required gear, opening the throttles and letting the clutch in again, all so quickly that the time taken is hard to visualize, and as far as anyone is concerned the gearchange is instantaneous. The Ferrari drivers have control of the engine at all times, so they have to ease the throttle pedal very slightly as their gear changes are effected by the electrically operated hydraulic actuators. This may sound like a lot of unnecessary complication, but it is all leading to fully automatic transmission systems in which the engine runs at constant speed and the gearbox is



John Barnard and Benetton Formula parted company after Canada.

replaced by an infinitely variable gear mechanism. Then the driver will merely have to steer the car and operate his road-speed-control and the brakes, and with the ever increasing lap speeds being set up that will be more than enough for him to concentrate on.

McLaren are still using a conventional mechanical gearchange mechanism, and anyone watching the on-board television shots of Senna in action will have noticed how much time he had to spend with one hand on the steering wheel and the other hand on the gear-lever. I feel sure that Honda are more than ready to work with a constant-speed engine, running at 13,800 rpm, or whatever, as no doubt are Renault.

In addition to all the foregoing, Honda and Renault have telemetry on their engines, which is relayed to equipment in the pits on which they can follow every revolution of the engine throughout the race, with data displays recording everything that is happening, such as throttle opening, pressures, temperatures, fuel consumption, ignition and spark plug conditions and so on.

Now all this electronic equipment is working in a fairly unfriendly environment involving noise, heat, vibration, changes of direction with high G-forces, high acceleration values and heavy braking forces. It is a wonder it works at all. But it does, and reasonably reliably, but any of it could be influenced by an unknown outside force. I don't think it is coincidence that all three teams had unexpected electrically-orientated breakdowns while on the island in the St Lawrence river. Mansell's car had a failure in gear-selection when trying to get first gear from the neutral position, when about to go out in qualifying on Saturday afternoon, and after that was cured the clutch operation failed before he left the pit lane. On Sunday morning the whole fuel system on Patrese's car went on the blink. In the race Senna's engine stopped very suddenly with electrical failure, said to be alternator failure, but I am sure it was not as simple as that, for an alternator merely keeps the battery topped up and failure usually means that the battery starts using up its amps until one or other system fails through insufficient supply, not the whole system .

Prost's Ferrari had a sudden electrical failure in its gear selection wirings, exactly as Mansell's Williams had on its last lap, the Renault engine cutting out at the same time. Patrese had symptoms of failure in his gear selection during the closing laps and was really lucky to finish. Two things are very significant in all this: when Mansell's car was brought back after the race and was cooled down, it started up and ran with no signs of trouble! Even more significant was the fact that when the Renault engineers looked into all the information they had recorded during the race, it was all scrambled and unintelligible; in their language "the information had been corrupted" which means disturbed by some outside influence. More than that we don't know at the moment.

When the race was over and most of the 50,000 spectators had gone there was the gentle stirring of a giant behind the pits, as a long line of 35 or more vast articulated trucks began to manoeuvre into position. The previous night they had come in and lined up nose-to-tail on a dirt service road away from the actual track, now they were coming into the arena of the pit lane preparing to load the whole F1 circus into their great trailers and set off on a 2000 mile journey down to Mexico City, in readiness for the Mexican Grand Prix which will have happened by the time these words are read. This very impressive fleet of blue and white trucks belonged to North American Van Lines and are part of the impressive organisation that FOCA run to ensure that the show always opens on time, no matter where it takes place. The advantage to a team to perform well and gain points in the Constructors' Championship is that when you have qualified all this sort of behind-the-scene activity is paid for by FOCA who handle the overall finances of Formula 1. New teams or hopeless teams who have no points from last season have to pay for this service, until such time as they are deemed worthy to receive "transport expenses" and naturally this involves the air freight to and from North America.

Formula One is a costly business to break into, but once established there is a lot of financial help and support, but it is not easy to become established. Merely being there is not sufficient, you have to make headway and prove yourself, which is why the little Jordan team were rejoicing more over their 4th and 5th places, than Benetton were over their victory.

IRONIC FOOTNOTE: Very odd that the designers of the cars that finished first and second in Canada have both parted company from their teams. John Barnard leaving Benetton to stand outside the arena and take a long, hard look at Formula One, and Dr Harvey Postlethwaite has left Tyrrell to take a job with Mercedes-Benz! The designer world is worryingly unstable at the moment. DSJ

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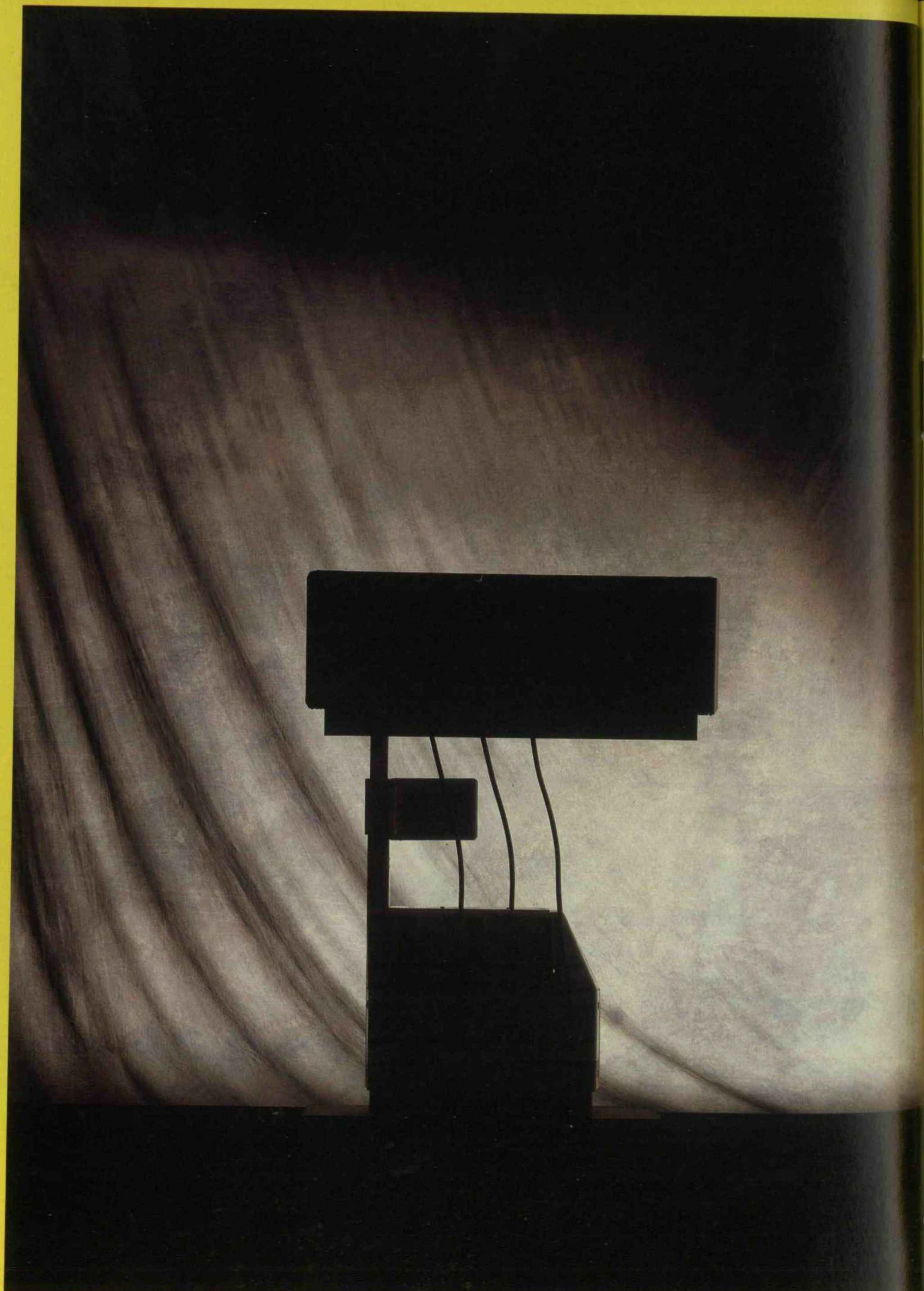
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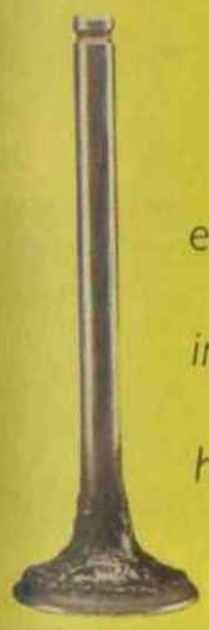
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Carbon is an inescapable by-product of combustion. And the fact is, today's lean burn engines run hotter than their predecessors.

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Don't despair. The solution is in your own hands.

Make a point of filling up at a Shell pump and you will be consigning the decoke to history.

Our pumps act as washing machines.

All Shell Advanced Fuels now contain a special detergent that washes away the carbon as you drive along.

Not all fuels are the same

Developing it took us thirty years. Noticing the difference could take you just thirty days.

Used regularly, Shell Advanced Fuel will keep your engine's inlet system three hundred per cent cleaner than ordinary fuel.

A clean engine runs more smoothly. It starts better, goes better, uses less fuel.

And it could save you a fortune in garage labour charges for decoking. Next time you go for a spin, remember to go for a wash.

YOU CAN TELL WHEN IT'S SHELL.



The Williams-Renaults were the class of the field in Mexico, the Anglo-French team finally deposing the Anglo-Japanese squad.

Pulling out the Stops

Mexico City, June 16

It was going to happen sooner or later. A Williams victory, that is. Several times this year the developing Patrick Head/Adrian Newey package has been hammering on the Honda Marlboro McLaren door. In Mexico, it finally took it off its hinges.

The signs were all there, of course, in Canada, and even though the real cause of Nigel Mansell's last lap catastrophe there remained uncertain, there was an upbeat air in the Didcot quarters. The FW14s handled the notorious bumps of the Autodromo Hermanos Rodriguez markedly better than anything the opposition could put up, and where the McLarens and the Benettons edged pointily over them, and the Ferraris looked far, far too stiff, the Williamses seemed to glide along, in a class of their own.

Irked by suggestions in the French media that Alain Prost might be Williams-Renault bound for 1992, Nigel Mansell had to watch again as team-mate Riccardo Patrese outqualified him, for the sixth time in six races. But there were reasons. Riccardo felt unwell all weekend, attacked by the infamous Mexican tummy, but his run on Friday was ultimately good enough for the pole, his second in succession, and unsettled weather on Saturday prevented anyone bettering it. For Mansell, it was Canada all over again, as he was quick to point out.

"The clutch went there; here it was the gearbox computer that dumped on me on Friday and obliged me to use the spare." Where both Williams race cars used development versions of the Renault RS3, Mansell's spare had a standard engine, a point that far from pleased him. Nevertheless, he was quick enough in it to take the other front row slot, and when the race finally got underway, his spare now equipped with an identical motor to Riccardo's, it was he who led.

Not that the race got underway easily. It took three starts, this one. As the grid lined up for the first, Alesi and Lehto signalled that they were in trouble in the humid conditions, and out went the delayed start board. The next time an over-zealous marshal waved a yellow flag under Olivier Grouillard's nose, and the Frenchman promptly switched off his Fomet 1's Hart DFR and raised his arms. All quite logical. Except that the marshal needn't have waved the flag. To reward Grouillard's commonsense, the stewards deemed him to have stalled, and held him to the back of the grid as punishment. Having made it through pre-qualifying for the first time in 1991, and qualified a superb 10th, it was a cruel outcome for Gabriele Rumi's little team.

Where Mansell edged ahead of Patrese the moment the lights went green in Canada, in Mexico his principal opposition came from Senna and Alesi, third and fourth in qualifying, as Riccardo got caught out in the shuffle.

For Senna, Mexico was a weekend to forget. A week to forget, really. Just before he'd left for central America he had had a narrow escape from serious injury after falling off a jetski at the coastal resort of Angra dos Seis. A friend following him struck him with his jetski, and the World Champion had been fortunate to escape with 10 stitches in the back of his head. "If I leave here with as many points as stitches, I'll be happy," he had said, but his problems were not over. As the Williams duo set the Friday pace, Ayrton went out for his second run on qualifiers, intent on getting on to the front row. Instead, trying to take the daunting 180 degree banked right-hander Peraltada flat in sixth, he had a monumental accident. As the McLaren went into the corner, he went to change down to fifth halfway through. The shift unbalanced the MP4/6, it slipped a couple of feet off line, and thereafter he was just a passenger as it spun round and hit the tyre wall on the outside of the curve. He might just have got away with it, had his speed not been so high, but as the McLaren struck the tyres it was flipped over on to its rollover hoop. For moments there was something chilling about the suddenness with which the velocity was checked, but then Ayrton clambered out from the wreckage, none the worse for wear. It was, without doubt, the biggest shunt of his career.

If it affected his driving for the remainder of the weekend, it certainly didn't show. For the second time in 1991 he had a car that wasn't as good as the best in the field, yet did he ever give up? In the early stages he pushed Mansell as hard as he could, once he had aggressively disposed of the interloping Alesi who had temporarily inserted himself into second place on the opening lap by the expedient of diving down the

NON-QUALIFIED

No	Driver	Nat.	Car/Engine	Tyres	Best Lap	Result
26	Erik Comas	F	Ligier JS35-Lamborghini V12	G	1 min 21.225s	DNQ
17	Gabriele Tarquini	I	AGS JH25-Cosworth V8 DFR	G	1 min 22.258s	DNQ
10	Stefan Johansson	SWE	Footwork A12-Porsche V12	G	1 min 22.598s	DNQ
18	Fabrizio Barbazza	I	AGS JH25-Cosworth V8 DFR	G	1 min 22.899s	DNQ
34	Nicola Larini	I	Lambo 2-Lamborghini V12	G	1 min 29.688s	Disq
35	Eric van de Poele	B	Lambo 2-Lamborghini V12	G	1 min 30.655s	DNPQ
31	Pedro Chaves	P	Coloni C4-Cosworth V8 DFR	G	1 min 37.144s	DNPQ
21	Emanuele Pirro	I	Dallara BMS 191-Judd V10	P	1 min 40.164s	DNPQ

inside into the first corner. As the two of them raced side by side for the corner on the second lap, Senna's animal instincts came to the fore - as they did in Portugal in 1988 - as he feinted at the Ferrari in most ungentlemanly fashion.

It was Patrese who really moved in the opening laps, after that poor start. Alesi succumbed on lap four, Senna on lap 11, the lap on which Riccardo slashed Mansell's 1.6s lead to 0.3s. It took him another four laps to pass his team 'leader' and the lead was not won easily. Side by side they charged down to the Curva Moises Solana at the end of the straight, Mansell on the inside. Both braked super-late, and as Nigel ran ever so slightly wide, Riccardo kept coming round the back of him. Side by side they raced down to the left/right flick that leads on to the next straight, Riccardo on the inside. Mansell kept his lead through the left-hander, but Riccardo had the line for the right and first place changed hands. It was a superb bit of motor racing, and it was not to be the last in an astonishing contest.

Within a lap Riccardo had opened a devastating 3.1s gap, and would parlay that into 22s by lap 48. Nigel, meanwhile, would again be reminded of Senna's most champion quality, his utter refusal to give up. The McLaren was not a match for the Williams, but Senna damn nearly made it one. Whenever Mansell opened a breather, Senna would come back at him, and their battle was joined for a while by Alesi (who briefly deposed Senna for third on lap 14 before indulging in a half spin on the 15th) and then a charging Piquet. Indeed, around the 22 lap mark Mansell, Senna, Piquet and Andrea de Cesaris in the Jordan, were nose to tail, all in with a chance of second spot. It was quite the best race of the season, the best since Mexico last year.

Modena, in the Braun Tyrrell Honda, had also been a charger initially, until his Pirellis went off and made him spin. A stop for replacements dropped him away, and another when he flat-spotted them finally killed his chances.

Piquet's challenge was hampered by the need for a stop for fresh Pirellis, and then the left rear wheel bearing wore out, a plume of smoke heralding his retirement on lap 45.

Alesi, too, met with misfortune in his best race since joining Ferrari. As Prost struggled with an electrical misfire caused by a faulty alternator, and retired after 17 laps, the younger Frenchman carried the Ferrari challenge right into Williams and McLaren territory after that half spin, actually working back up to fourth until his clutch failed on lap 43.

In a race enlivened dramatically by the battle up front, there was no shortage of action throughout the field. Immediately behind the second place battle Bertrand Gachot chased energetically after Roberto Moreno's Benetton, having caught and eventually passed JJ Lehto's well-conducted Dallara by lap 27. The Finn's race ended with a blown Judd V10 and a coating of its expelled lubricant over his rear Pirellis, while Bertrand's ended with a blotted copybook and his second trip of the weekend into the Peraltada sandtrap. Going into the corner on lap 52 he had encountered neutral instead of fifth gear, and fifth place was lost.

Moreno had been delayed during his tyre stop. Unable to radio ahead and warn his team he was coming in, he had had to spend several laps bringing the replacement Pirellis up to full temperature, and any remote chance he had of chasing after the fleet de Cesaris was ruined. Even when the Italian's throttle potentiometer began to malfunction with 20 laps to go, obliging him to ease the revs, the Benetton could not get close enough, an indication of how much progress the Jordan team is making, and how much Benetton currently misses John Barnard as it regroups in the wake of his departure.

It all so nearly went wrong for Jordan on the last lap, as the potentiometer problem cut de Cesaris' engine altogether, and then the marshals instructed him to push the 191 towards the tantalisingly close finish line. Reluctantly Andrea obliged, and earned himself temporary disqualification. After a stewards' meeting, and several false alarms, he was incorrectly reinstated on the grounds that the race had actually finished by the time he committed his indiscretion. He should have been reinstated on the basis of the clause in the regulations that allows a driver to push his car when directed to do so by the marshals.

If very stylish drives by Eric Bernard and Gianni Morbidelli were rewarded by sixth



Andrea de Cesaris almost got disqualified after obeying a marshal's instructions to push the car.

STARTING GRID

6 PATRESE Williams FW14 1 min 16.696s (1) 1 min 17.192s (2)	5 MANSELL Williams FW14 1 min 16.978s (1) 1 min 18.346s (2)
1 SENNA McLaren MP4/6 1 min 17.264s (1) 1 min 18.711s (2)	28 ALESI Ferrari F1/91 1 min 18.129s (1) 1 min 19.581s (2)
2 BERGER McLaren MP4/6 1 min 18.156s (1) 1 min 18.980s (2)	20 PIQUET Benetton B191 1 min 18.168s (1) 1 min 19.117s (2)
27 PROST Ferrari F1/91 1 min 18.183s (1) 1 min 20.778s (2)	4 MODENA Tyrrell 020 1 min 18.216s (2) 1 min 18.911s (1)
19 MORENO Benetton B191 1 min 18.375s (2) 1 min 18.589s (1)	14 GROUILLARD Fomet 191 1 min 18.453s (1) 1 min 20.560s (2)
33 de CESARIS Jordan 191 1 min 18.935s (2) 1 min 20.053s (1)	8 BLUNDELL Brabham BT60Y 1 min 19.064s (1) No time (1)
3 NAKAJIMA Tyrrell 020 1 min 19.092s (2) 1 min 19.971s (1)	25 BOUTSEN Ligier JS35 1 min 19.201s (2) 1 min 20.978s (1)
23 MARTINI Minardi M191 1 min 19.215s (1) 1 min 19.878s (2)	22 LEHTO Dallara BMS191 1 min 19.291s (1) 1 min 20.029s (2)
7 BRUNDLE Brabham BT60Y 1 min 19.647s (2) 1 min 20.378s (1)	29 BERNARD Lola L91 1 min 19.785s (2) 1 min 20.442s (1)
30 SUZUKI Lola L91 1 min 20.049s (2) 1 min 21.737s (1)	32 GACHOT Jordan 191 1 min 20.050s (1) 1 min 20.551s (2)
15 GUGELMIN Leyton House CG911 1 min 20.200s (1) 1 min 20.535s (2)	16 CAPELLI Leyton House CG911 1 min 20.252s (1) 1 min 21.053s (2)
24 MORBIDELLI Minardi M191 1 min 20.322s (2) 1 min 21.257s (1)	11 HAKKINEN Lotus 102B 1 min 20.823s (1) 1 min 22.072s (2)
12 HERBERT Lotus 102B 1 min 20.830s (1) 1 min 22.964s (2)	9 ALBORETO * Footwork A12 1 min 21.178s (2) 1 min 21.429s (1)

* Alboreto started from pit-lane.



Mark Blundell had a good meeting and was unfortunate not to finish.

and seventh places, others were less fortunate. Mark Blundell, who had qualified an excellent 12th in the Brabham BT60Y, ran with Bernard for a very long time, passing him just after Eric had overtaken him on lap 25, and then hanging on dearly when a misfire helped Bernard by again. That became a Yamaha engine failure on lap 55, after he had underlined his promise.

Team-mate Brundle was also pushing hard early on until his tyre pressures rose and ruined the handling, and after his stop at the end of lap 20 he was lucky to escape without injury when the right rear wheel fell off and threw the car into a sandtrap in the esses.

Suzuki, too, deserved better than the broken gear that eventually locked his transmission and put him out on lap 49 at the height of his fight with Morbidelli, and it was eventually left to the down-on-power and gripless Boutsen to bring his Ligier home eighth ahead of the evenly matched and well-driven Lotuses of Hakkinen and Herbert. Once again the Leyton Houses proved slow and unreliable, as did the sole Footwork Porsche to qualify (Alboreto's), while a split water radiator led to a massive engine failure for Berger at the end of his fifth lap, and sent Martini crashing at Peraltada on the Honda's oil. Perhaps the saddest story of all was Grouillard's, the start nonsense wrecking his day, and a detached oil line adding the final insult.

The 1991 Mexican GP, however, will be remembered most of all for Mansell's charge after Patrese after cockpit adjustment of his Renault's mixture had cured its early tendency to run hot, and the manner in which he slashed his lead from 22s to less than two by the time the chequered flag fell. But it should also be remembered for the manner in which Riccardo calmly set his fastest lap on his last tour, ekeing out the second he needed to ensure his fourth GP victory. It might have looked close, but he was judging things to perfection, and his result was richly deserved.

Senna? In the circumstances, third place was quite something given his two accidents, and showed just how determined an individual he is. Such a defeat also proved what he had been saying several times prior to Canada, when few took notice of his comments that McLaren was not as invincible as it might seem. He knows a bit about motor racing, does the World Champion. And right after Mexico he knew full well that McLaren and Honda needed to pull something special out of the bag if it was to stop Williams and Renault from running them very close for the World Championship as the season neared its midpoint.

DJT

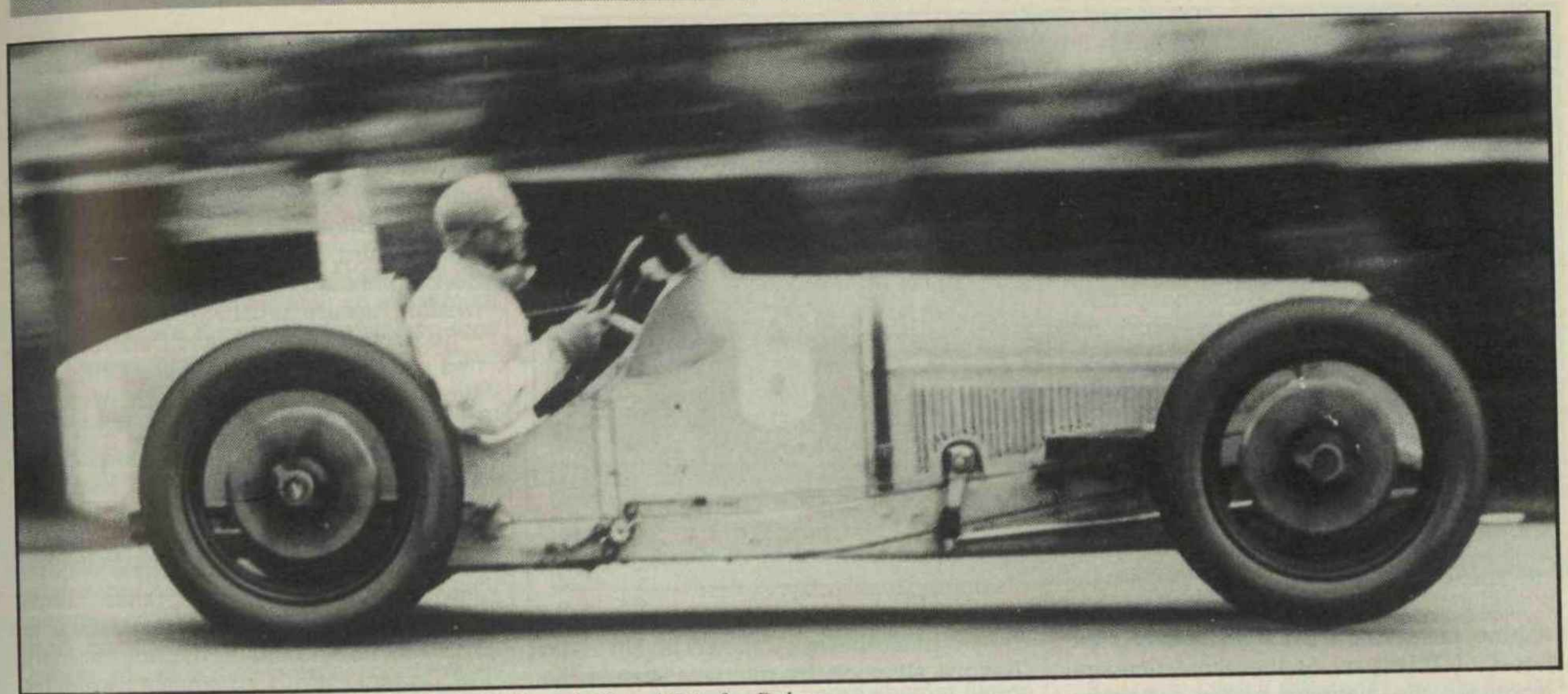
RESULTS

MEXICAN GP, Mexico City Autodromo, June 16th
67 laps of 4.421 km circuit (296.207 km; 184.054 miles)

Pos	Driver	Nat.	Car/Engine	Tyres	Time	Best Race Lap	On Lap
1st	Riccardo Patrese	I	Williams FW14-Renault V10	G	1h 29m 52.205s	1m 17.299s	67
2nd	Nigel Mansell	GB	Williams FW14-Renault V10	G	1h 29m 53.541s	1m 16.788s	61
3rd	Ayrton Senna	BRA	McLaren MP4/6-Honda V12	G	1h 30m 49.561s	1m 18.570s	52
4th	Andrea de Cesaris	I	Jordan 191-Cosworth V8 HB	G	1 lap behind (not running)	1m 19.109s	49
5th	Roberto Moreno	BRA	Benetton B191-Cosworth V8 EXP	P	1 lap behind	1m 19.718s	55
6th	Eric Bernard	F	Lola L91-Cosworth V8 DFR (Hart)	G	1 lap behind	1m 19.648s	56
7th	Gianni Morbidelli	I	Minardi M191-Ferrari V12	G	1 lap behind	1m 20.411s	56
8th	Thierry Boutsen	B	Ligier JS35-Lamborghini V12	G	2 laps behind	1m 19.953s	64
9th	Mika Hakkinen	FIN	Lotus 102B-Judd E V8	G	2 laps behind	1m 20.446s	63
10th	Johnny Herbert	GB	Lotus 102B-Judd E V8	G	2 laps behind	1m 20.472s	61
11th	Stefano Modena	I	Tyrrell 020-Honda V10	P	2 laps behind	1m 19.920s	50
12th	Satoru Nakajima	J	Tyrrell 020-Honda V10	P	3 laps behind	1m 20.613s	58
13th	Mark Blundell	GB	Brabham BT60Y-Yamaha V12	P	retired on lap 55	1m 21.105s	46
14th	Bertrand Gachot	L	Jordan 191-Cosworth V8 HB	G	retired on lap 51	1m 19.510s	47
15th	Aguri Suzuki	J	Lola L91-Cosworth V8 DFR (Hart)	G	retired on lap 49	1m 20.622s	46
16th	Nelson Piquet	BRA	Benetton B191-Cosworth V8 EXP	P	retired on lap 45	1m 19.744s	42
17th	Jean Alesi	F	Ferrari F1/91-Ferrari V12	G	retired on lap 43	1m 20.129s	37
18th	J.J. Lehto	FIN	Dallara BMS 191-Judd V10	P	retired on lap 31	1m 20.982s	29
19th	Michele Alboreto	I	Footwork A12-Porsche V12	G	retired on lap 25	1m 22.269s	21
20th	Martin Brundle	GB	Brabham BT60Y-Yamaha V12	P	retired on lap 21	1m 23.323s	16
21st	Ivan Capelli	I	Leyton House CG911-Ilmor V10	G	retired on lap 20	1m 22.487s	16
22nd	Alain Prost	F	Ferrari F1/91-Ferrari V12	G	retired on lap 17	1m 21.266s	13
23rd	Mauricio Gugelmin	BRA	Leyton House CG911-Ilmor V10	G	retired on lap 16	1m 24.895s	7
24th	Olivier Grouillard	F	Fomet 191-Cosworth V8 DFR (Hart)	G	retired on lap 14	1m 23.300s	10
25th	Gerhard Berger	AUT	McLaren MP4/6-Honda V12	G	retired on lap 6	1m 23.948s	4
26th	Pierluigi Martini	I	Minardi M191-Ferrari V12	G	retired on lap 5	1m 24.014s	4

Winner's Average Speed: 197.757 kph; (122.880 mph) **Conditions: Overcast and humid**

Fastest Lap: Nigel Mansell (Williams FW14-Renault V10) 1m 16.788s on lap 61; 207.267 kph (128.789 mph)



Robert Benoist on his way to winning the 1927 French Grand Prix for Delage.

Delage Domination

Robert Benoist v Ayrton Senna

Writing this before the outcome of the Mexican Grand Prix I do not know whether Ayrton Senna will have recovered his unbroken run of successes for McLaren-Honda this year. But as I write, there is some excitement among those who plunge themselves into statistics that the great Brazilian driver has already set some sort of record or target by having won the first four 1991 F1 races in succession. That apart, McLaren-Honda are the dominant make in modern Grand Prix racing and it will be interesting to see if the team, or the invincible Senna for that team, wins every remaining race this year.

Of course, as all good students of motor racing history know, there has been significant race domination in the past. The outstanding chain of victories by the Type 159 1½-litre Alfa Romeos in 1950 comes to mind immediately, followed by the run of Ferrari and Mercedes-Benz successes. But without delving for too long into masses of dull figures, I think I am correct in saying that no great driver of the past — Ascari, Fangio or whoever — has opened a season by scoring wins four times in a row, as Senna has done this year. Why do I write "in recent times?" Because we should not overlook the performances achieved by the French driver Robert Benoist, during the vintage years. You the reader may well say that I must be out of my mind to compare two such very different periods of motor racing, that the competition was sparse when Benoist took to the circuits and that conditions are now far different at the more sophisticated tracks over which Ayrton Senna demonstrates his remarkable and eminently praiseworthy skills. That the cars are faster, more powerful and all the rest of the arguments can be brought to bear. I don't mind! To me motor racing is motor racing and if the scale and technical proficiency is not questionnable, why cannot we take a look back to some very fine drives by Benoist, and performances by Delage, even if they took place nearly 65 years ago? Prompted, you see, because Senna is doing so splendidly for McLaren-Honda at the present time. Unless my memory has faltered, and if it has you will be ready to tell me, I do not think any other make has dominated Grand Prix racing in the way that Delage did in 1927.

Before the 1914/18 war there were too few annual contests to make such a point, although there were dominant marques even then. But between the wars racing at this level expanded and one or two makes became outstanding — Bugatti won almost everything by the totted up scores, the Louis Coatalen Talbot-Darracqs earned the title Invincible, as MOTOR SPORT told some years ago, but in the 1½-litre Grand Prix division, it was left to Delage to show total dominance and Benoist, their No 1 driver, to achieve, as a statistic if you like, what even Senna has not yet done.

However different the motor racing scene then, Louis Delage thought it worth spending about £800,000 in today's values to run a racing programme. He had M Lory to engineer for him the cars he proposed to race in 1926 and 1927, under the 1½-litre GP formula which had replaced the 2-litre formula prevailing from 1922 to 1925. Apart from the limit to engine capacity, the new formula required that at first the cars weighed not less than 600kg increased to 700kg for 1927 and that the bodies were not less than 80cm in width, increased by 5cm for 1927. Not many people worried about minimum weight in those days, leaving this to Mercedes and Auto-Union with access to new light-alloys and the desire to use big engines, a decade later.

Under the 2-litre formula Delage had had M Plancton produce for him an advanced V12, which was supercharged for 1925, when it developed nearly 200 bhp and netted for him the French and Spanish GPs and the Championship of Europe. Something a little less complicated was deemed a good idea for the 1500cc racing and, aided by M Gauthier, Lory came up with those splendid straight-eight Delage racing cars, which by 1927 were poking out 170 bhp at 8000 rpm in a car weighing 15.8 cwt unladen or 19.3 cwt on the starting-line. The project was not all that much less complicated, when you consider that Lory used a twin-cam engine of 55.8 x 76mm (1488cc) with two valves per cylinder at an included angle of 100 deg, the camshaft driven by a train of gears, a crankshaft running in nine roller bearings, roller big-ends and dry-sump lubrication, and that in the original design the number of gears all running on roller-races totalled 23. The camshafts ran on ball-bearings, one on each side of each cam and there were triple valve springs. Lubrication was dry-sump. In all, there were 62 ball or roller-races in the engine.

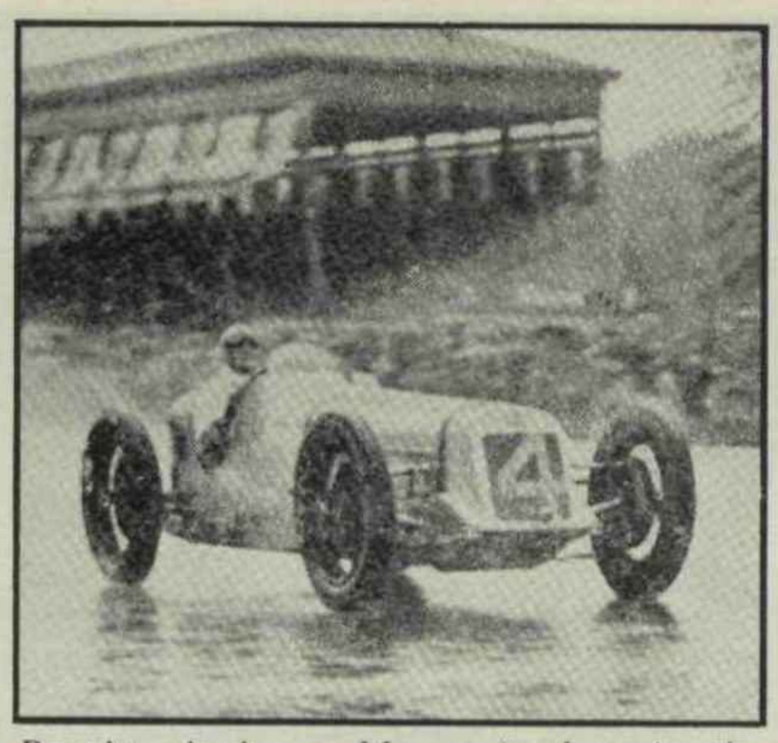
This 1926/27 GP Delage was as advanced as any racing car of its time. I have seen its theoretical top speed quoted as 162 mph and it actually was able to reach nearly 130 mph at 7500 rpm in the fourth gear of its five-speed gearbox. If it had any shortcomings as seen on the drawing-board it was that it was a long power unit, measuring 4 ft 7 in from front to the rear u/j, behind the unit gearbox, installed in a rather too whippy frame, which probably restricted somewhat the car's full potential. At a time when Talbot, Thomas Special and other cars were making use of underslung chassis, Delage did this only at the back; the front axle was underslung but not the frame at this point, it being above the half-elliptic springs.

We all make mistakes and this Lory did in his 1926 design. He had the engine exhausting on the off-side, presumably having miscalculated the amount of heat his efficient engine would dispel. This resulted in the cockpit getting fearfully over-hot, to the extent of actually burning the driver's feet. It was to lose the cars all but the 1926 British GP, and Benoist won that only because there were inexperienced take-over drivers present to give the aces a chance to dunk their blistered feet. The problem was probably accentuated because the driver sat low down to reduce frontal area (the top of the scuttle was only 2 ft 11 in from the ground) by having the transmission biased four inches to the near-side. The re-design put the exhaust ports on the nearside, but Lory had to dispense with twin superchargers, and put a single Roots blower at the front of the engine, using rotors twice as long to get a boost of 7lb/sq in. At the same time he increased the diameter of the camshafts and stiffened up the steering connections. He now had a thoroughly effective racing car, as you shall see. Incidentally, I recently heard Murray Walker telling his TV audiences that today's F1 cars will do about 90 mph in bottom gear; the 1½-litre Delage would do over 60 in first, 65 years ago.

As a curtain-raiser to the 1927 season Louis Delage sent 32 year-old Robert Benoist to Montlhéry in March, to compete in the GP de L'Ouverture. The lone Delage should have raced against Albert Divo in a 1½-litre Talbot, both of which gave 500cc to the majority of the field in this 2-litre 155-mile race over the road circuit. But the Talbot was a non-starter and in the rain Benoist ran away with it, finishing two laps ahead of the second car home, a 1½-litre Bugatti. It was a forecast of finer things to come.

It was now a case of running in the full International Grand Prix races. The first of these races was the French GP in July, over the full road/track Montlhéry course. Delage had nominated Robert Benoist, who had gained experience with Salmsons, and had come to Brooklands where he won the 1100cc class of the JCC 200 Mile Race in 1922, Edward Boulier, who had driven Talbots for STD, and Andre Morel, the Amilcar driver. Robert Senechal, who had assisted during the "frying" problems of 1926, was appointed spare driver.

At the last minute Bugatti withdrew, to howls of derision from the grandstands it was said, so the contest was between the Delage and Talbot teams, backed up by Eyston's Halford Special, a car you can still see racing at VSCC meetings. They were flagged away by the trans-Atlantic pilot Levine. Any excitement was contained in seeing Divo's Talbot lead Benoist, and Wagner, also in a Talbot, set a record lap in making up time after stalling at the start. After four laps, however, Benoist got ahead and held that place to the finish. The lap record fell again and again, Williams (Talbot) doing 81.28 mph in chasing the Delage after Divo had fallen back. Benoist responded with 81.5, then 81.99 mph, rather



Benoist winning at Monza, in the rain, the 1927 European Grand Prix.

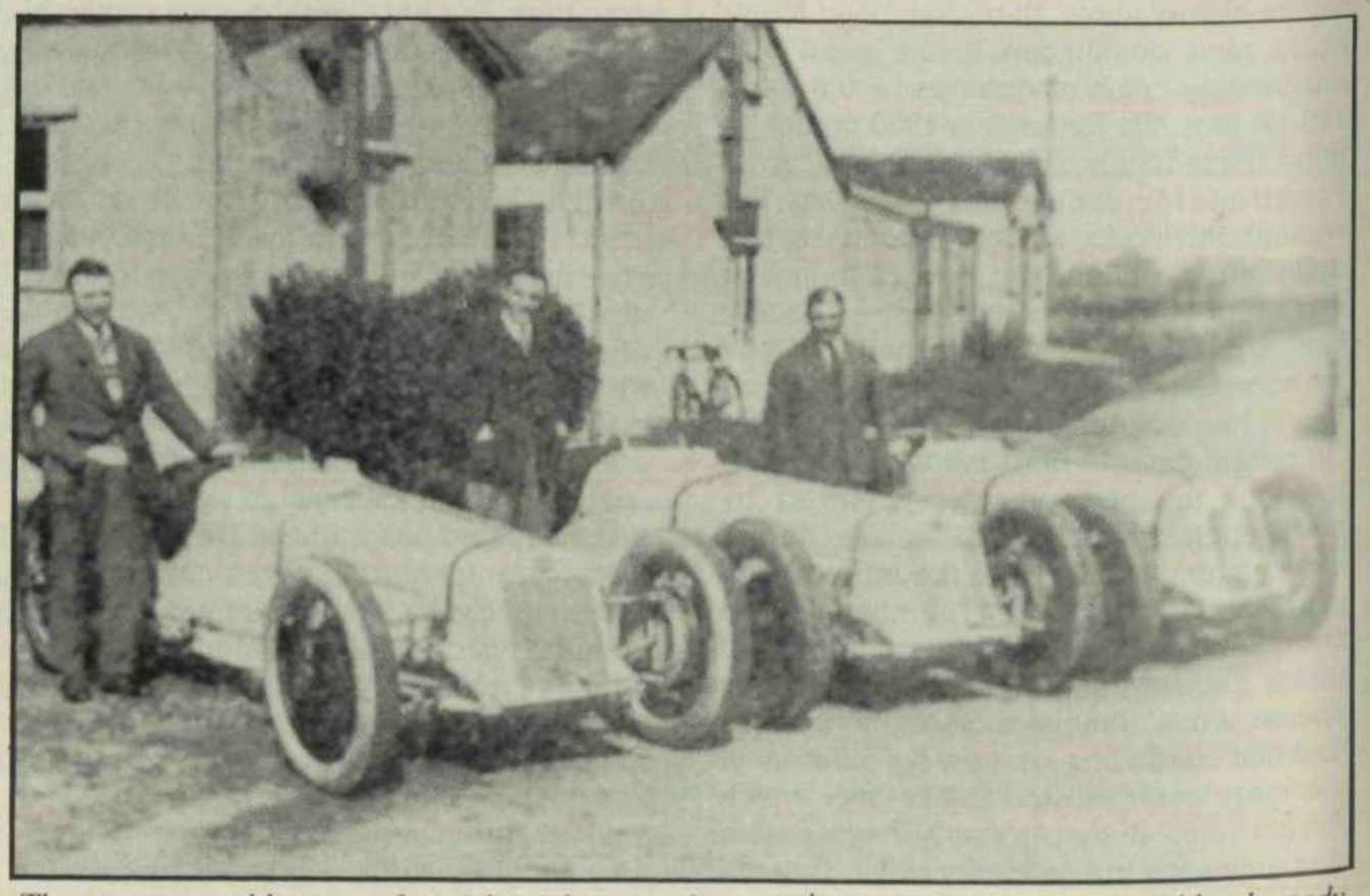
as Senna does today.

Interest was to some extent maintained by the battle between the rivals Divo and Benoist although by quarter-distance the Delage was 11 minutes ahead. Tyres were lasting about 170 miles. Delage pit-work was good; Benoist and his Italian mechanic were very quick — note that the driver and his riding mechanic had to do this work themselves in those days. By half-distance Boulier was second to Benoist, Wagner a lap behind them, Divo out with suspected valve failure. Benoist made two pit-stops and Morel had problems, so Wagner was still in the hunt. But when the Talbot retired, the Delage team ran 1, 2, 3. In this dominant placing they crossed the line, Benoist averaging 77.24 mph for the 372.7 mile race. He had been driving for fractionally more than 4¾ hours. The cars were on a fuel mix of petrol/benzole/alchohol/ether, Champion plugs and Dunlop tyres.

Next, it was the Spanish GP at San Sebastian. Only seven started, the Talbots this time being the absentees. There was a strenuous battle between Benoist and Materassi's Bugatti, the latter at one time 3 min 30 sec ahead — to be 20 seconds or so in arrears of Senna and it is all over! — which ended when the latter hit a wall nine laps from the finish. The Delage was then two seconds behind and in the resulting dust-cloud Benoist spun round, received an OK signal from his adversary, and continued, to win at 80.5 mph for the 430 miles. Conelli (Bugatti) was second, Boulier's Delage third, but Morel had plug trouble. Benoist set a lap record of 85.41 mph for the twisting Lasarte circuit.

So convinced was Louis Delage that he had demonstrated satisfactorily the superiority of his cars that he did not intend to contest the European GP at Monza. But in the end he let Benoist take one Delage. After a dry summer, rain fell heavily at Monza that September, as six cars lined up for this important Grand Prix. Fiat had withdrawn and although Bordino with the new 12-cylinder arrived after frantic repairs, to win an opening 50km race at an excellent 92.88 mph, he did not run in the GP. So Benoist was up against two Miller-powered FWD Marmon Specials, a Duesenberg, and two hastily-entered OMs. He easily ran away from these to win at 90.04 mph, for the 311 miles, his best lap at 94.31 mph. He won by some 34 miles, in spite of a stop for fuel and oil. Having taken the title of European Champion (he was later to be awarded the Legion D'Honneur, which George Eyston once hinted to me he valued about as much as if he had received a British Knighthood), Benoist declined to start in the 50km GP of Milan that day, saying he was tired and that the Italian fuel was not quite what the Delage engine liked. So Bordino's Fiat won that race, at 96.49 mph, and why he wasn't in the GP proper is a mystery.

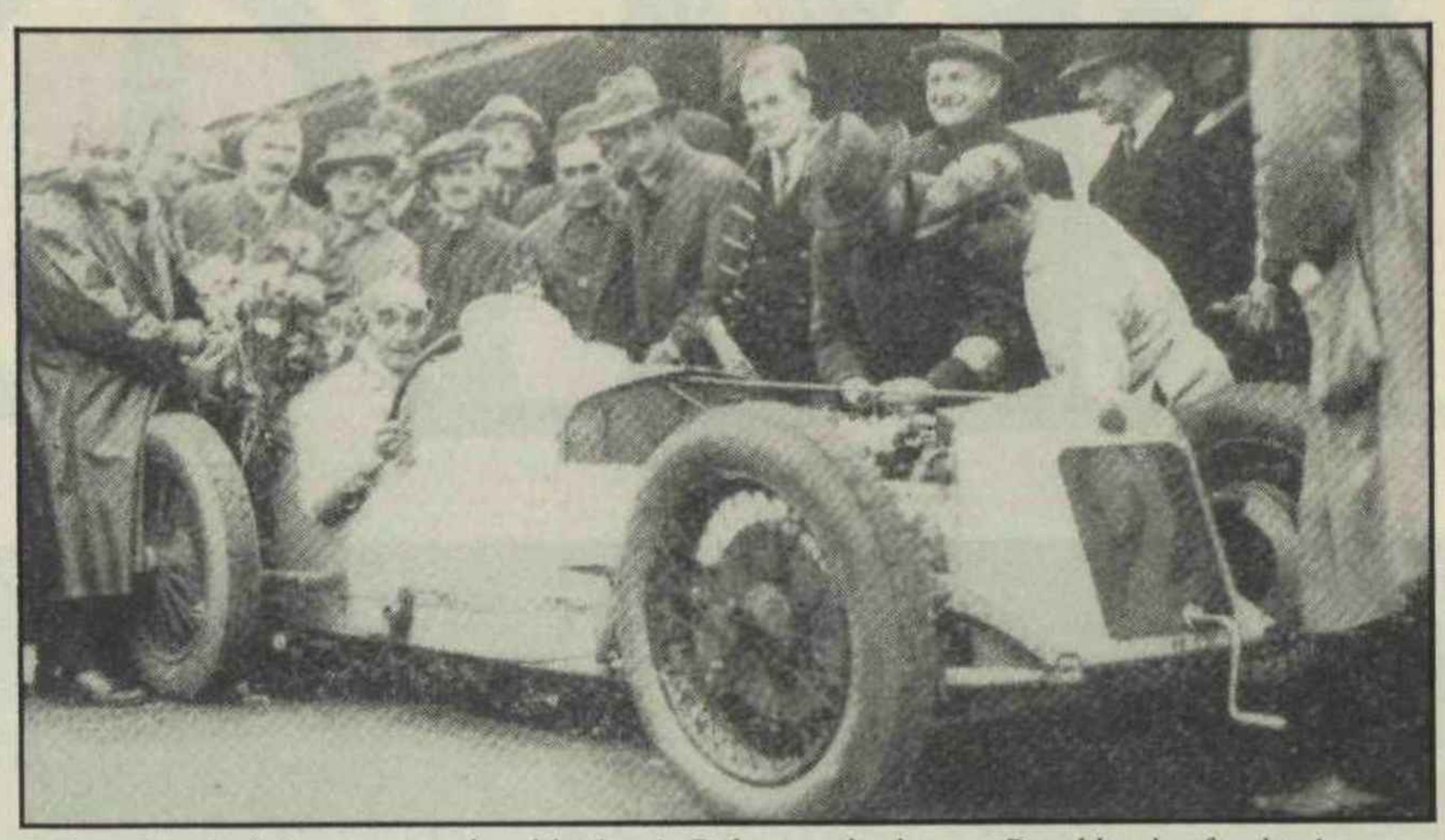
Perhaps persuaded by his English concessionaires, J Smith & Co of Albermarle Street W1, Louis Delage sent his team over to Brooklands for the second British GP, run over an artificial road-course. (The concessionaires took an advertising banner across the bridge over the Finishing straight, victory before a British crowd



The unconquerable team of straight-eight supercharged 1½-litre Delage cars at Brooklands ready for the British GP in which they were 1,2,3.

no doubt being thought useful in promoting the new side-valve 15.7hp and handsome 31hp six-cylinder Delage cars at Olympia later in October, shown with closed bodies, priced, respectively, at £655 and £820). The race had 16 entrants, of which 11 started — the Delage team, with Albert Divo now in the third car, six Bugattis, and two Thomas Specials; this time it was Alvis who had withdrawn. Divo led off, after an initial burst by Materassi's Bugatti, and after two laps the Delage were in 1, 2, 3 formation. Their flexing chassis may have caused the front wheel flap under braking and the skids at the turns, but their speed and acceleration were superior to those of their rivals. Divo's lead ended when a near-side tyre began to deflate. It was changed, and the car refuelled, in 2m 18s. The positions of the dominant Delage cars changed with their pit-stops (Boulier 2m; Benoist, who changed both back wheels, 2m 14s) but by three-quarter distance they were almost 16 miles ahead of Chiron's Bugatti, their pit showing the drivers the Slow signal. Without ever extending his engine, Benoist won, at 85.59 mph for the 325 miles, followed home by Boulier and Divo, the latter having had two more stops due to a loose silencer (a crime to lose this, at Brooklands). Divo also complained of the heat, although drizzly rain had fallen, plastering Benoist's face with mud. Chiron was fourth, over 10 mph slower than the winning Delage.

Indeed, the Delage cars had never been fully opened up, running at 6800 rpm instead of at their customary 7500 rpm. They were giving about 10 mpg of fuel. M Delage himself was in the pits to control them, and to congratulate Benoist after the finish. So there it is — five consecutive wins, four in International Grands Prix, like Senna this year. Benoist could not score any more, as the 1927 season was over, but by the time this is in print we shall know whether Ayrton has improved his score. Those GP Delages had an impeccable record. The only 1927 retirement was Morel's (after which Divo replaced him), and I believe that in 1926/27 they started in seven races, won five, and were 1, 2, 3 in two.



Robert Benoist being congratulated by Louis Delage and others at Brooklands after having won five 1927 races, including the four Grands Prix, in succession.

Practice apart, in 1927 they ran some 3600 racing miles, with just that one retirement, and whereas Senna worked a total of 7hr 7min 32.7sec to achieve his four consecutive 1991 F1 wins, Benoist in four GPs drove for 17hr 22m 40.2sec. After 1927 Delage retired his invincible cars. The present generation that goes to F1 events or watches them on TV would be justified in thinking that spectators were mad to go to the pre-war GPs with so few runners, to have to wait half-an-hour if they wanted to see who was fourth at Montlhéry or Monza, or indeed to watch races with only four finishers. I see it differently. Surely the fact that such dull events still attracted good crowds, 100,000 for the French GP, and a big attendance at the British GP, shows the great enthusiasm there has always been for motor racing?

At Brooklands in practice before the 1927 British GP the Delage cars apparently lapped the course at 90 mph and the outer-circuit at 120 mph. In the race, timed over a kilometre at a slow part of the Track, Benoist was doing 102.61 mph. (Four years later WB Scott's Delage lapped Brooklands at 122.37 mph.) After the Delage Company had retired from GP racing Benoist drove Bugattis, winning at Le Mans with Wimille, aged 52 at the time when he managed Bugatti's Paris showrooms. During the war he joined the Resistance, was captured by the Germans and executed at Buchenwald by the Gestapo in 1944. WB

VSCC NIDDERDALE RALLY

The winner of this event, held on May 4th, was P Cattle (Riley) who was awarded the Northern Weekend Jug. With three non-starters, 47 drivers and navigators competed. First-class Awards were won by M Clarke (A7), K Burnett (Alvis), and G Tomlin (Alvis). Second-class Awards went to B Sudjic (Hotchkiss), F Hyland (Alvis), P Blakeney-Edwards (Frazer Nash) and A Lupton (Lea-Francis), and Third-class Awards to N Doodsworth (Alvis), P Glover (Alvis), F Moore (Railton) and A Costigan (Riley). The best newcomer was judged to be C Naish (6½-litre Bentley) and the best novice driver P Wignell (Sunbeam). WB

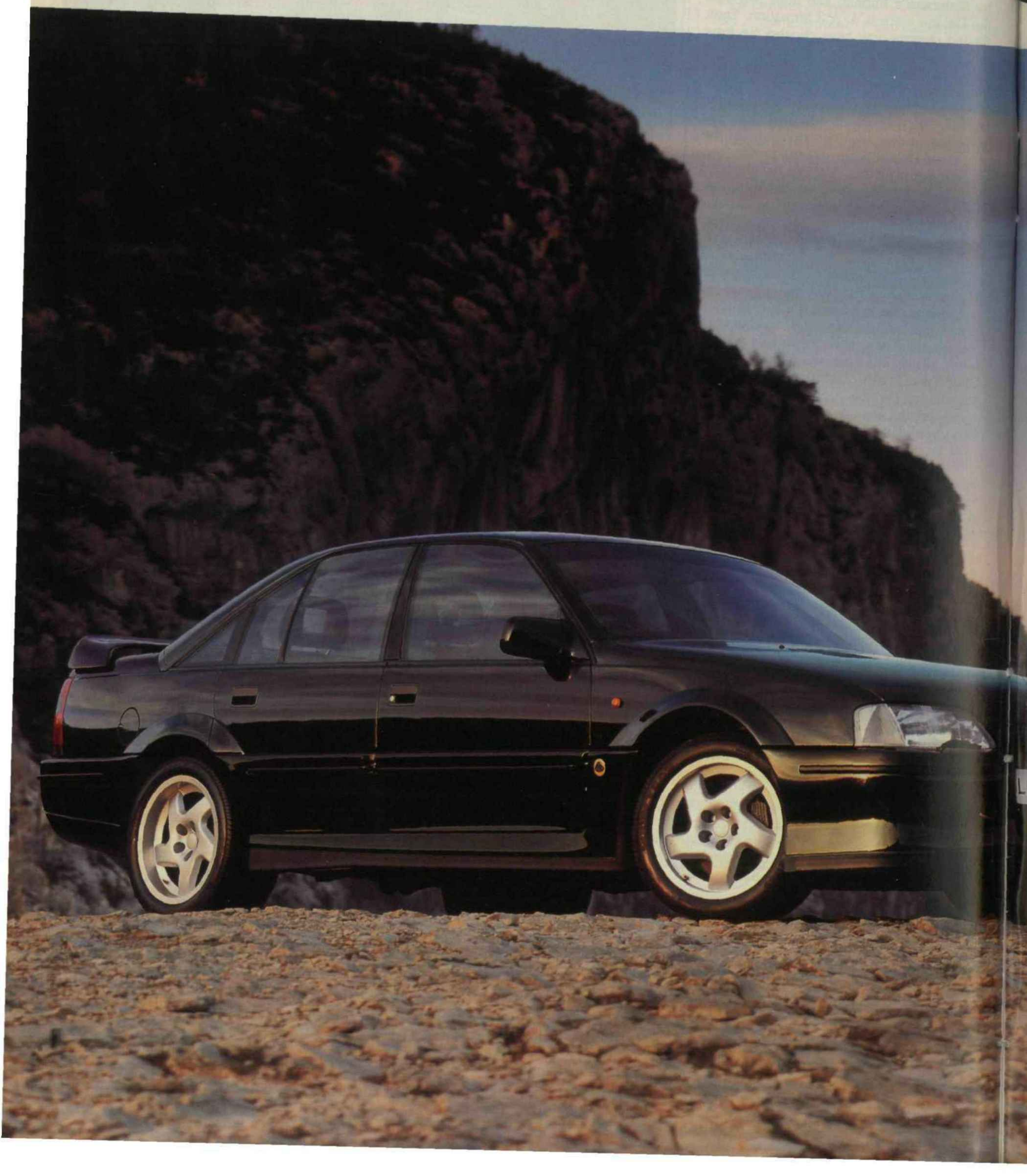
VSCC WISCOMBE SPEED HILL-CLIMB

The annual VSCC visit to the delightfully situated Wiscombe Park hillclimb took place on May 12th. Vintage cars were in fine fettle, breaking four class-records and two pre-war class records were also broken. FTD was made by Mayman in ERA R4D, in 46.11 sec, breaking Martin Morris's old record by 0.17 sec, and Julian Majzub set a new vintage record in his Bugatti in 47.92 sec, 0.37 sec quicker than that held previously by Cardy's Bugatti. The small sports-car class was won by Bukin's A7, a 1929/32 Special declared as 790 cc, with a time of 63.38 sec, the vintage section going to Leith's hybrid A7 (57.75 sec). Dunn's 1½-litre Riley Special was quickest in the Sports-Cars-up-to-1500cc class, with a record breaking climb in 50.73 sec after his second run had apparently been mis-timed (anyway, he broke the class record on his first ascent), and Selwyn-Smith's Frazer Nash, with 53.91 sec was best vintage runner, with two consistent climbs. The Delahaye driven by Heelis headed the up to 3-litre sports-car class (56.55) sec and J Giles set a fresh vintage record in the Frazer Nash, in 52.31 sec. Fastest big sports car was Anne Shoosmith's 4½-litre Bentley (61.52 sec). She broke the GN-Ford's old record by 0.83 sec and beat all the post-vintage (but pre-war) cars in her class.

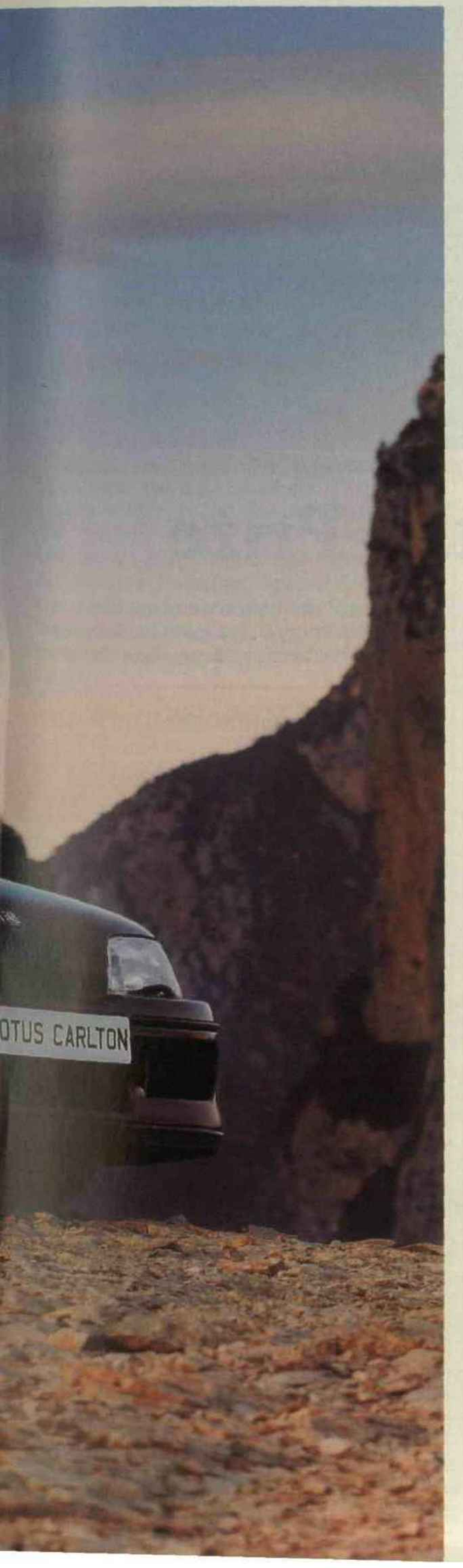
Mallya in the ex-Arnold-Forster 5-litre 1912 Bugatti took the Edwardian section with a fine run in 60.46 sec, fastest in a class of five as well as the handicap win. Vintage cars scored again in the 1100cc racing car class, in which no-one was faster than Lake's Amilcar-Riley (53.70 sec) a fine show against nine A7s; even Barry Clarke's couldn't better 58.54 sec, but it would have probably been different if the Hardy Special hadn't retired on both its runs. The Harker Special clocked 64.87 sec. Ricketts in Sally Marsh's ERA R1B was victor of the 1½-litre racing car section (47.85 sec), the best vintage car being Caroline's impressive Morgan 3-wheeler (51.65 sec) although it failed to complete its second run. Finally, Mayman and Majzub were successful overall with record-smashing runs. WB

Our report of the VSCC Curborough speed-trials gave provisional results, but there is no change, except that Roger Collings's 8-litre Bentley Special won the big sports-car class, not Walker's GN-Ford as stated. Bruce Spollon's ERA had a bad day, as although it got within 2.37 sec of Guy Smith's FTD with the Alvis-Frazer Nash in practice, in the event it was 18.31 sec in arrears of Smith's 37.93 sec after expiring on its first run. WB

PRECIO



JS. FEW.



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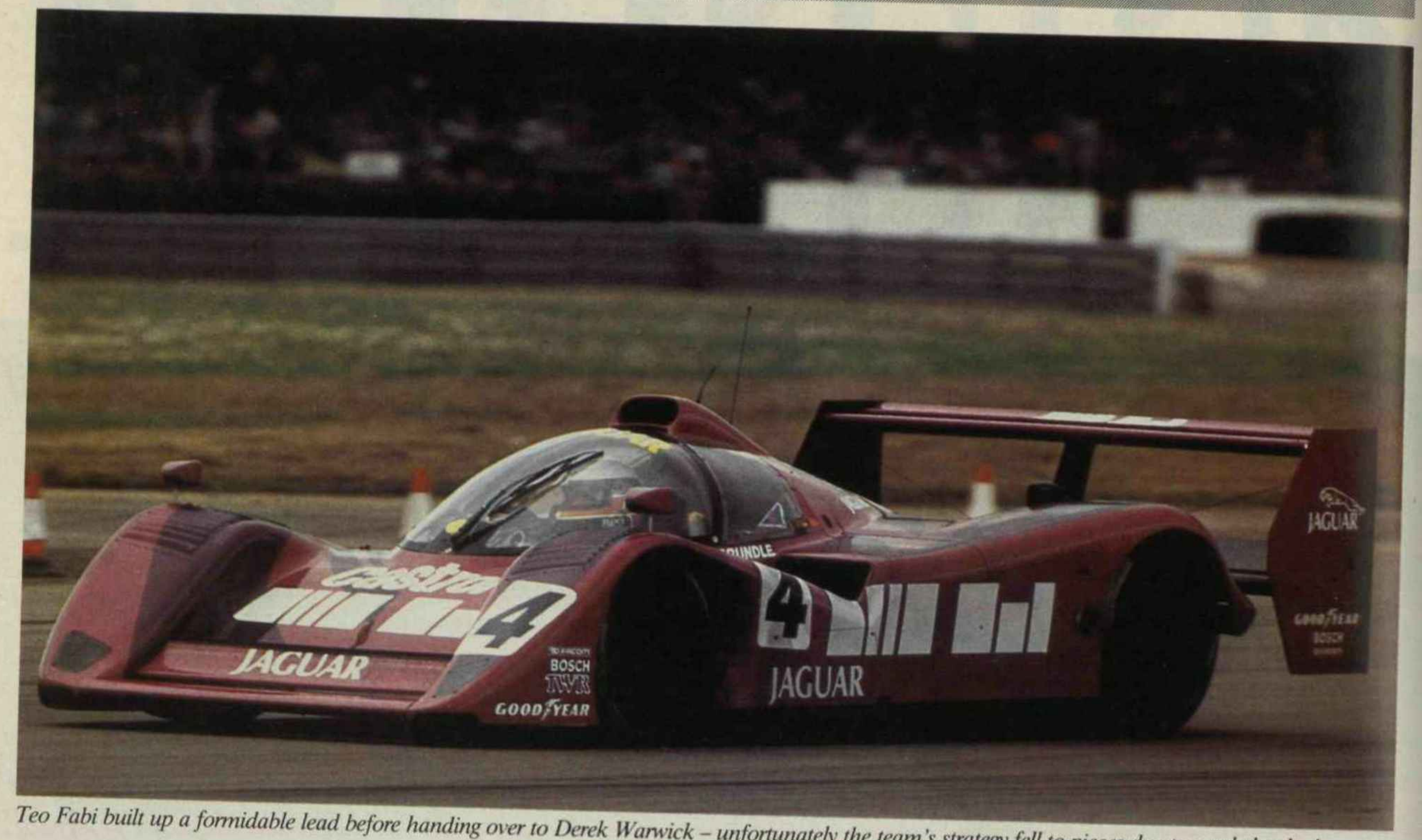
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VAUXHALL Once driven, forever smitten.



Teo Fabi built up a formidable lead before handing over to Derek Warwick – unfortunately the team's strategy fell to pieces due to a rule book change.

The Power Without the Prize

British spectators could see for themselves, at Silverstone on May 19, that the Silk Cut Jaguar team has set out in callous fashion to humble Mercedes-Benz and Peugeot on the circuits. At Silverstone, like Suzuka and like Monza, the new XJR-14s were on average four seconds per lap quicker than their main rivals, and that's the sort of timespan that should separate the front of the grid from the backmarkers in a close-fought race.

Teo Fabi, handing over at two-thirds distance to Derek Warwick, commanded the Sportscar World Championship race with absurd ease. From the start he pulled out 74 seconds in 20 laps, leaving none but Karl Wendlinger in the Mercedes C291 on the same lap, and the purple Jaguar completed the major part of the race with next to no pressure.

The same couldn't be said of Martin Brundle, who missed third gear at the start and broke the throttle cable on the second lap. His XJR dropped six laps straight away and the recovery was the highlight of the race. Only four of Brundle's 73 flying laps were slower than the fastest lap by another make, Michael Schumacher's 1m 33.798s in the 12-cylinder Mercedes, and the Englishman's solo run also netted him the outright circuit record at 1m 29.372s, a speed of 130.80 mph.

Sighting of the chequered flag for the third time in successive weekends, didn't bring Warwick all the happiness he might have wished for because 40 minutes after the race he was disqualifed from winning, then reinstated without points. This means that he languishes ninth in the World Championship, with 20 points, while new-man Fabi is the top challenger for Jaguar.

Jean-Louis Schlesser and Jochen Mass lead the Drivers Championship and Sauber Mercedes the Teams Championship, thanks to a solid performance from Wendlinger and Schumacher in the new C291, placed second after a faultless run.

The alterations to Silverstone's Grand Prix circuit were designed to make it slower, safer and better for spectators. It succeeded in all these areas although it remains one of Europe's fastest tracks, and there are a couple of places where the drivers are distinctly uneasy about the proximity of retaining walls.

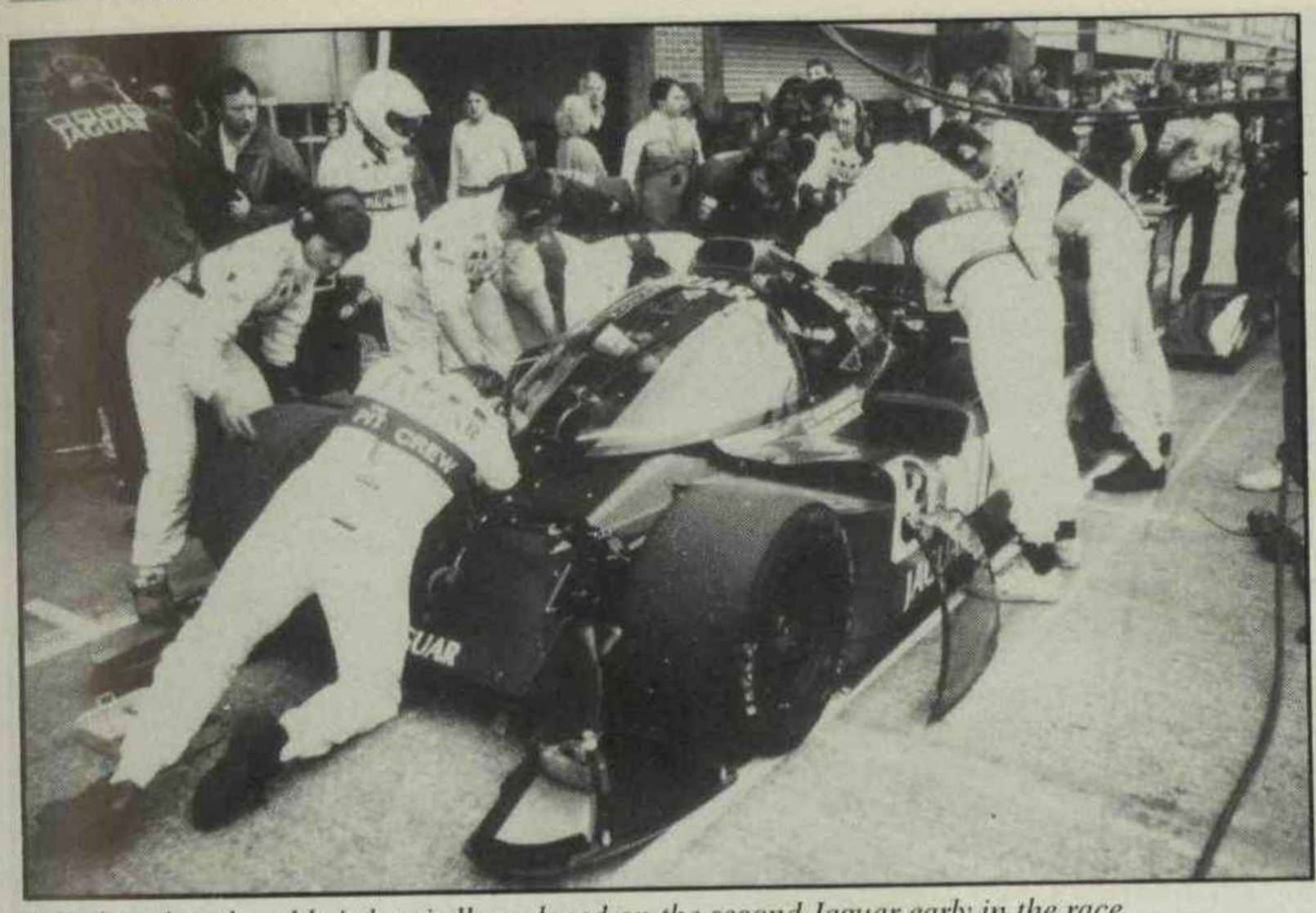
The emphasis is still on speed, make no mistake. Copse Corner has been opened up a bit and is slightly faster than before, so the traditionalists can spend all day there if they wish and pretend that nothing else has changed.

Becketts is now a series of ess-bends, in effect, with plenty of viewing, and the flat-out plunge to Stowe Corner is breathtaking as ever. The Jaguars seemed hardly to brake at all, although the corner keeps going around into the Vale, and the cars leap out of the dip for the slow approach to Club.

Reaching somewhere near top speed again through Abbey, the quickest drivers take Bridge nearly flat in sixth, with just a confidence lift, before braking hard for Priory. The Priory-Brooklands-Luffield section really is Mickey Mouse, like the sta-

STARTING GRID

3 **WARWICK** Jaguar XJR-14 1 min 27.516s	4 **FABI/BRUNDLE** Jaguar XJR-14 1 min 27.478s
6 **ROSBERG/DALMAS** Peugeot 905 1 min 31.431s	5 **BALDI/ALLIOT** Peugeot 905 1 min 31.236s
8 **PIPER/EUSER** Spice SE90C 1 min 36.738s	2 **SCHUMACHER/WENDLINGER** Sauber-Mercedes C291 1 min 31.476s
1 **SCHLESSER/MASS** Mercedes C11 1 min 32.117s	60 **SHELDON/STERMITZ** ALD 1 min 47.460s
16 **LARRAURI/PAREJA** Porsche 962 1 min 36.904s	11 **REUTER/TOIVONEN** Porsche 962 1 min 36.769s
17 **SIGALA/BRUN** Porsche 962 1 min 38.126s	18 **SALA/KENNEDY** Mazda 767B 1 min 37.326s
21 **KONRAD/NEEDELL** Porsche 962 1 min 39.688s	13 **TROLLE/BOURBONNAIS** Cougar-Porsche C265 1 min 39.308s
12 **MIGAULT/BRAND** Cougar-Porsche C265 1 min 40.312s	59 **ELGH/PALMER** Porsche 962 1 min 40.147s
	14 **SALAMIN/COHEN-OLIVAR** Porsche 962 1 min 45.136s



A broken throttle cable is hurriedly replaced on the second Jaguar early in the race.

dium section at Hockenheim, but it gets lively on the last laps of the supporting races.

Around this track the Silk Cut Jaguars set the world alight thanks to the supreme efforts of Warwick, Brundle and Fabi throughout the race weekend. They were simply stunningly fast, shimmering through the corners on the limits of adhesion, swooping like eagles on the slow, defenceless Porsches. Sparks flew from the skids, smoke poured from the bodywork which is still a tight fit over the rear tyres, and the opposition settled in for a wake.

Tom Walkinshaw's team seems to reserve its dramas for race day, which is about the only thing to cheer the opposition. Qualifying was pretty routine stuff for the Kidlington crew as the three drivers traded tenths, and halfway through the Saturday session Warwick and Fabi were tied on 1m 28.059s, so it seemed appropriate to suggest a tie-breaking motto such as "why I want to win at Silverstone tomorrow. . . ."

Warwick then improved to 1m 27.516s on Goodyear's 160 compound soft race tyres and it might have been better if the team had settled for having their number one driver on pole position, since the opposition was still way over the horizon. Competitors being what they are, though, Brundle had to have one more try and he grabbed pole at the last moment with a highly aggressive 1m 27.478s.

The average speed for that lap was 133.63 mph, and for comparison Schlesser's pole position last year in the Mercedes C11 turbo, rated conservatively at 850 bhp, worked out at 148.35 mph, and his Group C record at 139.50 mph.

Never let it be said that the new Silverstone has been emasculated, because it hasn't, and for comparison Gerhard Berger tested his McLaren-Honda in the 1-27 bracket earlier in the month. Nigel Mansell, though, was spectacular in the low 24s, and the 140 mph barrier is likely to be broken during qualifying for the British Grand Prix.

It's fair to say that Warwick wasn't overly impressed with his part-time team-mate's claim to pole, particularly since the two Peugeots and the Mercedes C291 were next quickest in the 1m 31s bracket.

As usual the Peugeot drivers were working terribly hard with cars that lacked downforce and grip, "but we do have good balance," said Mauro Baldi optimistically, clutching at straws. They can hardly wait for the Nürburg race in August, when the "Evo 2" version of the V10-engined 905 will appear. The Peugeots are particularly stiffly sprung and the cars appear to bounce like corks on the ocean.

The C291 had made a little progress which counted for a lot. The starter ring was made of different materials, a little heavier but stronger, and in compensation 5 kg has been taken from the weight of the gearbox. The baby Arrow now has an acrylic screen, saving another 5 kg high-up, and the car was weighed at 775 kg.

Again the handling was very impressive indeed, and but for 50 horsepower and 25 kg the C291 could be a very serious contender. But not this year, German personnel admit.

Schlesser was the quickest of the turbo-assisted drivers at 1m 32.117s in the Mercedes C11, 4.3 seconds quicker than Manuel Reuter in the Kremer Porsche 962C. In the two previous races the Kremer and Brun Porsches, weighing 950 kg at scrutineering, have been quite competitive with the 1000 kg Mercedes, but Silverstone seemed to suit the *grosse* Arrow very well.

Protestations from Schlesser and Mass that their car, too, should weigh 950 kg have fallen on deaf ears, to the relief of Jean Todt. Mercedes reckon that each 50 kg is worth a second per average lap, so at last year's weight of 900 kg the C11 would have qualified at 1m 30s and might have led the Peugeots in the race. And that, of course, would never do in the first year of the new formula.

Jaguar's turkey shoot

The Americans have a nice phrase for Jaguar's situation, a "turkey shoot". Teo Fabi simply drove away from the entire field and waved each time he lapped his rivals, although by the tenth time around he'd already begun to ease off to save the car.

Brundle didn't have such a happy time, missing third gear on the run to Copse and dropping into the pack. Philippe Alliot had to take avoiding action and was hit a glancing blow by Wendlinger's Mercedes, losing a wheel spat, so for a while it was Keke Rosberg leading the pursuers with Wendlinger in hot pursuit.

Spectators in the grandstands were glad if they had ear plugs, for the blend of German flat-12 and French V10 has a piercing quality. Alliot was soon in with a deflating tyre, perhaps caused by the start incident, and to the amazement of the more seasoned teams the crew failed to put fuel into the Peugeot, so it had to stop again seven laps later by which time the power steering system had failed.

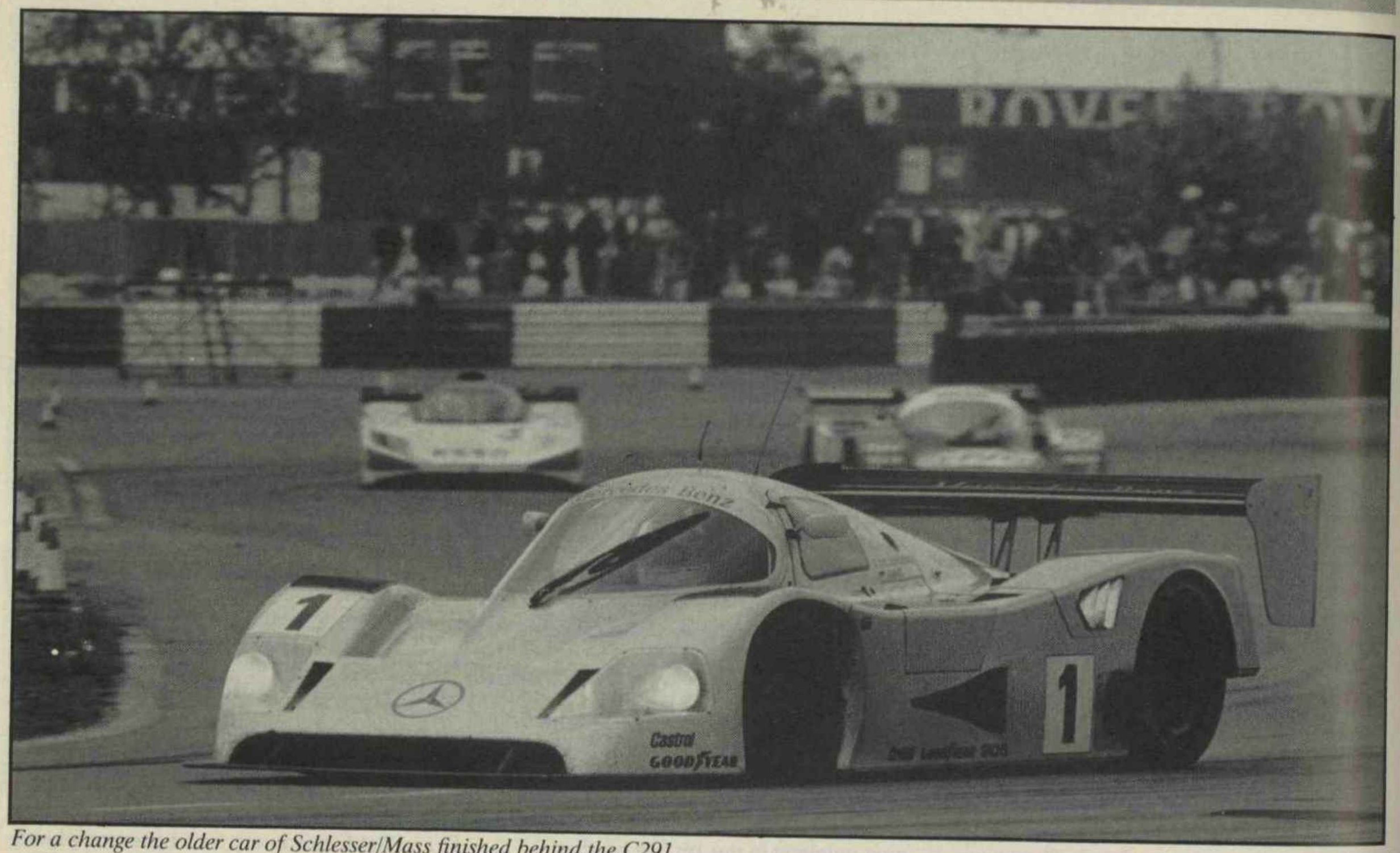
As Alliot soon realised, when this happens the system doesn't merely stop assisting, but it works against the driver, so he and Baldi had a very torrid afternoon heading for sixth place.

Mercedes' engineers uncrossed their fingers and breathed out when Wendlinger passed Rosberg, whose Peugeot was misfiring badly. One of the Mercedes' 24 plugs had broken in the morning warm-up and the electrode was never found, but since it takes six hours to change the flat-12 there was no choice but to carry on with a prayer.

Rosberg fell away quickly, was lapped the 20th time around, and then even the C291 was put into the cruise mode for a finish. Rosberg's points score remained stubbornly on zero as the V10 engine blew up just after half distance, as it had at Monza.



The Peugeot challenge never amounted to anything at Silverstone despite the efforts of Rosberg.



For a change the older car of Schlesser/Mass finished behind the C291.

Brundle's progress from the back of the field was meteoric in the full sense of the word, because when they'd been refuelled both Jaguars were leaving a trail of sparks from the skids, suggesting that the front torsion bar suspension was sagging under the strain. With Fabi and the Mercedes drivers on economy Brundle was able to pull back two of his lost laps, and many people in the crowd remembered their schoolday mathematics to work out where he might finish.

An active racing driver like Warwick doesn't take kindly to hanging around in the pits, and playing for points isn't his idea of a nice Sunday pastime. Walkinshaw kept him out of the cars until the last possible moment, then put him into Fabi's on lap 58, leaving him precisely 30% of the remaining distance to earn his points.

But what points? Brundle didn't get any at Monza because he drove two cars, but he was nominated for both of them. Clearly Warwick had been nominated only for one, number 3 which was driven throughout by Brundle, but Walkinshaw would argue forcefully that the rules allowed for this situation.

After the race a set of results was issued showing Fabi and Warwick as the winners. A few minutes later a second set was issued showing Fabi alone as the winner, seemingly without a co-driver. Thirty-one minutes later a third set of results again showed Warwick as a winner, but deprived of points.

Now, fast forward to Monday afternoon, 24 hours after the race, when TWR were pleased to announce that they had been allowed leave to appeal against the decision of the stewards, through the ASN (the Royal Automobile Club). "Good old Tom" we all thought.... but on Tuesday afternoon, 48 hours after the event, FISA issued a bulletin signed by Yvon Leon denying that TWR had been given leave to appeal!

The trouble is that World Championship motor racing is now so rule-bound that teams might find clauses preventing them from doing anything at all. Never mind the competition, the stewards seem to be the people that drivers and managers most fear!

It must be worth noting that Max Welti, the extrovert former team manager of Sauber Mercedes, has been replaced this year by a mild and modest grey-suit who keeps in the background. He is Doctor Urs Scherrer, a lawyer and international juror, who is strictly the Sauber team's administrator in the fullest sense of the word. One day, as others have predicted, your lawyer is going to be the most important member of your racing team.

MLC

RESULTS

SILVERSTONE 430 kms, MAY 19

Pos	Driver	Car	Time
1st	Fabi/Warwick*	Jaguar XJR-14	2h 12m 30.045s
2nd	Schumacher/Wendlinger	Mercedes C291	82 laps
3rd	Brundle	Jaguar XJR-14	79 laps
4th	Schlesser/Mass	Mercedes C11	79 laps
5th	Piper/Euser	Spice SE90C	78 laps
6th	Baldi/Alliot	Peugeot 905	78 laps
7th	Larrauri/Pareja	Porsche 962	77 laps
8th	Reuter/Toivonen	Porsche 962	76 laps
9th	Trolle/Bourbonnais	Cougar-Porsche C265	75 laps
10th	Sigala/Brun	Porsche 962	75 laps
11th	Sala/Kennedy	Mazda 767B	74 laps
12th	Salamin/Cohen-Olivar	Porsche 962	NC
13th	Rosberg/Dalmas	Peugeot 905	DNF engine
14th	Konrad/Needell	Porsche 962	DNF engine
15th	Elgh/Palmer	Porsche 962	DNF engine
16th	Migault	Cougar-Porsche C265	DSQ

*Warwick does not score championship points.

Drivers' World Championship: 1st = Mass, Schlesser, 37; 3rd Fabi, 35; 4th = Alliot, Baldi, 29; 6th Euser, 28.

Teams' World Championship: 1st Sauber Mercedes, 42; 2nd Silk Cut Jaguar, 40; 3rd Peugeot Talbot, 29; 4th Euro Racing, 28; 5th Porsche Kremer, 23.

MOTOR SPORT GOODYEAR COMPETITION

Welcome to the second round of the MOTOR SPORT/ GOODYEAR competition in which the prize is a fabulous weekend for two at the Belgian Grand Prix on the weekend of August 24/25th.

Not only will the lucky winner receive two tickets for the Grand Prix at the fabulous Spa circuit, but they will be flown to Brussels on Friday, 23rd August, be put up at the 5 star Sheraton hotel, view the race from the Raidillon Grandstand and then be flown back to London on Monday, 26th August.

If ever there was a way to watch a Grand Prix, this has to be it.

Unhappily there can be only one winner, but despair not, for there are hundreds of pounds worth of consolation prizes. Thanks to the generosity of GOODYEAR there are 10 rally jackets, 20 sweaters and 50 books, all commemorating Goodyear's 250 wins in Grand Prix racing to be won.

The final part of the competition will be in the August issue. All answers will have to be received at MOTOR SPORT , Goodyear Competition, Standard House, Bonhill Street, London EC2A 4DA, by first post Monday, 12th August.

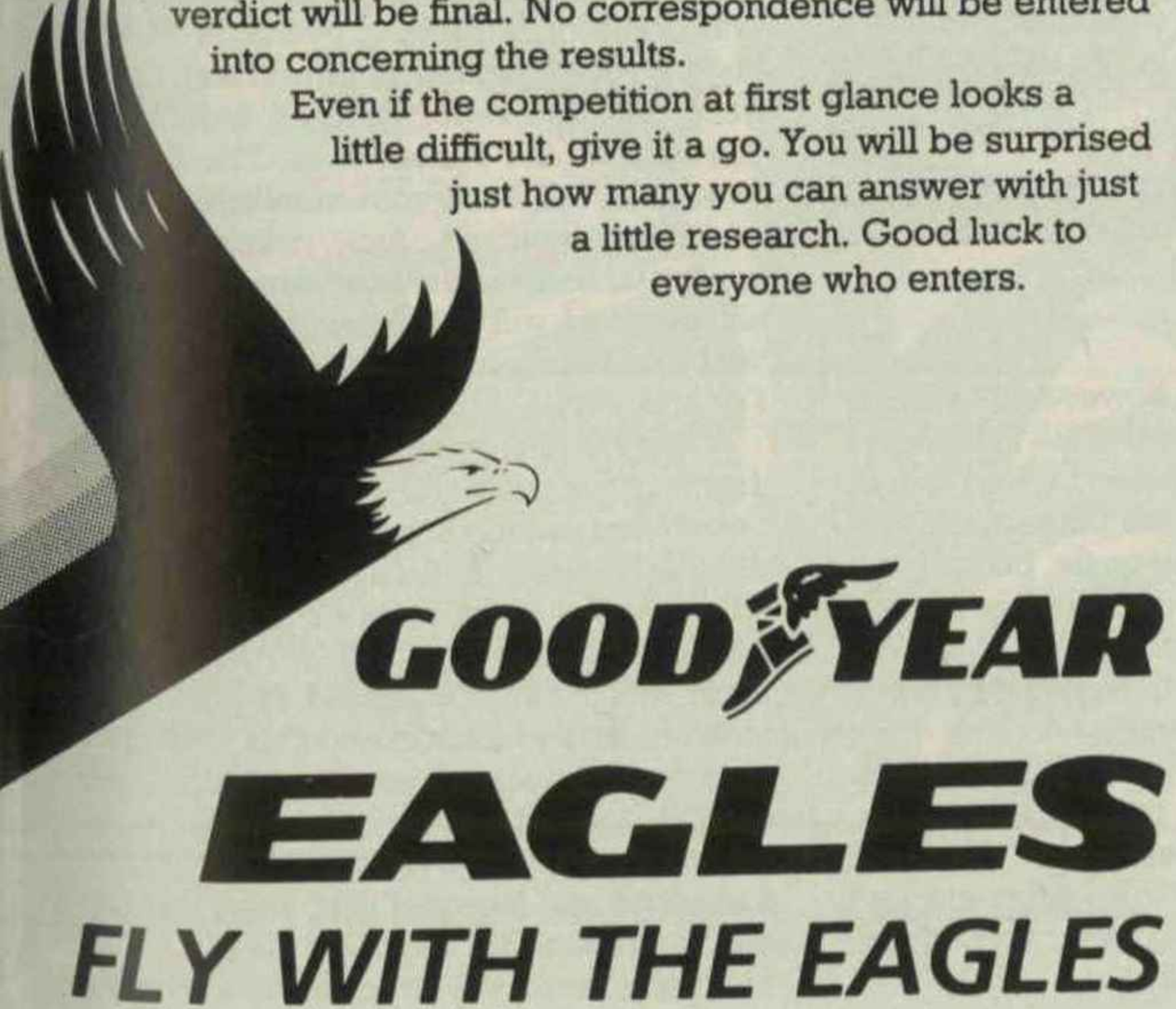
Entrants must answer all questions using the forms provided or photocopies, but only one entry per household please. You can either send in your answers on a month by month basis or else wait until all the questions are published and then send your answers into the office in one go.

Unfortunately for obvious reasons the competition is not open to employees of Teesdale Publishing Co Ltd or of Goodyear Great Britain Limited.

The final question will be a tie-breaker and the judge's verdict will be final. No correspondence will be entered into concerning the results.

Even if the competition at first glance looks a little difficult, give it a go. You will be surprised just how many you can answer with just a little research. Good luck to everyone who enters.

1. All Ligier model numbers are prefixed by the letters JS. What do they stand for?
2. Who scored Ferrari's first ever World Championship Grand Prix win?
3. At which race did the Ligier JS5 make its first Grand Prix appearance?
4. Which of the following has NOT won a Grand Prix? A. Toleman B. Eagle C. Hesketh D. Shadow
5. Who was excluded from this year's Monaco GP for failing to see the red light?
6. Which was the first rear-engined single-seater Lotus?
7. Who was the first German driver to win a Grand Prix since 1939?
8. Who won the 1937 Donington Grand Prix? Was it A. von Brauchitsch B. Caracciola C. Rosemeyer
9. Who scored the most number of fastest laps in Grand Prix racing in 1990?
10. At which Grand Prix did Honda score its 50th Grand Prix win?
11. What was Senna's first Grand Prix victory?
12. In which Grand Prix did Olivier Grouillard score his first World Championship points?
13. In what year did Ken Tyrrell announce the arrival of his own Formula One car?
14. Who was the designer responsible for the Arrows A2?
15. In which race did Nuvolari first race in an Auto Union? Was it A. 1938 Pau GP B. 1938 German GP C. 1938 Italian GP
16. In which year did the French Grand Prix take place on the Bugatti circuit at Le Mans?
17. Who scored the Minardi team's first ever World Championship points?
18. In what position did Reine Wisell finish in his first Grand Prix?
19. Who was the designer of the March 881? Was it A. Adrian Newey B. Gustav Brunner C. John Judd
20. At which Grand Prix did Senna record his 50th pole position?



1. _____ 11. _____
2. _____ 12. _____
3. _____ 13. _____
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Hark These Words

Sports car racing enthusiasts in Japan, Italy and Britain have now had the chance to see for themselves how very fast and fragile the new 3.5-litre Group C cars are. Many drivers at Le Mans, notably five times winner Derek Bell, have seen at first hand how braking distances are dramatically reduced, and how, in a couple or three seconds, dots in the mirrors become purple, silver or white threats to the 1000 kg dinosaurs.

"Those turbos are chicanes, aren't they?" commented Kenny Acheson in Silverstone's Stowe grandstand during the Saturday morning session. Superficially he was right, of course, yet we weren't comparing like with like. The unlimited capacity cars were ballasted to 1000 kg, or 250 kg more than the prototypes, and ran to a strict fuel regime in all but the vital minutes of qualifying.

It would be interesting to see how the Mercedes C11 and Porsche 962s would fare at 900 kg, and with no heed for fuel consumption. The two Jaguars would be faster than the C11, of that there's no doubt, but the smallest tear in purple fabric on race day would be a gift for the German team. Peugeot would be embarrassed, and it shouldn't be surprising that Jean Todt is so against the presence of the old Group C cars.

I tried to remember, at Silverstone, how we felt the last time Formula One-engined prototypes were unleashed, at Buenos Aires in January 1972. The FIA's CSI bureau (FISA's predecessor) hadn't considered it necessary to allow the Porsche 917s and Ferrari 512Ms an extended lease of life so the speed differentials weren't very great (and on a good day, on the right track, the Ferrari 312PB and Alfa Romeo T33 had been able to nip the heels of the 5-litre Porsches, just as the Spices did to the Mercedes and Porsche turbos last year).

Three scarlet Ferrari Spyders were lined up in echelon in the Buenos Aires paddock, glinting in the sunshine and radiating in 100-degree temperatures. There were no Italian drivers in the first line-up though Mario Andretti saved Italian pride, partnering Jacky Ickx; eventual winners Tim Schenken and Ronnie Peterson while Brian Redman drove with Clay Regazzoni. Even the team manager was Swiss, former hill-climb champion Peter Schetty having been called in to give the sometimes shambolic team a bit of discipline.

Facing them, in ragged order, were the dull maroon Alfas of Rolf Stommelen and Toine Hezemans, Vic Elford and Helmuth Marko and. . . . ah yes, the Italians, Andrea de Adamich with Nanni Galli and Nino Vaccarella with local man Carlos Pairetti.

With the avuncular Carlo Chiti in charge of design and execution it was hard to believe that the Alfas were in the same league, although the talented Stommelen did share the front row with the irrepressible Ronnie.

The Anglo-Swiss threat was real enough in the shape of Jo Bonnier's Lola team, representing Eric Broadley's company in fact, with two T280s for Bonnier and Reine Wisell, and Chris Craft with Gerard Larrousse. The latest 12-series Cosworth DFV engines were reckoned to be worth 445 bhp at 10,800 rpm, and unlike their principal rivals the Lolas were underweight, ballasted to 653 kg, a safe 3 kg above the minimum. The flat-12 Ferrari engines were said to develop 460 bhp at 10,800 rpm and the lightest of the three cars weighed 663 kg.

Carlo Chiti was heavily into safety in that era, not without reason, and made the *tubolares* of steel rather than aluminium materials. Following Ignazio Giunti's fatal accident at the Parc Admiral Brown the previous year (in a Ferrari, incidentally) Chiti had developed a safety fuel tank which, he demonstrated, simply could not explode.



Buenos Aires, 1972: the start of a season of full grandstands.

The twin tanks were, however, 52 pounds (23.6 kg) heavier apiece and the least heavy Alfa weighed 709 kg, leading Elford to beg Chiti to have conventional tanks in his car. Chiti declined with a sad smile, pointing out that this would be unfair to the other drivers! Since the Milanese V8 engines were quoted at 445 bhp at 10,500 rpm, Stommelen was a real hero to split the Ferraris.

There were, neatly, twelve decent 3-litre cars in the field and twelve 2-litre cars, Chevrons and Lolas mainly with Cosworth FVC engines, though Arturo Merzario and Spartaco Dini were quickest, and eighth overall, in an Abarth 2000.

Non-starting after blowing up in practice was the V8-engined Berta, built by Argentinian Oreste Berta, and almost unbelievably 50,000 spectators turned up for the first practice session on Thursday (a public holiday). I don't know if there were really that many spectators, but photographs show packed grandstands and there was a Grand Prix atmosphere about the place, so long as the wind blew the smell of the smouldering municipal rubbish dump away from the pits.

Did the sun always shine? Were the grandstands always packed? Did the Ferraris always win?

Well no, there were some wet and sombre days, and Sunday morning at Le Mans was never more bleak when news came of Jo Bonnier's fatal accident. He had driven his Lola into the back of a Ferrari Daytona and flown into the trees, a momentary misjudgement caused, perhaps, by fatigue, and that was the beginning of the end for the Swiss team.

Reine Wisell, who set fastest lap in the Argentinian race and so closely compared with Ronnie Peterson at that time, could surely have become one of the world's great sportscar drivers, yet he rarely drove two-seaters again until he became interested in historic racing.

The grandstands remained full in 1972 and 1973, but emptied in 1974 when Enzo Ferrari turned away from endurance racing to devote the full energy of his team to Grands Prix. With the advent of turbocharged cars in 1976 public interest continued to wane, but it was noticeable how the crowd turned to a nice-sounding, wailing V12. . . . we hear these noises again in 1991.

Ferrari wouldn't go to Le Mans in 1972, saying that his Formula 1-engined cars weren't suitable for 24-hour racing while Matra only did Le Mans and had an easy time. Graham Hill established a unique record envied by Derek Warwick, for one. . . . twice World Champion, Indianapolis winner, *vainqeur du Mans*.

1973 was the watershed year in which Matra edged Ferrari off the throne. Ferrari sent a full team to Le Mans and we enjoyed one of the most exciting events in 24-hour history with Ickx and Redman, and Carlos Pace with Merzario, keeping tremendous pressure on the French V12s. The Ferraris eventually fell back with vibration-induced problems, cracked fuel collector pots, header tanks and exhaust systems, the sort of ailments that will cause many a delay next year when all the important teams have to run Formula 1-type engines.

It was the energy crisis of 1974, more than anything, that put the lid on the 3-litre formula. Ferrari had pulled out in any case and Matra decided to make '74 their last year. We were left with the excellent Gulf-Mirage team, winner at Le Mans in 1975, the Alfa Romeo team which never managed to get an act together, and a bunch of hopefuls waiting for the new "silhouette formula" to come along in 1976.

If we can have two cars each from Jaguar, Mercedes and Peugeot next year, and two each from Nissan, Toyota and Mazda, surely the grandstands will fill again? No, I am not going to harp on again about Le Mans because that is a separate issue which is clearly incompatible with the 430 kilometre sprint races, and will need a separate solution.

Hark these words: "Why would they want our engines? There isn't one engine in this Grand Prix that could go 500 miles. Their engines are reliable, ours are not. They're fairly certain of a good competition at every event. Why change?"

Nigel Mansell isn't normally at the forefront of philosophical exchanges, but the Automobile Club de l'Ouest will be indebted to him for this exposition. He wasn't talking about Le Mans, nor even about the Sportscar World Championship, but about the Indianapolis 500. Same difference.

MLC

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The C291, Mercedes' Le Mans and championship contender for 1992.

Dr Hermann Hiereth, technical director of the Mercedes Sportscar World Championship programme, and car designer Leo Ress explain the background to the high-technology C291, the new "Silver Arrow" sports car.

Mercedes, Jaguar and Peugeot had spent two years preparing for their first confrontation in FISA's Sportscar World Championship, and their high-tech challengers met for the first time at Suzuka, Japan on April 7. At once the Mercedes C291, the Jaguar XJR-14 and the Peugeot 905 made the Porsche 962s, even the year-old Mercedes C11, look old, heavy and cumbersome, as indeed they must be with a weight penalty of 200-250 kilogrammes.

Sportscar racing, as the traditionalists know it, is now a thing of the past. The races are over and done with in 430 kilometres, little more than two hours' worth of Monza or Silverstone, and the term "two-seat Grand Prix cars" seems entirely apt.

The old-generation Group C cars were designed to win the 24-Hours of Le Mans, and then honed, adapted and modified to win "sprint" races as well – the new breed is thoroughbred, nervous and twitchy, seemingly at the outer limits of control, and will need some persuasion to last around the clock when put on duty for 24 hours.

Perhaps the Mercedes C291 is an exception, though. Maybe it is next year's Le Mans winner, and if rumours are correct, the car to give the Stuttgart company its triumphant farewell to sportscar racing, and an entree to the world of Formula 1.

The C291 maintains a Silver Arrows tradition of being unorthodox in design, yet Dr Hermann Hiereth maintains that any attempt to be different, for the sake of it, would have led to compromise.

Mercedes' board of management gave the go-ahead for a new challenger in the 3.5-litre class in 1988, as soon as FISA announced that the new formula would be launched on January 1, 1991, and research started early in 1989. "The research took two months and involved 15 concepts" says Dr Hiereth. "Some were conventional and some were very advanced, and we formed a team of five to consider them."

The five were Dr Hiereth, his assistants Gert Withalm, Willy Mueller and Sigurd Heinmuller on powertrain development, and Leo Ress, who works for Peter Sauber in Switzerland as the overall car designer, with special responsibility for the chassis, suspension and aerodynamic bodywork.

"We made a notebook of the parameters we wanted to achieve" Dr Hiereth recalls. "The output of the engine (650 horsepower was our target), a certain weight (it had to be the minimum, 750 kg), a certain length, and the most important thing, the aerodynamic efficiency.

"We considered eight, ten and twelve cylinders, and what you see today is the result of the conclusions we reached...a 180-degree, 12-cylinder engine which gives us a very low centre of gravity, without any penalty concerning the aerodynamic efficiency."

The first engine built by Mercedes at 3.5 litre capacity was a V12, constructed from two experimental V6 engines which happened to be available in the company's research department. Drive was taken from the centre of the crankshaft, and the engines were of aluminium construction with four-valve cylinder heads.

"We started with an output of 530 to 540 horsepower, and realised that this is the base which anyone can achieve – the problems begin when you get to around 600 horsepower, where we are at the moment."



Leo Ress confirms that a single, full-width venturi tunnel underneath the flat engine is more effective than two more conventional tunnels, one each side of a vee. "It was hard work to get the package balanced, because the flat engine allows a low centre of gravity but the gearbox makes it higher. We moved the gearbox a bit in the wind tunnel, and when we looked at the result we redesigned the gearbox!

"I had no experience of an undertray like this, and I was busy with the C11 when they made the initial studies. When we got to the wind tunnel we realised that many things would have to be changed, but in the end we reached a good compromise."

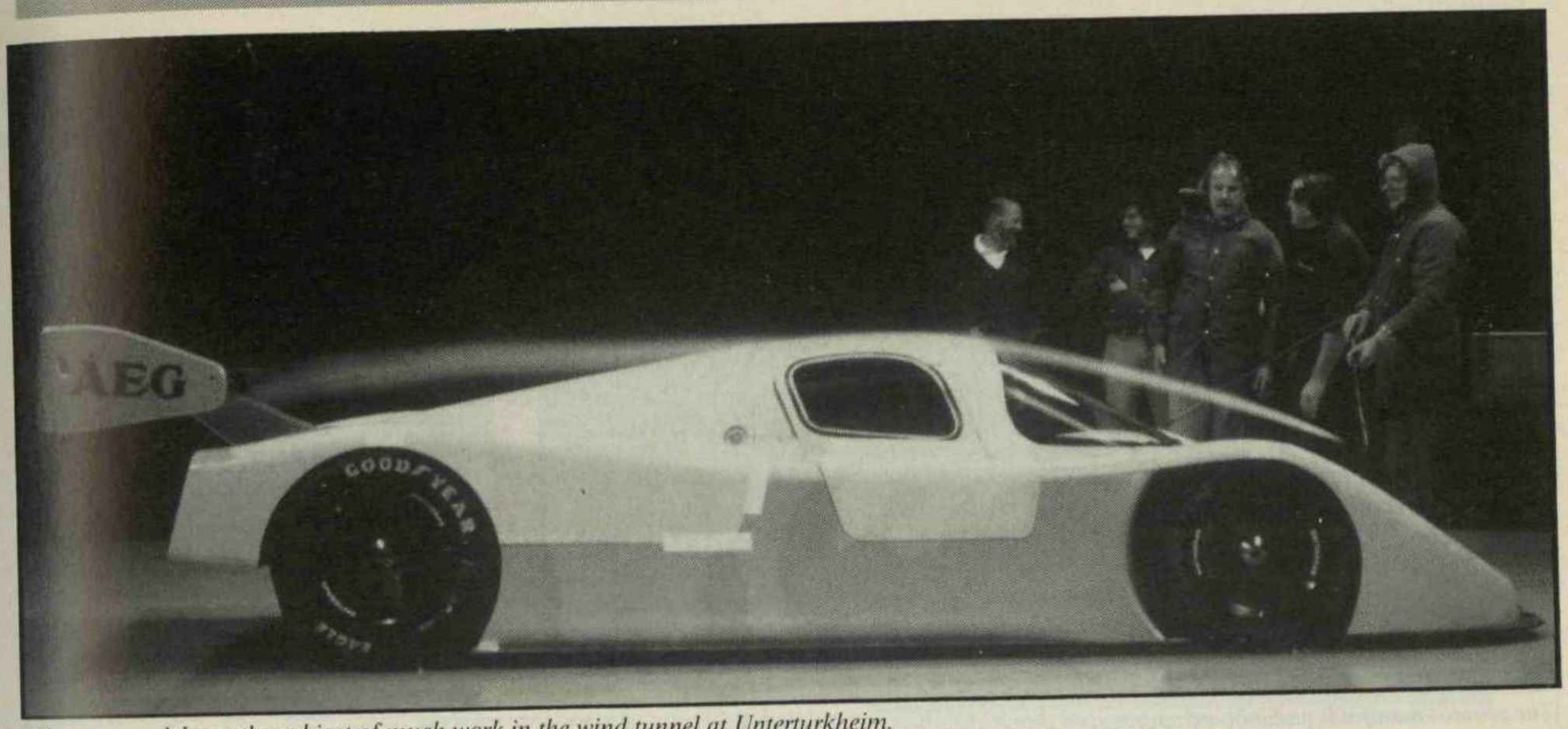
It was no easy matter developing the C291. There were a great many new-car problems when the car was tested at Paul Ricard and Jerez — indeed, a team is expected to meet these problems, and deal with them — to do with the oil circulation in the flat-12, and with the unusual 6-speed, transverse gearbox.

At Suzuka it immediately became apparent that the new Mercedes was off the pace of the Jaguars, though competitive with the Peugeot 905s, and this was underlined at Monza and Silverstone in the next six weeks. The Jaguars are around four seconds faster on an average lap, and up to 10 kph faster through speed traps. Such a difference is enormous and would cover a Formula 1 grid from pole man to back-marker.

Visually and with a stopwatch, an observer can tell that the C291's chassis is virtually the equal of Jaguar's but acceleration out of the corners is relatively slow, indicating a poor power-to-weight ratio. Peugeot's handling is obviously nervous and the drivers have difficulty putting down the power of the V10 engine, so for the time being the Jaguars have a clear advantage. The next test comes at the Nürburgring on August 18, when Mercedes and Peugeot fervently believe they will narrow the gap.

By the start of next season the Mercedes will be down to 750 kg and the power output will be at, or near the 650 horsepower mark. Progress was made in the first three races and the whole team was heartened by the second position at Silverstone (a result that enabled Sauber Mercedes to remain at the head of the Teams Championship). The objective, though, is to win races in 1992. . . . nothing less will be good enough.

The C291 raced at Suzuka weighed 790 kg and the engine was underpowered, so the areas of development are obvious. By the time the car had got to Silverstone it had shed 15 kg (the acrylic windscreen saved 5 kg and another 5 kg was pared from the transmission). Ress says that the next 15 kg will be more difficult, and Dr Hiereth concedes that the missing 50 horsepower may



The new model was the subject of much work in the wind tunnel at Unterturkheim.

not be found before the end of the year.

Clearly this year's results won't match those of the past two championship winning seasons. The cost of innovative, complex design has been dear in terms of early results, and already Mercedes is beginning to regard the C291 as a machine that will mature.

"Maybe we started too complicated for the organisation we have" says Ress. "Walkinshaw is much more experienced in racing, more professional I would say, and he didn't need to develop the engine. Perhaps it would have been better for us to have a safe aim, to have the car running, because if you make your steps too big you always struggle, you never reach the goal."

Few designers would have considered a flat engine in the era of ground-effects, but the C291 clearly has superb handling in the high-speed corners. Schumacher and Wendlinger show breathtaking control in a car that runs rings round the old turbos, and at Monza Schumacher said that he had to brake at odd times to avoid running into the back of Fabi's Jaguar!

Despite the unusual configuration the car has considerably more downforce than the C11 (neither Dr Hiereth nor Ress would quote any figures), and the full-width venturi tunnel has the maximum permitted depth of 28 cms. Clearly the concept is sound.

The design of the engine is unusual with the fuel injection system alongside the cylinder heads, injecting between the twin plugs and four valve stems, and the exhaust ports on top. Drive for the transmission is above the centre-point of the crankshaft and that involves having a gearbox that's higher than the engine.

A monobloc construction is used (like that on the Porsche 962) with welded cylinder heads, a solution that gives the engine great strength and high thermal efficiency; these were extra advantages sought in the flat-engine configuration, Dr Hiereth confirms, not available in a vee engine. It seems likely that in time, the engine will develop 650 bhp at 14,000 rpm, compared with 13,000 rpm at Suzuka.

"The engine is overweight" says Dr Hiereth. "At Mercedes we can't have an engine that doesn't work, you see, so we had to build everything a bit bigger, or a bit stronger, to make sure that everything works from the beginning. We will reduce the weight, and increase the power step by



step, but it will take time."

TAG Electronics, a McLaren subsidiary headed by Dr Udo Zucker, supplies the advanced engine management system which is unique to the C291. A comprehensive telemetric system is incorporated and Dr Zucker, recognised as the 'father' of the Motronic system while at Bosch, says that five million bits of information are transmitted per second...enough to occupy 1500 telephone lines at one time.

"At first," says Ress, "we had 16 kilos of measuring equipment on the engine.... imagine that! It takes one hour just to put tie-wraps around the lines.... it takes six hours to change the engine and another six to get it running! The objective is to be able to change an engine in three hours, but that's not going to be easy either."

The chassis and body were clearly the easy part of the design, comparatively speaking. Despite the similarity in appearance to the C11 Ress denies that the C291 is an evolution, although he adds with a laugh, "everything you do is an evolution of yourself, and I am a sports car designer."

The composite material monocoque easily passed FISA's mandatory crash test which involved loading the sledge to 900 kg and running into a block at 56 kph. The test, at Unterturkheim, was observed by FISA engineer Patrice Catalano. Then the body, which has an integral roll-over hoop in the roof, was voluntarily subjected to a massive 8.5 tonne crushing test, in which it yielded just 2.6 mm.

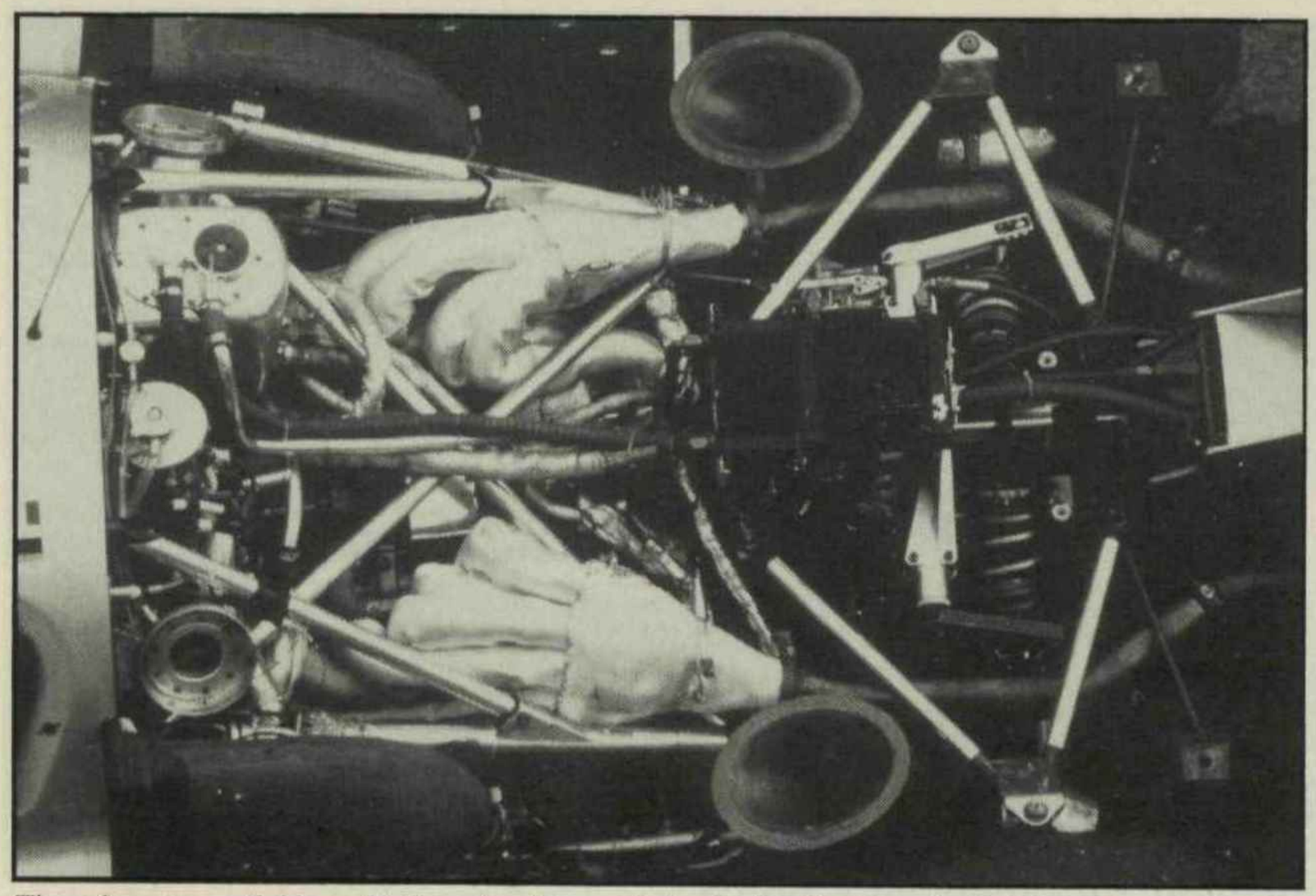
The body regained its shape when the weight was removed, and has been put through the test twice more without coming to harm. The drivers can sleep easy, knowing that the highest possible safety standards have been reached.

Much comment has been made about the full-width aerofoil at the front, like a double skin above the real nose, which forces air into the cooling ducts on both sides of the windscreen base. The first model, Ress explains, was a C11 nose with the radiator taken out, and the wind tunnel effectiveness persuaded him to develop the idea.

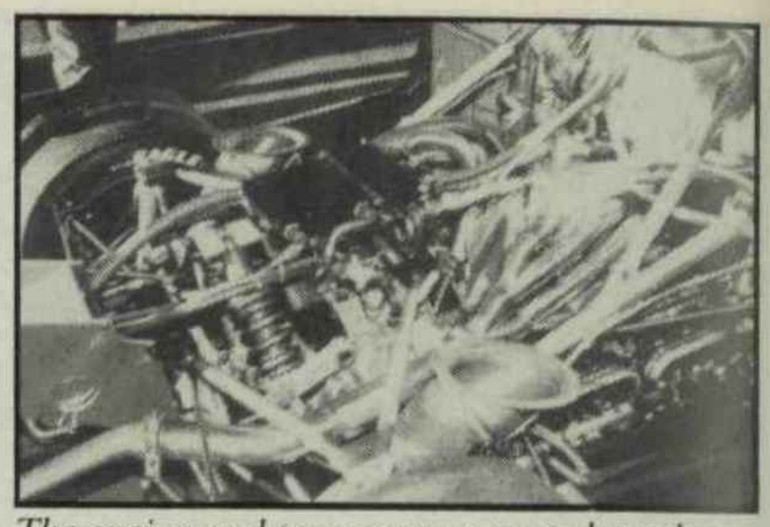
"Without the upper skin the front looked very ugly, and then we just glued a panel in. Everyone thought there was a radiator in there, but the wind tunnel results were good. We have good figures for cooling and downforce, and the rear downforce is good too, air over the wing."

At some stage the size of the twin water radiators had to be increased, and at that point the design grew a pair of 'ears' behind the door apertures, actually cold air boxes for the engine. It's a neat solution compared with the collector boxes on the roof of the Jaguar and the Peugeot, and is good for the flow of air over the wing.

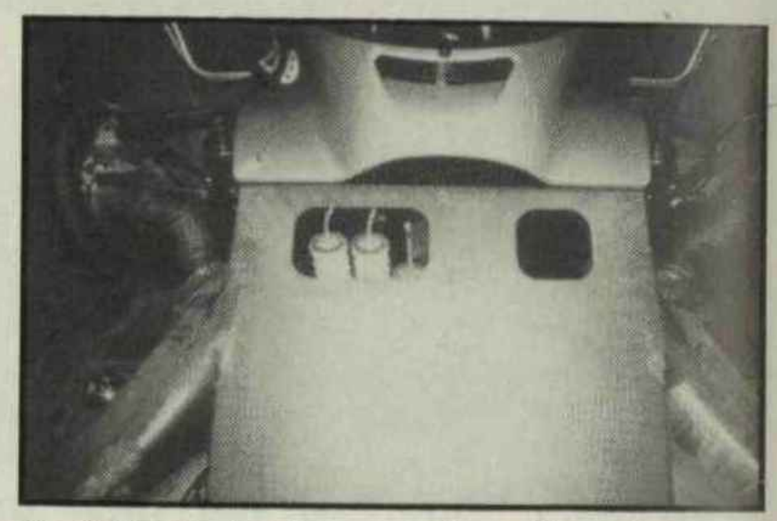
It was Dr Hiereth who expressed satisfaction with the aerodynamic efficiency of the C291. "Our design allows better aerodynamic efficiency than two tunnels.



The exhaust manifolds and inboard springs and shock absorbers are the dominant view under the bodyshell.



The engine and transverse mounted gearbox.



Underbody development has allowed greater downforce.

The effectiveness is defined as drag coefficient divided by downforce, and this gives you an aerodynamic efficiency factor. . . . or vice versa, if you like, downforce divided by drag coefficient. We are above the C11 by far, and that was considered to be an efficient car." Dr Hiereth declines to say how much stiffer the C291 may be, but offers that it is twice as stiff as the C9 model in 1989.

The suspensions are very different to those on the C11, which is interesting. In order to keep the rear tunnel clear and unobstructed the springs and shock absorbers are located inboard, transversely on top of the gearbox and operated by push-rods and levers; the gearbox itself is installed transversely and its operation is novel, on motorcycle principles with a push-pull lever (Michael Schumacher mentions that it takes 0.1s to change gear, against 0.2s in the C11).

Front suspension, moved inboard on the C11, goes outboard again in order to have a clean monocoque with no apertures; Ress was concerned to pass the frontal crash test with ease, another reason for the double-skinned nose. Also, it is far easier for the mechanics to maintain, with spring and damper changes taking only a few minutes. The C9's suspension was mounted on the lower wishbone, but the C291's is located on the chassis and operated by pull-rods.

Brakes, of course, are carbon from the Brembo company, and suppliers include Goodyear for tyres, Sachs for shock absorbers, TAG for electronics, Behr for radiators and Castrol for lubricants. Curiously, in the car prepared for Schumacher and Wendlinger, the dashboard is marked entirely in English, "the international language of motor racing," as Jochen Neerpasch explains.



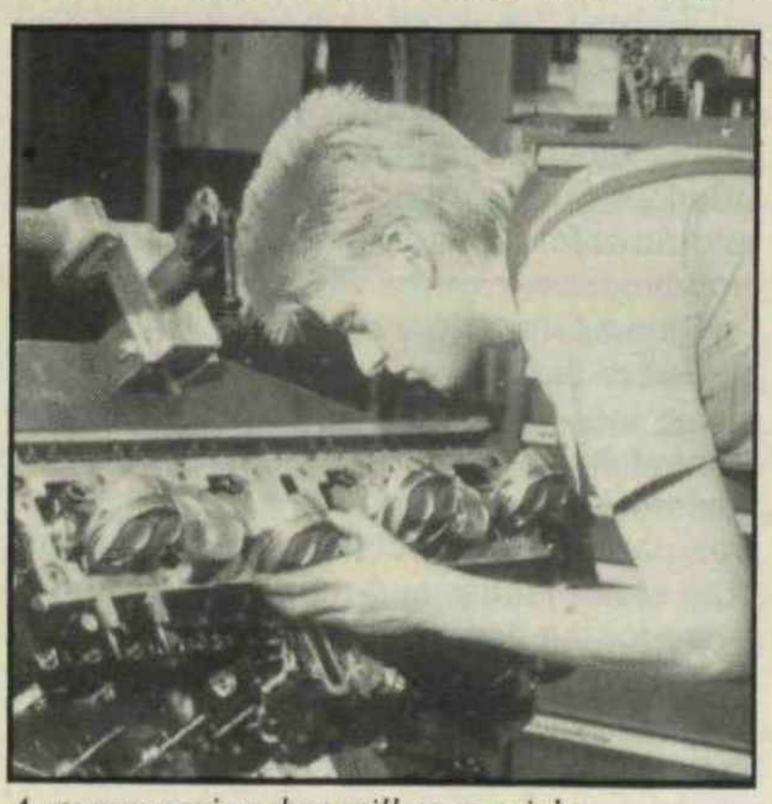
Future developments include automatic, or semi-automatic operation of the gearbox, and active suspension. An active suspension system has already been developed on the C11 but the weight penalty, in the early stages, is some 40 kg, and that's out of the question for the C291 at the moment.

It is a Mercedes system similar to that in top-model passenger cars involving electronic control of springs and shock absorbers, not the Lotus patent system with hydraulic rams. "Michael Schumacher is a great fan of the active suspension, but he has to be patient for it," Dr Hiereth says with a smile.

Mercedes and Sauber have built a car with enormous potential, of that there is no doubt. In 1992 it may well prove to be the pace-setter, a machine in advance of its time, but Dr Hiereth and Leo Ress also acknowledge that the Jaguar will have progressed too by the start of the '92 season.

There was never any chance that they could repeat the domination of the Silver Arrows in 1954-55, a time when, as Stirling Moss says, "there would have been something wrong if they had not won all the races, such was their superiority," and the same might be said of their domination in 1989 and 1990. If Mercedes should decide to tackle Grand Prix racing, as many people suppose they will, all the hard lessons of the current programme will have to be analysed thoroughly. MLC

Colour transparencies courtesy of Mercedes-Benz.



A strong engine, but still overweight.

Key Features

Peter Sauber, team principal, is 47. He and Leo Ress designed the C8 in 1983/4 around the Mercedes-Benz V8, twin turbo engine. The C8 first appeared at the Le Mans qualifying in 1985, and looped at the end of the Mulsanne Straight. First race victory Nurburgring, August 1986. Mercedes gave official support in 1988, when AEG sponsorship replaced Kouros. The C9 became a 'Silver Arrow' in 1989, won world championships 1989 and 1990.

The C291 engine and transmission are designed and built at Unterturkheim. Chassis build at Peter Sauber's headquarters in Hinwil, near Zurich. Wind tunnel at Unterturkheim. Action photos taken during winter trials, the car races as 2. Suzuka: retired with faulty fuel nozzle, fire follows first pit stop. Monza: retired first pit stop, broken starter ring (as in qualifying). Silverstone: finished in second position. MLC



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Juha Kankkunen returned to the winner's circle again when he took the lead from Sainz near the end.

Ride a Crooked Trail

They used to call it the toughest rally in the world outside Africa. In a way, it still merits that description, for it still uses special stages which are rougher than those of any other round of the World Championship, and has the highest retirement rate of the series, largely due to heat, dust, rocks and a time schedule which still allows very little opportunity indeed for any major servicing.

The Acropolis Rally used to be something of a mountain road race. The stages were real car-breakers, and were strung together by such tight timing that if anything broke, retirement was the inevitable consequence. Reliability was vital, and anyone who tackled the event in a car which was not built for strength was just asking for trouble.

Today, rest stops have softened the event as much as they have any other, but some of the stages are still rough and some of the timing still so tight that anything other than refuelling or a tyre change can easily lead to lost minutes. There were many new stages this year, some of them quite smooth, but the bite of Greek rocks was still there in places and no-one could take chances by using cars which were in any way fragile.

But modern rally cars are as purpose-built as racing cars. They are technologically advanced, often temperamental, and are designed to give of their best for the time required. It matters little whether a car will go on performing for several weeks. If a rally lasts just five days, then that is all that is required, although the equation for reliability does not actually take into account such precision over life span.

The roughness, of course, is not in our opinion cause for complaint. It is part of the character of the rally and it would be wrong to eliminate it just because some people prefer smooth roads. Rough tracks are as much part of rallying as snow, mud or plain tarmac. Those who complain are usually doing so not for any great principle or conviction but due to no more than personal preference, and that renders the so-called complaint quite unjustifiable.

The heat, the dust, the rocks and the constant concern over a minute lost here and another there used to cause intense fatigue, and this was one of the events in which stamina was as important as skill. Even if you were not among the fastest, if your car held together and you did not succumb to the effects of tiredness, then you stood a good chance of finishing in the top ten.

It was on this event some years ago that the SCDA was formed, partly as a joke but partly to register its effect on competitors. The Sleeping Co-Drivers' Association stemmed from a discussion between co-drivers who found that they were sometimes nodding off, even when reading their notes, and it was quite common in those days for cars to stop in mountain hamlets so that their crews could douse their heads under the village tap!

Today, the stamina requirement has gone, but the heat and the dust remain as formidable opponents. Ventilate the car to cool the crew and you will immediately let in the dust which causes sore eyes and croaky speech. Many co-drivers have little voice left at all when they finish an Acropolis Rally. Why this is more pronounced in Greece than in, say, the Safari seems to defy explanation, but it is nevertheless the case.

The toughest part of the Acropolis used to be in that land-mass in the south-west of the country called the Peloponnisos, south of the Gulf of Corinth and reached by road over a bridge spanning that great cleft in the earth which forms the Corinth Canal. The stages there were rougher than most, and the road timing tightened up so that any little problem would inevitably produce a penalty. Service support had to be both fast and frequent, and to make it even more difficult, this whole section of the event used to be run at night.

The competitive part of the rally used to end there in the Peloponnisos, although the tedious drive back to Athens, through the most abominable of traffic congestions, often became needlessly hairy when competitors got held up by traffic jams and had to resort to driving on the wrong side of the road or on pavements, passing red lights and other dicy manoeuvres simply to avoid penalty on a section of the rally which really should not have been competitive at all.

Eventually the organisers removed the need for this boring but risky journey back to Athens by regrouping everyone at Poros, in the southern Peloponnisos, then bringing the whole cavalcade back to Athens by ferry boat.

It was a splendid idea, appreciated by everyone, but after 1985 it was discontinued when it was decided that the route should no longer go to the Peloponnisos. This year the rally returned there, but on the first day, after which the journey around the Gulf of Corinth was avoided by using a ferry boat to cross from Corinth itself to Itea, where the rally was then based for two nights.

The number of new stages this year meant that the works crews had to spend more time recceing and perfecting their notes than would otherwise be the case. On familiar stages, they invariably polish up the notes which they made the year before. One team indulged in a little trick to make sure that their drivers could practice at rally speeds without risk of meeting other traffic. They simply took enough men and vehicles along to block the stages completely, two at a time!

The use of helicopters to carry mechanics and spares has become a common feature of World Championship rallying, although some professional drivers now insist that a team helicopter should fly slightly ahead of them in order to call out hazard warnings over the radio. This seems to be taking things too far, although it must be said that a stray car and a motor cycle were encountered this year on special stages. The same happened last year in Corsica, and such failure to ensure that stages are not clinically sealed from all other traffic courts tragedy and is an unforgivable organisational sin.

Helicopter servicing began many years ago, we recall, when Fiat rented a Royal Protection aircraft, an Alouette III, during the Morocco Rally and used it very effectively, especially along the remote tracks of the southern desert. Since then, one helicopter per team, in addition to a high-flying radio relay aircraft, became normal. But nowadays, probably due to drivers' demands for aerial hazard-spotting, one per car is more likely, or even two! This year during the Acropolis Rally there were no less than thirteen team helicopters flying around, two each being used by Lancia, Mazda, Subaru, Nissan and Toyota and one each by Ford, Toyota Italy and Fina.

Following tradition, the start of the rally was in the road at the foot of the hill in Athens on which perches the Acropolis itself, but headquarters were at Lagonissi,

the hotel and bungalow complex on the coast some twenty miles south-east of the city. It was here that scrutiny took place on the Saturday, and to which cars returned to an overnight closed park after the opening "superspecial" stage on the Sunday. "Sub-special" would be a more appropriate name for some of these preliminary tests, for most are artificially created on large fields or waste ground and are certainly unpopular among competitors. The Acropolis opening stage was near the coast, further along than Lagonissi, and when it was over, the line of traffic heading back to Athens seemed endless.

The next day, the rally headed westward, penetrating just into the north-eastern corner of the Peloponnisos. After nine stages, the ferry took cars and crews across the gulf to Itea, near which the first night stop was spent at Eratini. On the Tuesday, a loop passed through twelve more stages (one of which was cancelled due to roadworks) before another night stop at Eratini. Wednesday was the last day, and this contained sixteen more stages before a long (100 miles) road journey back to the evening finish in Athens.

The line-up of professional entries was the best that any World Championship event has gathered for years, no less than seven works teams making the journey to Greece with the avowed intention of striving to win. Add to this the presence of three Ladas from the Soviet Union-Us Autoexport organisation and the result is a list which would gladden the hearts of rally organisers anywhere.

Lancia was making its first appearance under the directorship of new team manager Giorgio Pianta following Claudio Lombardi's departure to take over Ferrari. Pianta is no stranger to the side, of course, having been a test and development driver in the days of the Fulvia and the Stratos, and later very closely involved in the practical side of service planning and execution. His return drew the comment from some observers, "Now, Lancia will start getting really cunning again!" Lancia's line-up consisted of three Delta Integrales for Massimo Biasion/Tiziano Siviero, Juha Kankkunen/Juha Piironen and Didier Auriol/Bernard Occelli, the latter crew in a car entered by the Jolly Club and backed by Fina. Argentinian pair Jorge Recalde/Martin Christie drove a fourth car, whilst a private version was in the hands of Greek driver Giannis Vardinogiannis who, not surprisingly, uses the pseudonym "Jigger". The latter's practice sessions were somewhat crowded, for the son of a Greek shipping and oil magnate was accompanied by hefty bodyguards during most of his travels.

Another Delta Integrale was in the hands of Finnish girl Minna Sillankorva and her Italian co-driver Michela Marangoni, their object being to seek points for the Ladies' Cup of the World Rally Championship.

Ford brought three Sierra Cosworths for François Delecour/Anne-Chantal Pauwels, Malcolm Wilson/Nicky Grist and Alessandro Fiorio/Luigi Pirollo. Delecour, whose performance in Monte Carlo made everyone sit up and take notice, was tackling his first World Championship event on dirt roads. A fourth Sierra, built and serviced by Mike Little Preparations, was driven by Carlos Mennem, son of the President of Argentina.

That was the extent of the European professional attendance. Apart from Lada, the other five teams were all Japanese, though each of them was operating from a base in Europe.

Toyota brought three Celica GT-4s from Cologne, driven by Carlos Sainz/Luis Moya, Mikael Ericsson/Claes Billstam and Armin Schwarz/Arne Hertz. The latter driver has gained a somewhat undeserved reputation of late as a perpetual non-finisher, some critics claiming that he exceeds his limits and invariably crashes. It's true that he has gone off the road several times, but he has youth on his side and is an extremely fine driver; certainly the best that Germany has produced since



Despite beginning to assert his authority on the event in his Toyota Celica GT-4, Carlos Sainz had to be content with second place after a puncture delayed him a mile from the end of the "Tarzan" stage.

Walter Röhrl, and in our opinion Ove Andersson's decision to bring him into the team is entirely justified.

Toyota Italy sent two Group N Celica GT-4s for Alessandro Fassina/Massimo Chiapponi and Mario Panontin/Flavio Zannela, this outfit operating quite separately from Toyota Team Europe, even with its own helicopter.

Subaru sent one Legacy from Prodrive in England, driven by Markku Alén/Ilkka Kivimäki, but it was certainly no shoestring attendance, and the fact that they had just one car did not lessen the effort being made, nor the resources being utilised.

Another team with just one car in the list was Mazda, a four-wheel drive 323 sent from Brussels for Hannu Mikkola/Johnny Johansson. However, there were several other Mazdas in the event, notably the Group N versions being driven by experienced and well-known Greek drivers Pavlos Moschoutis and Tasos Gemenis. Another Group N Mazda 323, brought from Italy, was driven by Belgian exponent Gregoire de Mevius.

At the start of this year there was a reshuffle among the management of Nissan's motorsport branches in Japan, but the rally team has followed the Japanese trend and set up a base in Europe. Indeed, it operates from the same British shed as the sports car outfit. The team's first appearance with its new Sunny GTI-R, a car brimful of advanced technological features, was at the end of March on the Safari Rally. However, the cars were prepared in Japan, not Great Britain. Japan-built cars were again taken to the Acropolis Rally, for Stig Blomqvist/Benny Mellander and David Llewelin/Peter Diekmann. We understand that it will not be until the RAC Rally in November that cars actually built and prepared in Milton Keynes will make their appearance.

A third car, a Group N version, was enterered by Greek importer N J Theoharakis S A for local drivers Stratis Hadgipanagiotis/Tonia Pavli. This driver is another who uses a pseudonym, "Stratissino".

Mitsubishi, represented by the UK-based Ralliart team, entered two of their four-wheel-steering Galant VR-4s for Finns Timo Salonen/Voitto Silander and Swedes Kenneth Eriksson/Staffan Parmander.

The Russian team, as usual from the Autoexport organisation, consisted of three Lada Samaras for Sergei Voukovitch/Andris Zvingevits, Sergei Alyasov/Alexandr Levitan and Alexandr Artemenko/Viktor Timkovski. The latter crew is the pair who drove so well in last year's Rothmans Cyprus Rally and finished third overall.

Familiar pseudonyms further down the field were those of "Iaveris" who once drove rear-wheel drive Escorts very spiritedly indeed, now driving an Opel Manta, and "Leonidas", the Greek Renault importer, who was driving a Cleo 1.6-S.

There was not a single British private entrant, and even the usual Austrian visitors were not there, not even Acropolis regular Rudolf Stohl. There weren't any Kenyans either, although Shekhar and Yvonne Mehta came along to drive a Lancia Delta Integrale as a course car, and this was Mehta's first



Markku Alén's chance of giving the Subaru team a good result evaporated when he rolled the car near the end.

taste of "competition" driving since his bad accident during the Paris-Dakar Rally a few years ago.

The opening superspecial stage produced no dramas, although some drivers complained that the organisers should not have watered the track. The intention was to keep down dust, but some front runners felt that they had conditions which were slippery, whereas later cars would be on a dry track. Perhaps the most interesting performance of the day was that of Spanish privateer from the Canary Isles, Capdevilla. Having lost drive to the front wheels of his Sierra Cosworth, he decided to complete the stage in reverse! Delecour broke a rear damper, whilst Mikkola collected a puncture and finished the stage on the rim.

The best time was put up jointly by Toyota men Sainz and Schwarz, but when just ten seconds separated the leading fifteen after this 2.7-mile opener, positions were hardly more than academic.

The next morning, there was a journey of some forty miles to the first stage, with seventy-eight minutes allowed. It doesn't sound very tight, but with Athens traffic to negotiate on the way it certainly turned out that way. Indeed, in order to get there without losing time, most drivers had to indulge in queue-jumping and driving on the wrong side of the road. Tight timing as a means of limiting service opportunities between special stages is a perfectly legitimate ploy, but it has no place in a section traversing densely crowded city streets, and more time should have been allowed for this journey.

One who will certainly agree with us is Kenneth Eriksson. Like the others, he used all the road, but was unfortunate enough to be involved in a collision with another car. Obeying the law, he stayed at the scene until an official arrived and told him to continue, but he had been delayed a good ten minutes and collected a seven minute penalty when he arrived at the first stage.

There had been considerable rain in the weeks before the event, but when the rally started it was dry and sunny, albeit with some wind which suggested that showers were not unlikely. Tyres of all types were therefore held at the ready, especially those with toughened sidewalls to cope with the puncture-provoking rocks of the Greek mountain roads.

Eriksson's misfortune obviously tightened the bit between his teeth, for during the day he set a string of best times in his Mitsubishi, and were it not for his seven minute penalty he would have led after the first day by something like three-quarters of a minute, despite breaking a shock-absorber. As it was, he was down in fourteenth place.

Recalde retired on the first stage when a mysterious electrical failure stopped his engine, whilst Delecour noticed that his engine was misfiring and sometimes cutting out at high rpm. This worsened later, and a change of ignition pack did not seem to improve matters, but eventually it was cured and Ford's French driver was able to use full power again, though not before losing valuable time.

Sainz, running first on the road, had the misfortune to encounter a motorcycle on one stage and a car on the next, incidents which made him understandably angry, especially when he was 44 seconds down on the leader at the end of the first day. That's not a great deal by Acropolis standards, but it would have been less had it not been for the stray vehicles.

Wilson spun, Biasion complained of poor brakes, whilst Alén stopped several times on one stage due to an electrical problem. Fiorio's front differential stopped working and he did the last stage of the day with just rear-wheel-drive. The roadside replacement

of the diff later cost him two minutes on the road.

The leaders were closely bunched when they got to Corinth, Auriol leading by fourteen seconds from team-mate Kankkunen. Alén was next, followed by Sainz, Biasion, Ericsson and Schwarz, the latter having to drive on to the ferry boat with one rear wheel minus its tyre.

Early on the Tuesday, Delecour dropped two and a half minutes on the road having his front differential replaced, whilst Mikkola needed some clutch attention. After just two stages, Kankkunen took over the lead from his team-mate Auriol.

Transmission problems on the rough roads seemed to be the bane of the Fords, for Wilson also had to have a broken front differential replaced. Alén cracked his rear differential against a rock and did the whole of the next stage before the unit could be replaced. There had been a considerable oil leak, and Alén was keeping his fingers crossed that there would be no sudden seizure. Schwarz had his centre differential changed.

Eriksson's engine began overheating after its radiator fan failed, whilst Auriol broke a rear driveshaft. Ericsson, too, had a driveshaft break, and dropped three road minutes having it replaced.

Ford's transmission troubles all came to a head on this second real day of the rally. First Delecour went out when his front drive failed. Then Wilson had to stop when he lost a wheel following failure of a front driveshaft close to the hub. Finally, Fiorio encountered the same problem but, with the wheel still in place but flapping dangerously, he continued to the end of the stage with co-driver Pirollo sitting in the boot to lessen the weight on the front of the car. But the wheel eventually came off, and when he got to his service after the stage the team decided that he could not continue.

Another retirement on the Tuesday was that of Salonen, who stopped when his Mitsubishi's steering failed. He had been complaining about his steering for some time, but eventually the mechanics got it right and Salonen said he was satisfied. Obviously, something was still wrong.

At the end of the day it was Sainz who emerged the leader, just twenty-one seconds ahead of Kankkunen. Two more seconds behind was Auriol, followed by Biasion, Schwarz, Eriksson and Alén, in that order. Finnish girl Minna Sillankorva was taking no chances and was fifteenth overall, in a good position to score championship points, which are only awarded to those who finish inside the first twenty.

Another to go was Blomqvist, whose engine was running on just three cylinders and sounded terrible. Mechanics removed the head, found that a valve stem had broken and that was that. Team-mate Llewelin was still going, although the car was taking a pounding and came out of one stage with its sumpguard dragging on the ground.

Mikkola emerged from one stage with his left rear brake smoking, whilst Schwarz needed the attention of an extinguisher-wielding marshal when he arrived at the end of a stage with the right rear of the car smouldering, caused by friction after driveshaft breakage.



Transmission problems on the rough roads seemed to be the bane of the Fords, all three drivers retiring with related problems.

Early in the day, the water cooling to Eriksson's front struts failed. Fortunately, the first two stages were relatively smooth and no serious hindrance was caused.

Auriol lost all chances of recovery when he collected a puncture on the twenty-mile "Tarzan" stage and lost the tyre. And it was on this stage that Kankkunen took the lead from Sainz when the latter had a puncture about a mile from the end.

Alén had been pushing hard to give his new team a good result, but he came to a dramatic stop just four stages from the end when his Subaru rolled. He and Kivimäki were unhurt, but the car was too badly damaged to continue, so down came a helicopter to whisk them back to their hotel.

That was about the size of it. As usual, the retirement rate had been high, among both professionals and amateurs, the result of a combination of rough roads and tight timing. But that is part of the character of the Acropolis, and we would be the last to suggest changing it, except to lessen the urgency in urban areas.

Sainz keeps his lead of the World Championship, but is now only seventeen points ahead of Kankkunen, whilst among the makes Toyota's lead over Lancia is now down to just three points. Sadly, Finnish driver Minna Sillankorva retired on the last day and scored no points in her chase for the world ladies' title.

GP

Acropolis Rally (Greece) – 2 - 5 June, 1991

Results

1.	Juha Kankkunen (SF) / Juha Piironen (SF)	Lancia Delta Integrale, Gp A	7h 20m 05s.
2.	Carlos Sainz (E) / Luis Moya (E)	Toyota Celica GT-4, Gp A	7h 21m 06s.
3.	Massimo Biasion (I) / Tiziano Siviero (I)	Lancia Delta Integrale, Gp A	7h 23m 35s.
4.	Didier Auriol (F) / Bernard Occelli (F)	Lancia Delta Integrale, Gp A	7h 24m 47s.
5.	Armin Schwarz (D) / Arne Hertz (S)	Toyota Celica GT-4, Gp A	7h 25m 40s.
6.	Mikael Ericsson (S) / Claes Billstam (S)	Toyota Celica GT-4, Gp A	7h 30m 00s.
7.	Kenneth Eriksson (S) / Staffan Parmander (S)	Mitsubishi Galant VR-4, Gp A	7h 36m 05s.
8.	Hannu Mikkola (SF) / Johnny Johansson (SF)	Mazda 323 4wd, Gp A	7h 36m 54s.
9.	David Llewelin (GB) / Peter Diekmann (D)	Nissan Sunny GT-R, Gp A	7h 50m 45s.
10.	Giannis Vardinogiannis (GR) / Kostas Stefanis (GR)	Lancia Delta Integrale, Gp A	8h 15m 48s.
11.	Stratis Hadgipanagiotis (GR) / Tonia Pavli (GR)	Nissan Sunny GTI-R, Gp N	8h 33m 26s.

94 starters; 37 finishers.

World Championship Situation

Drivers (After 6 of 14 rounds)

Carlos Sainz (E)	75 pts.	Mikael Ericsson (S)	21 pts.
Juha Kankkunen (SF)	58 pts.	Markku Alén (SF)	20 pts.
Didier Auriol (F)	42 pts.	Armin Schwarz (D)	18 pts.
Massimo Biasion (I)	39 pts.	Mats Jonsson (S)	15 pts.
Kenneth Eriksson (S)	24 pts.	41 drivers have scored points	

Makes (After 5 of 10 rounds)

Toyota	57 pts.	Nissan	10 pts.
Lancia	54 pts.	Mitsubishi	8 pts.
Subaru	18 pts.	Mazda	6 pts.
Ford	14 pts.	Daihatsu	2 pts.



Mazda have unveiled their pretty sports coupé which will go on sale in August.

Chalk and Cheese

"Spa-Pita" and "StaGility" — two words that you will not have come across before in any language, and hopefully will not have to endure reading again. But if one was to believe the information blurb that accompanied a preview of Mazda's sports coupé, then these are going to be the "buzz" words. What the hell do they mean? Well, the former word is a "canny (sic) way the chassis and development engineers describe the MX-3's superb road manner" and are "phonetic expressions of the driver's action and the car's responsive behaviour." "Spa", so they go on, "is the sound of a knife cutting through an object," and the "phonetic Pita" is the way "it immediately stabilizes itself." The other word? That's easy, it's the bastardization of Agility and Stability.

But enough of this drivel! The car itself actually is rather a pleasant beast, and is somewhat a cross between a Honda Civic CRX and a Toyota Celica in looks, but being just 4220mm long, 1695mm wide and 1310mm high is nearer in dimensions to the Volkswagen Corrado. Although comparisons will inevitably be drawn with its own stablemate, the MX-5 convertible, the two cars are two distinct models, there being no question of a carryover from one to the other (despite the confusing order of appearance!)

Whilst lacking the cheeky appeal of the CRX, it is nevertheless quite a pretty car, although the rear end treatment, dominated by a virtually horizontal rear screen, is less effective. What Mazda have done, though, is to install rear seats which even have sufficient leg room for the average sized adult, the trouble is that the headroom is limited, a six-footer needing to bend his head to one side to sit in the seat. But since this is aimed at the youth market, by which Mazda mean everybody except the family man aged between 35 and 55 who have a growing family, a high mortgage and little money left over for indulgencies, rear seats, while useful to have as a marketing tool, are not really of prime importance. The rest of the interior is adequate, but lacks the feel of quality that the car deserves.

Since this a sporting coupé with a hatchback, luggage access is via lifting the large glass pain on gas struts. Luggage space is good for the type of car but the price of the shape and structural integrity is the high lip which the bags have to be hoisted over.

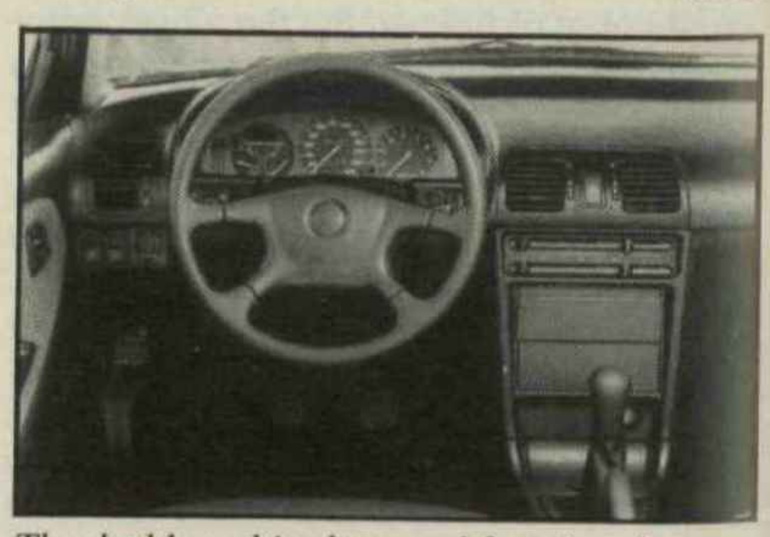
There is a choice of two engines, the 16 valve, single overhead cam 1598cc unit and a newly developed 24 valve, 1845cc V6 which Mazda proudly claim is the smallest V6 in volume production. Despite the 247cc difference in engine capacity, the two versions of the MX-3 are as different to each other as chalk and cheese. Whereas the V6, clad with low profile 205/55R15 87V Yokohamas, is responsive and lively and rather fun to drive, the 1.6, on 185/65R14 85H Dunlops, is lethargic and dull and, because the car does not live up to looks, a bit of a strain.

Power steering is standard on both models, but the steering ratios are different, the V6 having a 15:1 steering ratio requiring 2.7 turns of the steering wheel from lock to lock compared to the 17:1 ratio and 3.1 turns of the wheel of the 1.6.

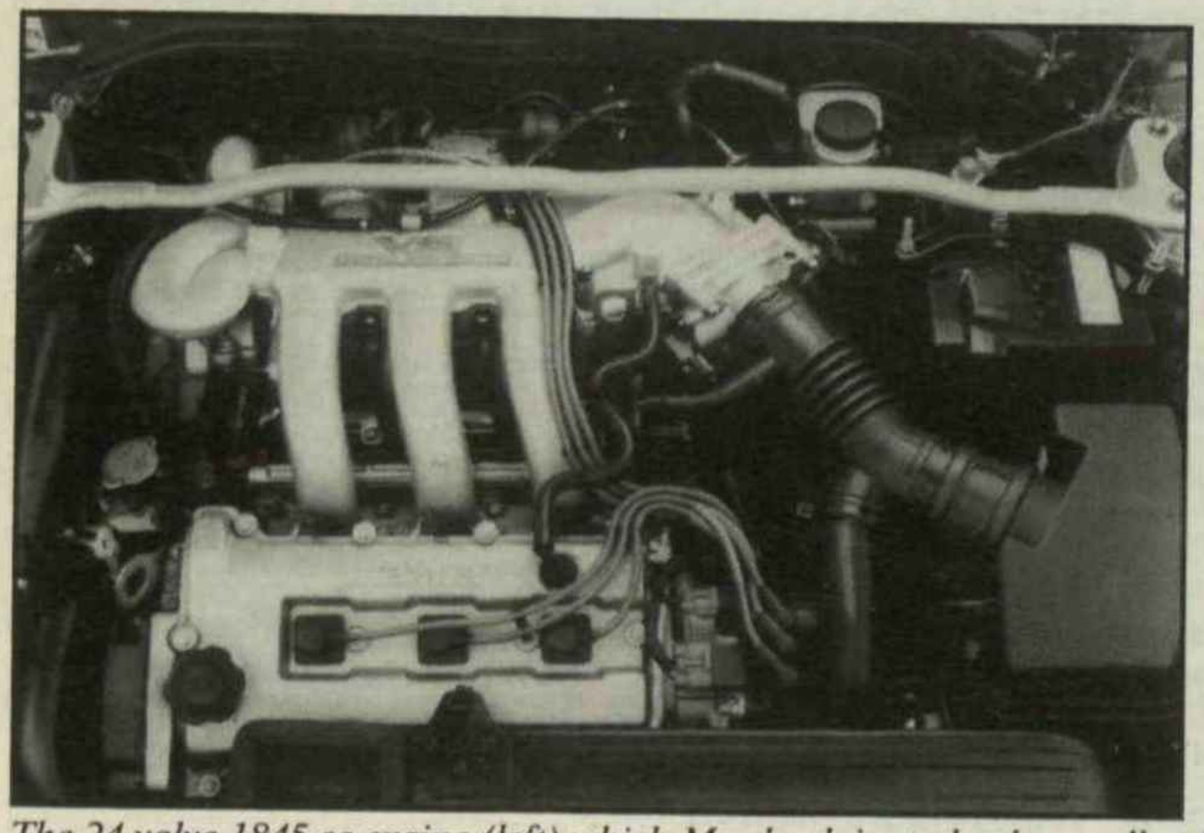
ABS and discs all round on the V6 and front discs only on the other model are efficient and good, the ABS an option on the 16 valve.

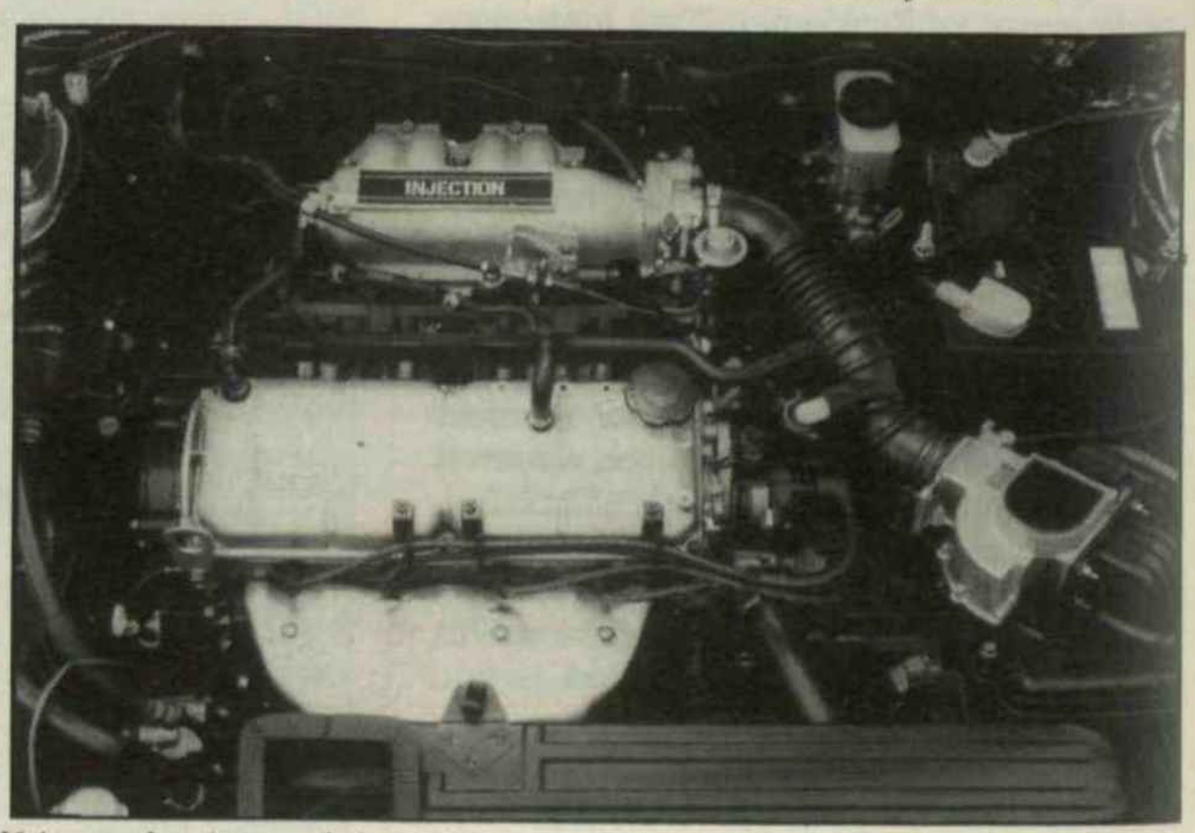
The bad news is that this engine is scheduled to take up 60% of total MX-3 production, but the good news is that in their wisdom Mazda Cars UK are ensuring that of the 800 examples due to come to Britain from August until the end of the year, approximately 650 will be the V6 version, with the same 80% ratio kept for the 2500 due to arrive in 1992.

The price of both models has yet to be announced, but a ballpark figure of £15,000 for the 1.6-litre and £17,500 for the V6 should be expected. WPK



The dashboard is clean and functional.





The 24 valve 1845 cc engine (left) which Mazda claim to be the smallest V6 in production and the 1598 cc single overhead cam engine (right).



The Vauxhall Carlton GSi 3000 24v is a mass-produced four-seater that is capable of going of nearly 150 mph.

The Affordable 24-valve

The November 1989 debut of the (deep breath) Vauxhall Carlton GSi 3000 24v was unmarked by a formal British launch, or the hypocritical welter of 170 mph words that accompanied the twin turbo Lotus Carlton. Yet the GSi flagship of the Carlton mass production line is a more significant sports saloon than the Lotus variant. When this 24v arrived in Britain it established a sub-category for affordable six-cylinder performance.

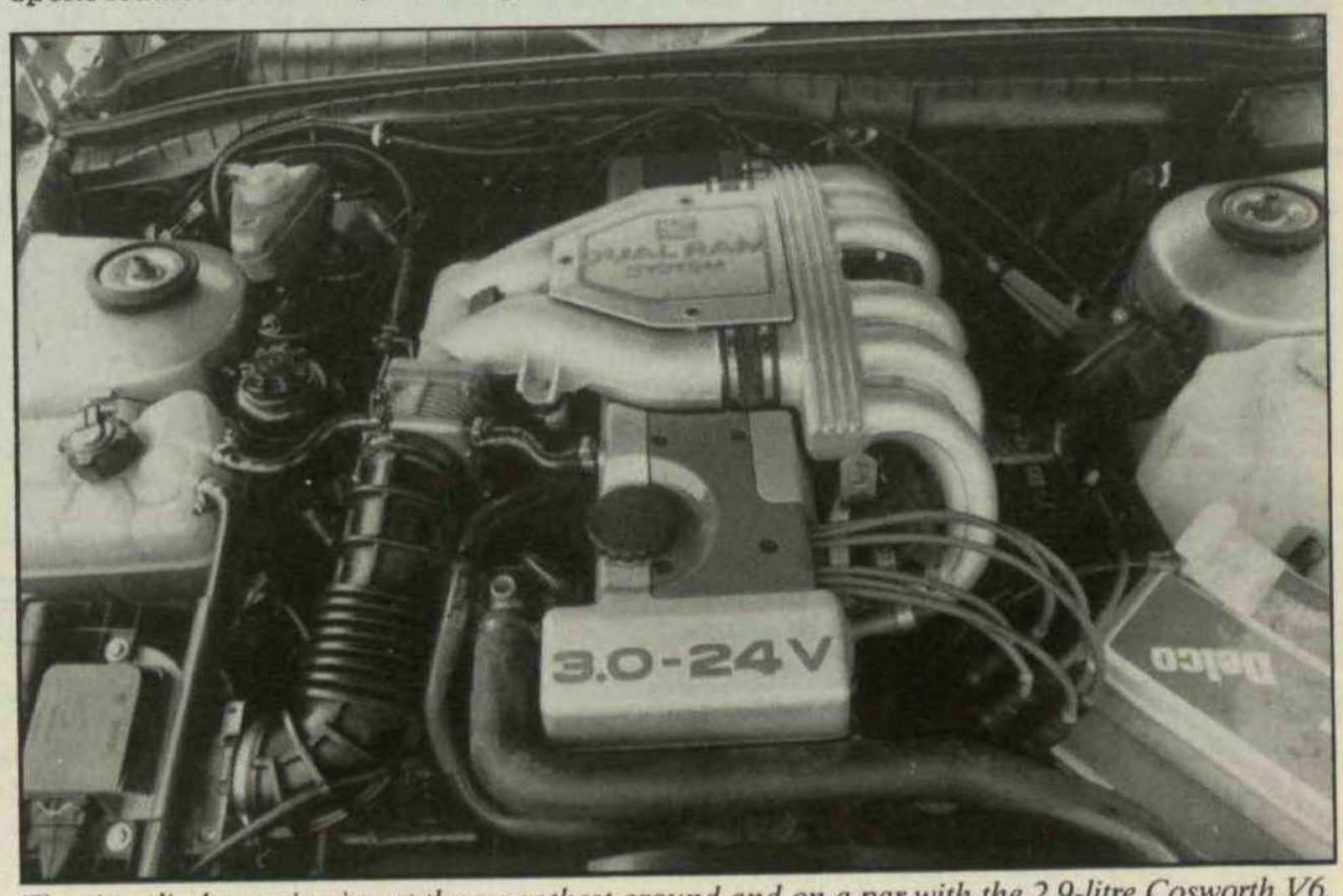
Some 2500 24v Carltons have been sold in our country since then. Only now are the opposition beginning to realise what a profitable, and enjoyable, niche GM have prised open. At first comparisons were drawn with the BMW 535i Sport, *Autocar & Motor* flagging the results of a confrontation test, "what's better than a BMW 535i and costs £7000 less?" Today the £26,975 tag upon the Vauxhall includes a standard catalytic convertor and much sundry showroom equipment (electric operation of sunroof, controversial LCD display dashboard, electronic ABS braking and so on) which leaves it £5675 less than said BMW. Those of you with technical appreciation will know that a 535i Sport is powered by one of Munich's traditional 12-valve 3.5 litres, so that a true technical equivalent is the £45,750 M5. The M5 does have a 24v engine, albeit one of considerably more power (over 300 bhp) than the general consensus of 200 to 220 bhp allows UK motorists.

The sheer cost and rarity of the BMW M5 left Vauxhall the affordable market for 24v "executive express" from late 1989 to the early Summer of 1990, although Jaguar could be said to be opposition with the 3.6 and latterly 4.0 24v sixes assessed by MOTOR SPORT last winter. Now the 24v six-cylinder saloon market has been further enlarged to the point of offering a choice of Cosworth-concocted Ford Scorpio (automatic only, £27,383), Peugeot SVE 605 24v (£27,250, front-drive only), and the same V6 engine is in the Citroën XM (£27,495).

Having driven all the cars nominated, we thought it time to look at the Vauxhall again and see if anyone had come up with a better recipe at the price? First impressions of the silver test car were not overly favourable. It is a brash vehicle, laden with aerodynamic appendages and a two-deck badge that proclaims the company's lack of confidence in its identity by shouting "CARLTON GSi 3000" in capital letters, supported by a chrome and red "24v" plaque. The same lack of confidence is seen from the beautifully shaped four-spoke leather rim wheel, which repeats the model identity message.

Then you blink the illuminated dashboard display to life, via the ignition key. It goes through a yellow and black numeric sequence that includes flashing up a 288 mph reading for the digital speedometer. "Flashy" is the immediate reaction, particularly when one acquaintance asked cheekily, "where's the slot for the coin, so the games machine can begin?"

Less garish and more useful were the six computerised readouts provided to cover items such as fuel consumption and average speed. The computer was up to 2 mpg optimistic, but this substantial (15.4 ft long) Vauxhall managed several journeys with averages beyond 60 mph and 21 mpg in



The six-cylinder engine is not the smoothest around and on a par with the 2.9-litre Cosworth V6.



The interior is 85 per cent BMW quality, but it is not so dull.

sporting comfort. Contributing to the sense of security are sports front seats and a restful selection of grey fabrics and black plastics. GM did allow themselves a single red and blue stripe upon the seats and trim panels. The overall effect is of 85 per cent BMW quality, without the tomb-like sobriety.

We were impressed by the deadlock door and boot locks, part of a Vauxhall drive to meet the scandalously high automotive crime; the contrast with our staff Sierra Cosworth was painfully marked. Some of the GM interior touches were not so deft, quality apparently presented where the customer notices. Elsewhere the major effort is lacking. Items like cabin door handles with variable plastic finishes and occasional blemishes, on to less inspired fit and finish that is visible to the questing eye.

The motor hums to life in true six cylinder, Bosch management style. We think GM did not receive quite the same flawless electronic standards as BMW or Porsche, or the company budget did not allow the necessary man hours to do the calibration 100 per cent correctly. There were occasional surges in the drive line and the motor did not always pick up with the precision expected in 1991.

Performance figures were on a par with what was expected, but the feeling that "carburation" versus electronic mapping had not been conscientiously completed. Perhaps they would be better off with Lotus engineering and Delco hardware?

The sound of this six-cylinder was traditionally suave until 3000 rpm, then it became a little more lively to 4000 rpm. There is a definite hiccup at this point as the "dual ram" (a single butterfly valve fitted between two plenum chambers) acts to optimise intake manifold flow patterns beyond 4000 rpm. By 3600 rpm it had spoken of maximum torque achieved and an urgent need to conquer the 6500 rpm electronic limiter.

It is far from the smoothest six we have driven, but no disgrace either, allowing the driver satisfying deployment of its horsepower. In commercial terms we would describe it as closest to the Cosworth version of the Ford 2.9-litre V6, but that has been saddled with an automatic in displaying the worth of its 195 bhp at 5750 rpm and 202 lb ft of torque by 4500 rpm. This Carlton is a mass-produced four-

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seater that is veering toward genuine 150 mph capability. By the time you amass 145 mph around Millbrook bowl, it is fair to say that 2-3 ultimate mph are being lost over a lap, so the silver Vauxhall did come awfully close to the 150 mph barrier. That it does so on an official 16 bhp less than the 4x4 Sierra RS Cosworth tells us that rear-wheel drive and conscientious application of aerodynamics (whatever our aesthetic reservations) are still potent forces in the provision of performance saloons.

Of more relevance to potential owner drivers will be the immense motorway cruising capabilities. This Carlton in German Omega guise is able to sustain 100 to 125 mph all day (in round figures, 4000 to 5000 rpm in fifth), when radio listening and normal conversations can continue with commendably low escalation in wind or tyre noise. At Britain's 70 mph limit and just 2900 rpm in fifth, the Carlton ambles along quietly, supping approximately 31 mpg.

The acceleration is not quite in the RS Ford bracket, but it is outstanding for a current 3-litre saloon. Vauxhall 24v drivers are unlikely to feel they have been short changed. The only obstruction to straightline pleasure is the vague gearbox gate – the light, elongated, change occasionally drifting from a third gear slot to fifth.

Initially the handling seems a bit sloppy with the contradiction that the low-speed ride is obviously over-damped, but tackle a nasty minor road assortment of adverse cambers and bumps fit to throw the old front-drive Escort into spasms and the 24v Carlton sweeps imperiously through, the occupants unruffled and the driver enjoying a constant feedback of information from the wheel rim and supportive seats. As with many cars developed by German engineers, the harder you drive, the better the ride.



The brash lettering betrays Vauxhall's lack of confidence in the model.

Also well above average is the grip provided by Uniroyal 205 section rubber and rear traction during a standing start. The Carlton does not quite cut it versus the original Mercedes-Benz multi-link system, or the current BMW independent rear end, but GM have created a distinctly worthwhile argument for the merits of rear-drive in a sports saloon.

Summary

We feel that nobody does a better job of the sporting six-cylinder saloon at this cost than Vauxhall, certainly not amongst the mass production ranks. Its combination of rear-drive handling finesse, excellent pace and routine service durability/economy is not matched, as yet.

If cost is no object, we believe the BMW M5 is one of the finest sports saloons ever made: charismatic, fearfully fast and hand assembled by a labour force that cares to a degree that cannot be duplicated in the sub £30,000 classes.

Ford could compete with Vauxhall in two ways: promote the virtues of a £25,500 Jaguar 4.0 XJ6 saloon with a £2000 sports suspension pack, or make the recently announced Cosworth Scorpio a more clearly defined sports saloon, including manual transmission and a clear identity. Or both.

Meanwhile, Vauxhall show that their recent public image as providers of better products at competitive cost is based on genuinely impressive motor cars. This Carlton is far from perfect, but is less flawed where it matters than its opponents. JW

Key Features: Vauxhall 3.0i Carlton GSi-24v

Key features: Tax-inclusive price: £26,975.
Body: Steel, 4-door saloon, with aerodynamic body equipment, front, rear and sides, plus protective centre line moulding. **Drag factor:** 0.30 cd. **Engine:** Inline 6-cyl, 2969cc (95 x 69.8mm). DOHC,24-valve alloy cylinder head, iron cylinder block; 10:1 cr. Bosch M1. 5 electronic fuel injection and ignition management + Lambda probe for standard catalyst. **Power outputs:** 204 bhp @ 6000 rpm; 199 lb ft @ 4600 rpm. **Transmission:** Longitudinal engine drives rear wheels via single plate clutch and two mass flywheel: 5-speed gearbox. **Ratios:** First, 3.807; Second, 2.106; Third, 1.335; Fourth, 1:00; Fifth, 0.814/24.4 mph per 1000 rpm. Final drive, 3.70. **Running gear:** Suspension Sport front MacPherson gas pressurised strut settings with anti-roll bar. Independent ACT multi-link rear suspension, two semi-trailing arms and one cross link connecting hub and suspension subframe via ball joint and damping bush. Gas telescopic dampers,double conical mini block progressive rate coil springs and separate anti-roll bar. **Steering:** Recirculating ball, 15:1 ratio, 3.7 turns lock-to-lock. **Brakes:** Ventilated 10.2 inch front discs; solid 10.6 inch disc rears; electronic ABS is standard. Wheels & tyres: Alloy 7 x 15 inch and 205/65 ZR Uniroyal 340/65 Rallye.

PERFORMANCE HIGHLIGHTS
Vauxhall Carlton 3.0 GSi-24v

Millbrook Proving Ground test site, using Correvit electronic measuring gear.

Acceleration
0-30 mph = 2.8 seconds
0-60 mph = 7.4 seconds
0-100 mph = 29.0 seconds
Standing 0. 25 mile/400 metres: 15.4s @ 89 mph
Flexibility 50 — 70 mph in fifth gear: 10.5 seconds
Maximum speed: 145.1 mph; Test distance: 450 miles. Overall test fuel consumption: 21.4 mpg. Government mpg figures: Urban, 19.8 mpg; 75 mph, 30.7 mpg; 56 mph 37.2 mpg.

Fresh Air Turbo



Only a limited number of the 944 Turbo Cabriolet are being made available in the UK.

Porsche Cars Great Britain Ltd Managing Director Peter Bulbeck and his slightly reduced team of Reading, Berkshire, employees are in no mood to take more hostile press comment over UK sales, particularly those of the 944, which ceased production at Audi of Neckarsulm recently. The resurrection at Zuffenhausen is not scheduled until "early 1992". The Reading Porsche ("Remember.... Porsche is a two syllable word", nags their press briefing) contention on 944 sales is, "we had to provide sufficient production to tide ourselves and our dealers through a very long production pause. From current information, with 944 sales so far this year at 450 units we have probably got this about right, or too few if Mr Lamont is right and the third quarter sees an upturn", says Mr Bulbeck wryly. "In yearly terms the total sale of Porsches to Britain this year is likely to be 2271, rather above our target of 2000 units for 1991", continues the British Porsche director.

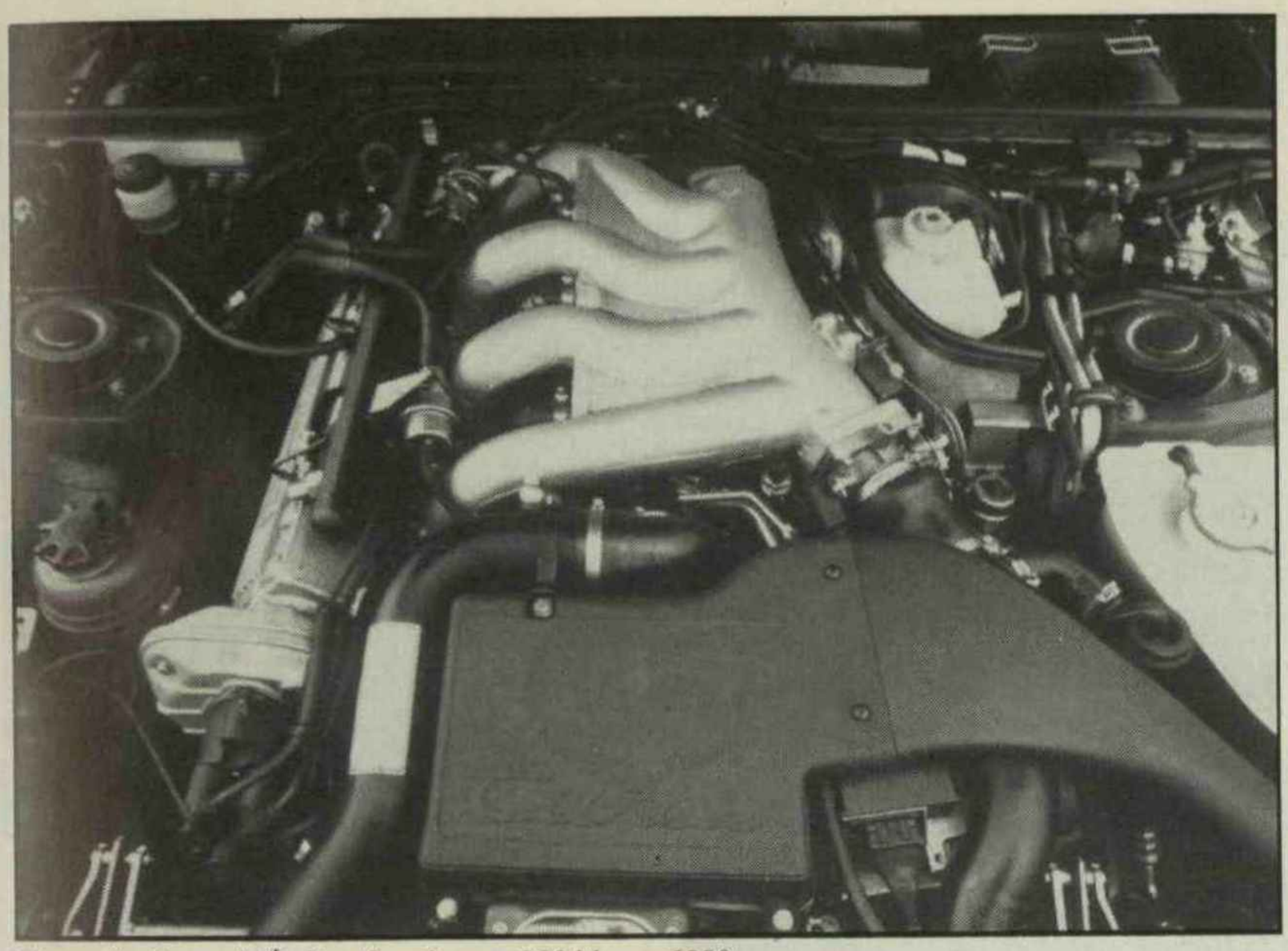
A look at the SMM&T statistics records that 2801 Porsche sales were achieved in 1990 Britain, some 20 per cent up on the forecast for 1991. That does contrast with "Porsche sales are over 50 per cent down" gleefully reported in a May edition of the *Daily Mail*, and a source of considerable dissatisfaction, chez Porsche GB.

Over 860 miles in a frequently sunny May week with the limited edition (100 are in Britain) 944 Turbo Cabriolet, we uncovered a 944 that may well set the customers queuing once more. True, Britain is gripped by one of the worst recessions the post-war generation has seen (Porsche ownership ages average 39), so none but the dreamers would expect anything other than an overall sales loss, especially as when Porsche used to sell over 3000 cars a year in our country – "over 2000 of them were £20,000" in Peter Bulbeck's words.

That the popular press crows about Porsche distress is also unsurprising, given the Yuppie era, which tainted Porsche, BMW and Volkswagen (for Golf GTI) pretty evenly, thus arousing much jealousy amongst those who miss no opportunity to denigrate exceptionally enjoyable and effective cars for social rather than rational reasons.

Peter Bulbeck's explanation of stock levels was timely, but we are not totally convinced. We took the car back to Reading and were surrounded by what seemed to be the other 99 turbocharged Cabriolets and plenty of general stock (including more 911s than I have seen since on a factory visit). I was ready to ask how long it would be before the discount Porsche became a public reality rather than a back door deal. In fact our test car cost increased by virtually £1000 after the VAT increase to 17.5 per cent, bringing the price of 250 horsepower fresh air motoring to £46,994. For that considerable sum (though compare it to a Jaguar V12 convertible, now priced at £50,600, and the 911 cabriolet from £54,268) the inline four-cylinder Porsche provides deep driver satisfaction.

Statistically the sub-6-second 0-60 mph abilities were accompanied by 148.5 mph with the hood up around Millbrook bowl, a maximum so far short of the 162 mph factory claim as to worry us severely, for Porsche is always scrupulously honest in its performance claims. Then we noted that other independently timed 944 Coupé turbos of 250 horsepower specification have



The turbocharged 2½-litre four boasts 250 bhp at 6000rpm.

recorded maximums in the 152 mph area, and another monthly magazine realised 151.3 mph from "our" demonstrator.

Just how much the car was enjoyed at exhilarating speeds with the hood down can be surmised from an overall 17.7 mpg of cheaper unleaded; the test week featured three circuit visits (only one for formal testing) so that only once did we approach the official Urban return of 21.2 mpg.

The UK Range

There are now three primary 944 models on offer in Britain. They begin with the normally aspirated 3-litre S2 coupé of 211 bhp. Much underrated, this 146 mph 2+2 has fine handling using many features of the 250 bhp 944 Turbo, but the S2 costs from £36,458 rather than £43,648. At £41,794 there is an S2 Cabriolet which shares many of the features mentioned here, bar the turbo-charged powerplant and a consequent 39 bhp.

Unless we have a 911 turbo cabriolet listed in Britain once more, the turbocharged 944 is one of the quickest sources of open-air motoring available in the UK. It is also comparatively rare at the 100-off limited edition figure and is also well equipped for our market.

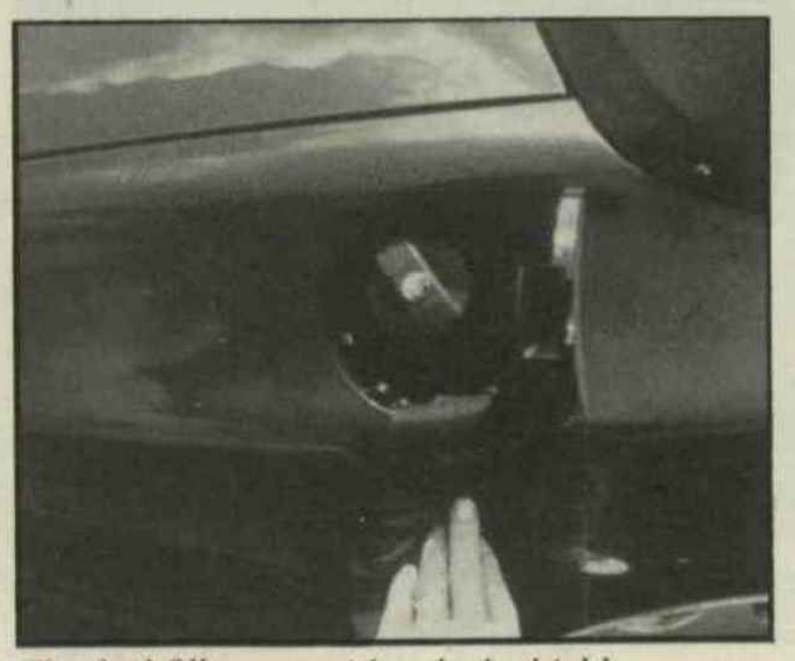
Standard 944 Turbo Cabriolet features include anti-theft alarm (prickly enough to be activated by practice day circuit traffic at Castle Combe), Blaupunkt Symphony stereo radio and cassette player, and air conditioning. Cooled air is far from a nonsense when the hood is raised. There is also electrical operation for the majority of the extended hood opening and closing routine.

Technical Analysis

Dimensionally and technically the 944 remains based upon the front engine, rear transaxle layout that emerged from the 924 base a decade ago. This has been progressively developed to accompany the constant escalations in power that the turbo era wrought. A 944T has 87 bhp more than the original 163 bhp.

So far as the body is concerned, the presence of the hood is accompanied by a 60mm/2.36 inch decrease in windscreen height. It also features rear seats that fold forward to allow access to the boot for objects such as ski storage. Complete with all the electrical motors for the hood and the standard equipment listed, weight has increased marginally to 1400 kg, 10 kg more than the normally aspirated 944 Cabriolet but it is rated the same kerb weight as a 944 Turbo Coupé. Although the double skinned hood saves lbs over sheet steel and glass, the Cabriolet model is extensively stiffened so that "effectively two floorpans are welded together", says Porsche publicity. All recent 944s were built of galvanised steels and warranted for 10 years, and the Turbo Cabriolet also carries warranties against mechanical failures over two years, plus three years protection for the 4-layer paint application.

Mechanically Porsche stress the link back to the Turbo Cup contenders as providing the unchanged 250 bhp engine specification and the strengthened 5-speed transaxle with external oil cooler, plus a standard limited slip differential with a discernibly sporting setting. The spring rates (torsion bar rear) are actually not quite so severe as in the days of the original 250 bhp 944 SE turbo, but the independent system by ubiquitous MacPherson struts and trailing arms is firmly restrained by fore and aft roll bars and accurately located by muscular aluminium arms. Aluminium, albeit specifically cast aluminium, is also utilised to create the 7.5 inch breadth front wheels and 9 inch rears that supported Pirelli P700Z covers on the test car.



The fuel filler cap with splash shield.

The braking system is very special in action, but routine to Porsche. They describe it simply as "the 928 series 4 ABS braking system with its larger, four piston, fixed caliper disc brakes. More than 11 inches in diameter, front and rear units are vented and are said to be capable of returning the Turbo Cabriolet from 62.5 mph to rest in three seconds. That is about half the time that the large turbocharger version of the single camshaft 2.5-litre (two valve per cylinder, rather than the DOHC quad valves of the 3.0 S2) takes to accelerate to said 62.5 mph/100 km/h barrier.

Maximum torque amounts to nearly 260 lb ft, but the K-26 turbocharger makes you wait until 4000 rpm for the peak; harder drivers will want 4000 to 4500 rpm indicated before the responses are those expected of 250 bhp.

Cabin

The 944 cockpit has progressed dramatically over its 924 origins and now features clear red, white and black instrumentation in four primary dials, plus a 4-spoke, leather rim, steering wheel that no longer seeks to loll on your thighs, but still lacks an adjuster. The controls are more scattered than one would attribute to Teutonic minds, leaving the hazard warning flashers over toward the glove box. I misunderstood the electrical mirror adjustment symbol long enough to cause annoyance.

In fact the Cabriolet 944 is one of those cars where even the experienced driver has to resort frequently to the handbook for guidance. Initially I had the advantage of Claire Knee, Press and PR Assistant, showing me where the hood unlocking keys were (gear lever console box) and the necessity of pulling the hood back into contact for the final few millimetres prior to relocking the top in the up position.

Subsequently there were no problems in swiftly deploying the hood, so long as one remembered that the engine had to be off, the ignition key turned one click and the gear lever in neutral, but other niggles nagged at our attention to the point where we wondered whether living with the car might actually be worse than simply borrowing it for a favourable week. To release the boot, for example, you stoop into a footwell, press a button which electrically releases the lid. . . That is, so long as you have switched the ignition on. Why use the internal release all the time? Because, if you fiddle with the boot without having

primed the ignition, you set the UK standard burglar alarm off.

The doors never shut at the first attempt, and the driver's door locking catch was abnormally stiff to release. Other minor gripes were the door jamb location of the handbrake and the electrical operation of seat squab, front and rear, minus the most important horizontal plane. Why not dispense with the minor electrical goodies in a small convertible anyway? Or build a "power-everything", Mercedes 500SL-style, in the first place? Fit and finish of the Porsche hood was outstanding and, if I have driven a quieter hood-up four-cylinder convertible, the Porsche has eclipsed its memory by its composure at an indicated 80 mph. The low lines of past Speedsters is hinted at in the low roofline and this extended- wheelarch 2 + 2 gnome seater is the most rakish of roadsters in red. Also of exemplary quality were the leather-trimmed seats, and the seating performed its role through easy access and reassuring location in a manner that deserves blatant copying for the benefit of a wider populace.

At the Wheel

Look at those flexibility figures and see just how fast a turbocharged four responds to a demand for everyday speed, if the driver is alert. In third gear the 944 Turbo Cabriolet demands just over 3.5 seconds to zip from 50-70 mph. Be lazy, and it will take almost three times as long in fifth for the same increment.

So long as you are prepared to be involved with the eerie smoothness of this large unit at higher rpm, it is the finest turbocharger installation we have ever experienced. A Porsche purist with a priority for effortless road response might argue that the old 225 bhp Turbo was a more friendly beast. Yet the sheer energy available on demand in the more powerful, and more recent, variant is addictive.

The motor has a magnificent note beyond 5000 rpm, spinning merrily beyond 6000 rpm with heartening vigour that contains not a trace of traditional four-cylinder roughness. The half-litre larger normally-aspirated S2 power unit also denies its large cylinder bores, but for this writer the counterbalanced 2.5-litre is better still. We can understand Porsche employee annoyance with those who turn their noses up at the model on the basis, "oh it's only got a four-cylinder engine". The fact is that a Porsche counterbalanced four is a lot smoother than many mass production sixes, without the obvious weight penalties. Acceleration figures would not normally preoccupy our testers, but those of the 944tc do bear longer study. The leap to 30 mph is accomplished in 2.2 seconds, a fine traction achievement by Porsche for a powerful front-engine, rear-drive, turbo car, only equalled by the Ford 4x4 RS Cosworth in recent months at Millbrook track. By 60 mph the Porsche would be ahead of the 220 horsepower Ford (5.9 seconds versus 6.5), but the pair are back on parity by 100 mph and less than 17 seconds have elapsed (a tenth between them in our comparative experience). We did not record even fractional differences between their 0-120 mph abilities, 26.8 seconds apiece.

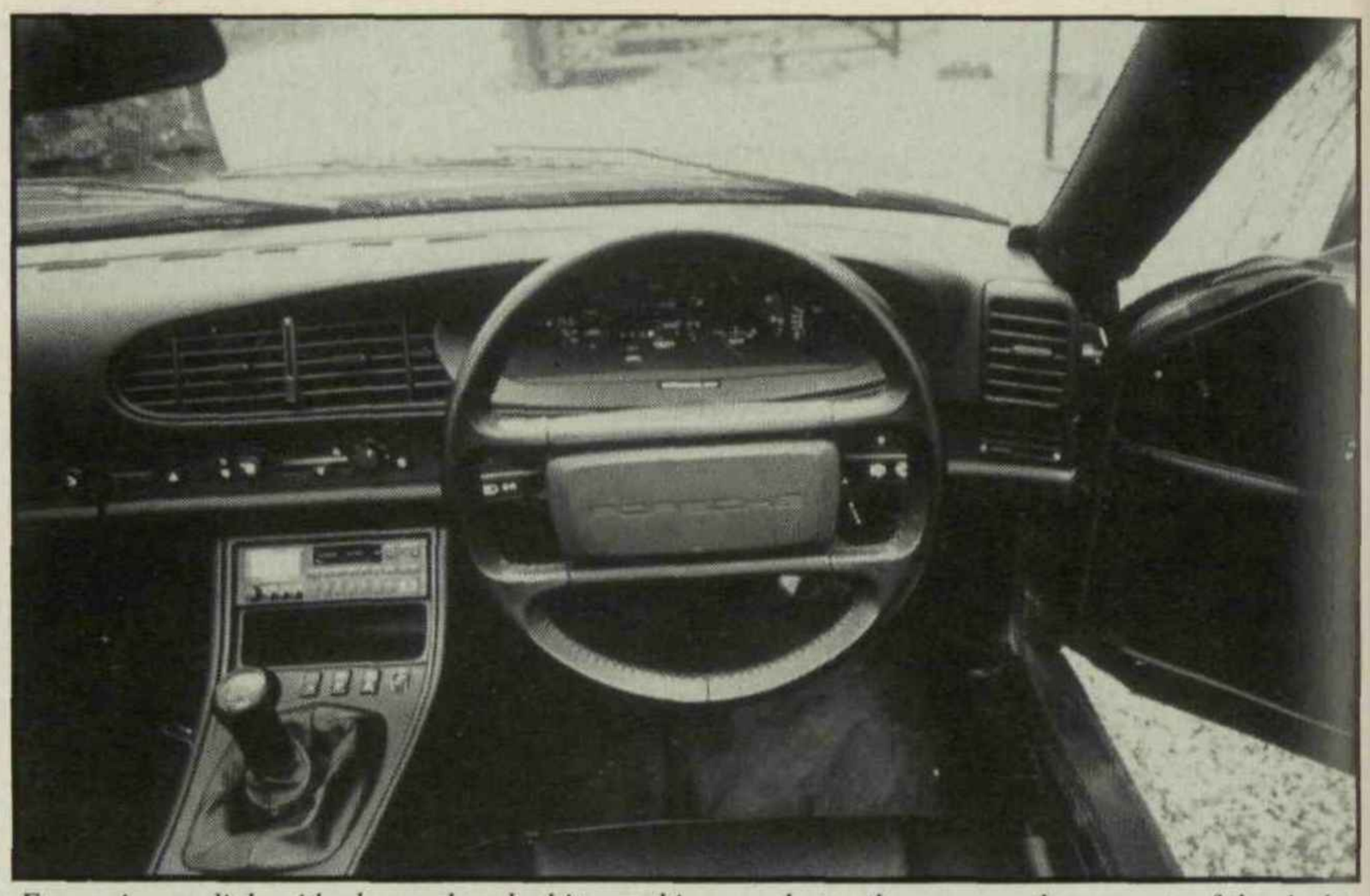
Naturally, the Porsche was more difficult to "launch" than the 4x4 Ford, demanding a 4500 to 5000 rpm clutch engagement. Thus abused, its excellent elapsed times were sometimes accompanied by the kind of axle hop that we had hoped was laid to rest with the Marina and Hunter saloons of the Seventies.

The maximum speed runs were achieved without fuss, or the roof showing any inclination to depart at nearly 150 sustained mph. Stability was excellent; note that this is one of the few sporting cars on the road today without an obvious tail spoiler.

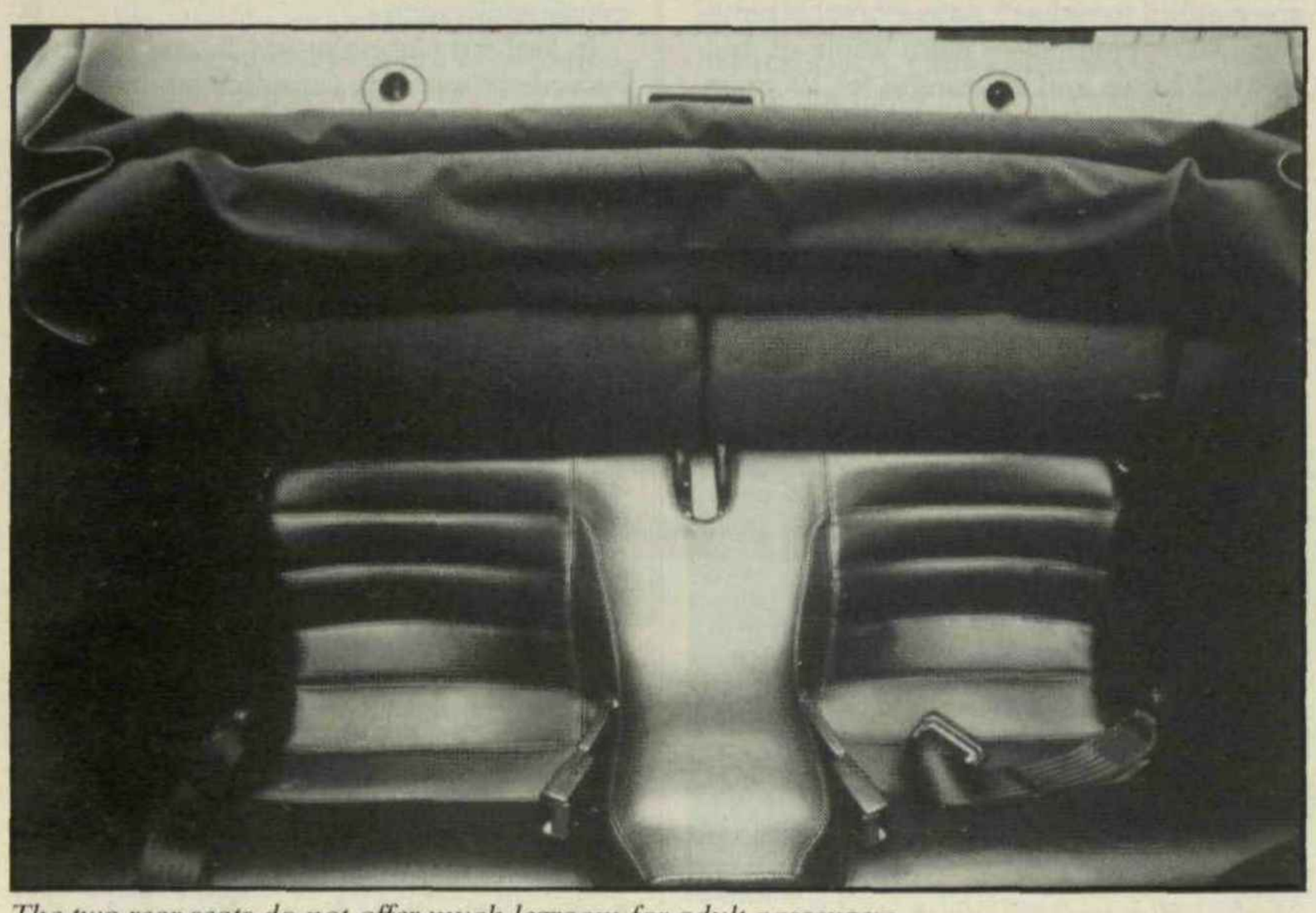
Porsche preferred to manage the air underneath the body on this model, providing front- end ducting to assist braking whilst the rear features a small under-bumper "blade" that appears to do some good. (TWR tried an under-bumper spoiler on their European racing XJ-S V12s of 1984; contemporary team personnel felt it was "purely to upset the opposition, it does no discernible good at all".)

The Turbo Cabriolet chassis is almost old-fashioned in its hard low-speed ride and the steering will certainly tell you how 225 low profile tyres squirm away from adverse cambers, or the crown of a minor road. Yet there was not a solitary rattle exhibited by the red roadster, even when regularly pressed into 20-30 mph coverage of a by-road that was tarmac before South Oxfordshire District Council discovered that neglect is the cheapest short-term maintenance option.

The steering is not as sharp as you might expect in a stiffly sprung chassis, but there is plenty of variable power assis



Four primary dials with clear red and white markings are better than some other aspects of the dash.



The two rear seats do not offer much legroom for adult passengers.

tance feedback and the levels of grip now routinely obtained are truly admirable. In track use a 944 turbo can be understeered into a third or fourth gear corner with a modest amount of optimism and excess velocity. By the time you are really beginning to worry if you will ever get the nose to point at an apex, the turbo boost and power band are fully engaged. The result is a long spell of neutrality, when the 944 can be balanced with a confidence that is rare in conventional cars.

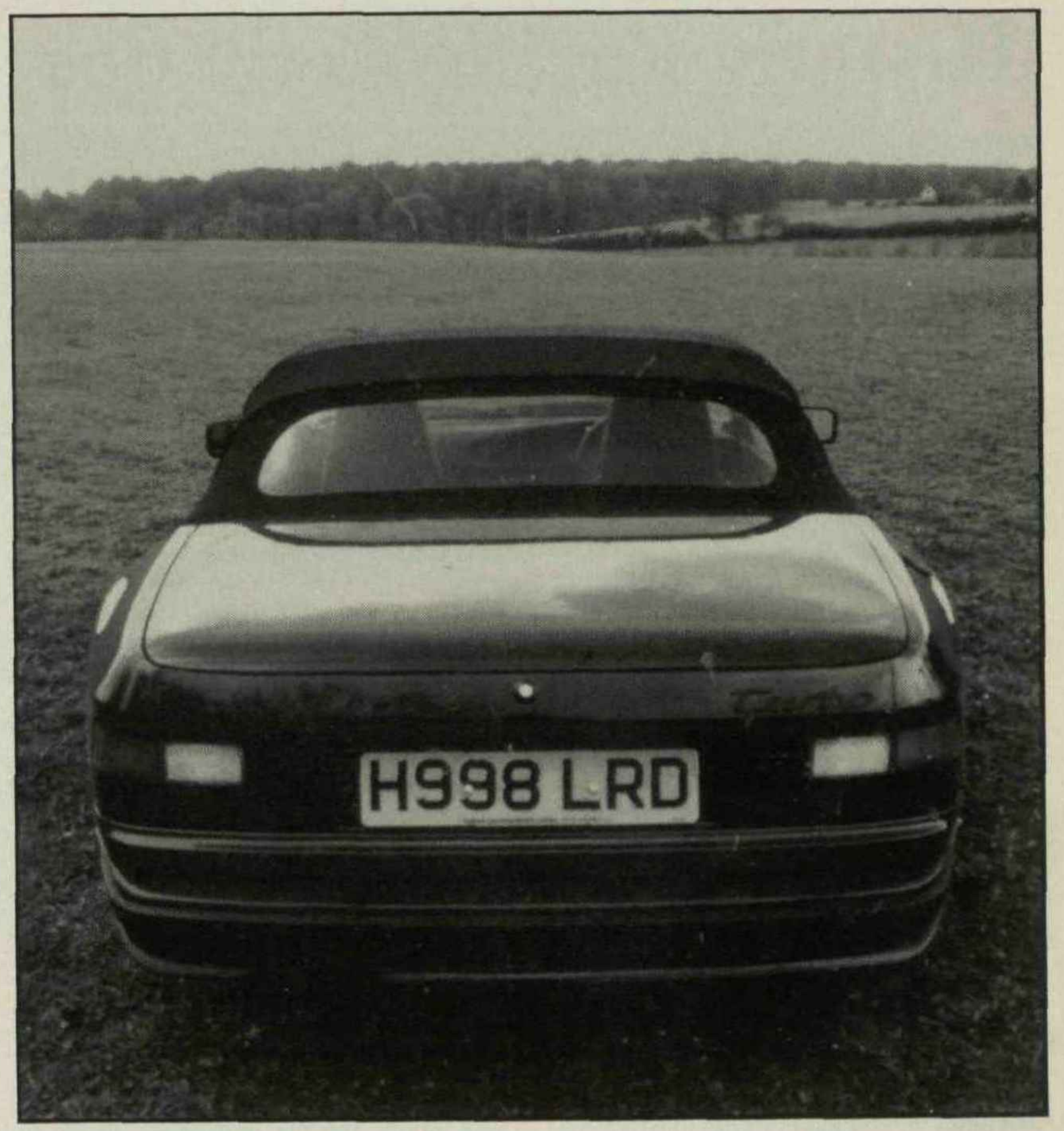
At very slow speeds and high boost engine speeds you may edge the rear tyres out of line, but generally you are unlikely to get the 944tc to the point where a spin will set in. We have not encountered any such sliding tendencies in hard road use. As intimated earlier, the brakes are outstanding; further comment from us would be patronising, for we cannot think of a public road use improvement we would make.

Verdict

The 944 Turbo Cabriolet offers a rapid and honest sports car, but one without the traditional drawbacks. The ride is firm without inflicting jarring shocks on the occupants, but the harder you drive, the more sense it makes.

Its closest competitor is the turbocharged Elan SE. At half the money requested for a Porsche 944tc the £22,490 new Elan is tempting, but Porsche customers will probably pay the extra to avoid front-drive and gain on quality. The Elan is a convincing ensemble, but performance is less than that of the German soft top: our figures show the Lotus recording 134.5 mph, 0-60 mph in 6.5 sec and 0-100 mph in 19 seconds.

Over £50,000 is required for more sheer straight-line soft-top speed than the 944tc musters, only the bigger 500SL Mercedes



stretching into the 155 mph bracket. And the V8 Mercedes would still lag in acceleration to the despised four cylinders. Neither can Stuttgart supply the immense driving pleasure that Porsche provides, all backed up with evidence of conscientious durability development and some handling lessons learned in motor sports.

The 944 Turbo Cabriolet is a limited edition that may well be worth collecting. It was certainly one of our better motoring experiences of 1991. JW

MOTOR SPORT TEST RESULTS – PORSCHE 944 TURBO CABRIOLET

SPECIFICATION

ENGINE: Engine water-cooled, light alloy construction; inline four cylinders; twin contra-rotating balancer shafts; SOHC, 2 valves per cyl. Capacity: 2479cc (100 x 78.9mm). KKK K26 turbocharger and intercooling; max boost 0.75 bar/10.7 psi. Bosch Digital Motor electronic ignition and fuel management with over-run fuel cutoff. 8; 1 cr, 3-way catalytic convertor. Max power; 250 bhp @ 6000 rpm. Peak torque; 258.5 lb ft @ 4000 rpm.

TRANSMISSION: Front engine, rear drive via 5-speed manual transaxle (rear mounted gearbox); limited slip differential with 40 per cent preload.

GEAR RATIOS:

First	3.50	
Second	2.06	
Third	1.40	
Fourth	1.03	
Fifth	0.829	25.46 mph per 1000 rpm
Final drive	3.375	

BODY: Galvanised steel 2-door 2+2 convertible. Nose in polyurethane; fabric hood with 95 per cent electrical operation and manual locking/unlocking. Petrol tank of 80 litres/17. 6 gallons.

DIMENSIONS: Wheelbase, 94.5 inches/2400mm; front track, 57.95 in/1472mm; rear track, 57.13 inches/1451mm; width, 68.3 inches/1735mm; length 166.4 in/4230mm; height, 50.2 in/1275mm. Kerb weight; 2948lb/1340 kg.

FRONT SUSPENSION: MacPherson struts, double acting hydraulic damping, coaxial coil springs, aluminium lower arms, 26.8mm antiroll bar. Steering; rack and pinion , 3.24 turns lock-to-lock on an 18.85; 1 ratio; hydraulically power-assisted; 10.75 metres turning circle.

REAR SUSPENSION: Independent, semi trailing arms, torsion bar spring per wheel; telescopic hydraulic dampers and 16mm anti roll bar.

BRAKES, WHEELS, TYRES: Brakes, wheels, tyres; Power-assisted, vented front and rear with four piston calipers; 11.1 inch/282mm diameter front discs; rears, 11.38 inch/289mm diameter. Bosch ABS electronic antilock braking . Light alloy 7.5J x 16 inch front wheels; 9J rears. Pirelli P700Z of 225/50 ZR 16 front & 245/45 ZR rear.

PRICE: £46,993.54 UK taxes paid.

MANUFACTURER/IMPORTER: Porsche Cars Great Britain Ltd. , Bath Road, Calcot, Reading, Berks, RG3 7SE.

CLAIMED PERFORMANCE: Max speed, 162 mph; 0-62.5 mph, 5.9s.

TEST RESULTS

Conducted at Millbrook Proving Ground using 1991 Correvit electronic measuring gear.
Weather conditions: Overcast, dry tarmac.

ACCELERATION:

0-30 mph	2.22 seconds
0-40 mph	3.40 seconds
0-50 mph	4.54 seconds
0-60 mph	5.91 (5.86) seconds
0-70 mph	7.98 seconds
0-80 mph	10.41 seconds
0-90 mph	13.10 seconds
0-100 mph	16.80 seconds
0-110 mph	21.12 seconds
0-120 mph	26.85 (minus air conditioning)

FLEXIBILITY:

Third gear 50-70 mph	3.68 seconds
Fourth gear 50-70 mph	5.30 seconds
Fifth gear 50-70 mph	9.30 seconds

Standing 0. 25 mile/400 metres:
14.98 seconds @ 93.8 mph.

Maximum speed: Millbrook 2.029 mile bowl, lap speed; 148.52 mph.

Maximum gear speeds: At 6400 rpm:

First	37.4 mph
Second	63.2 mph
Third	91.2 mph
Fourth	120 mph

Overall Fuel Consumption: Test Average: 17.7 mpg
Best: 20.72 mpg. Worst: 13.62 mpg

Government mpg figures:
Urban: 21.2 mpg
75 mph: 30.4 mpg
56 mph: 39.8 mpg.

Historic Racing Activities

The talking-point in historic racing circles this year has been the Vintage Sports Car Club's controversial decision to admit rear-engined cars to its races for pre-1960 Grand Prix machinery, and the effects it is having.

It's an old argument. On the one side, logic says that if races are open to cars built before 1960, they should include any car built before 1960, irrespective of engine position. The other view is that the period in question represented the end of an era, and the rear-engined cars fitted better with the next period.

On top of all that, there was — and is — a strong body of opinion which believes that Anthony Mayman and his Lotus 16 have enough of an edge to beat the rear-engined cars regardless.

The first few races of the year have done little to settle matters. Mayman succeeded in winning the Silverstone race, first 1991 encounter between old and new, when he pipped Peter Hannen's Cooper on the last corner. But at Donington the situation was reversed, when John Harper took his Cooper past the Lotus a few laps from the end and held it off to the flag.

Lack of representative entries meant the early non-VSCC meetings in Britain did not prove anything either way. The race at the AMOC's Brand Hatch, held in pouring rain, allowed Gerry Porter (who had been third at Silverstone) to win in his 2-litre Cooper-Climax. Chris Mann's Lotus, which has given the rear-engined cars a run for their money in the past, was scratching from the Historic Sports Car Club's Visage Super Prix meeting at the same venue a month later, and although Harper was there he broke down on the line, and Porter won again. Since its establishment in 1988, the Historic Grand Prix Association's annual 100-mile race has been the high point of the year. Restricted to cars built before the end of 1957, and with strict regard to originality.

Winner of the first three races was Willie Green in a variety of 250F Maseratis: Anthony Bamford's "Piccolo" at Donington the first year, and then Hartmut Ibing's ex-works 1957 car at the Nürburgring and Silverstone in ensuing years.

There were two departures from tradition in this year's race held on May 18/19 at Spa-Francorchamps. The first was that "non-complying" cars were admitted, excluding the dreaded rear-engined Cooper and Lotus designs but including post-1957 replicas and Neil Corner's Ferrari Dino. This last car, although an undeniably glorious machine, is not a Formula One car, as it runs with a 3-litre V12 engine fitted for *Formule Libre* racing in New Zealand.

The second departure came in the overnight break between the two halves of the race, when it was decided that the rear-engined cars could, after all, join in, starting from the back of the grid. This, it was hoped, would bring the numbers of fast cars up to scratch, as between practice on Saturday morning and the end of the day's competition five of the six fastest qualifiers had suffered problems of greater or lesser permanence.

Corner had won this event, but Hannen (BRM P25) led him until mechanical troubles intervened, and Ludovic Lindsay (250F replica) spun away what would have been second place in the early stages. Lindsay Owen-Jones (B-Type Connaught) lost time in the pits with gear-selection problems AND Alain de Cadenet rendered his similar car a non-starter. Until he blew up Nigel Corner (250F Maserati) held second place behind his father which then left Nick Mason's similar car to take second place, chased by the ageing Cooper-Bristol of an on-form John Beasley.

For Sunday's race Hannen switched to his Cooper-Climax, and ran Corner Sr close until a misfire dropped him back slightly. He nevertheless finished second, ahead of Lindsay, Mason, Beasley and the rest. On aggregate Corner was a runaway winner, with 3½ minutes in hand over Mason. The 250F driver was however winner of the HGPCA award, though by less than half a minute from the impressive Beasley. Jeffrey Pattinson (ex-Moss 250F) was fourth, and the only other runner to complete the full 21 laps. The Ure/Mann ERA was one lap down (and first pre-war car), followed by Tony Merrick, who completed 19 laps in the Haysahi-owned P3 Alfa (but not the ex-Nuvolari car, which will appear later in the year).

Races for pre-war and vintage cars at VSCC meetings have been covered by our reports, as have the events for 1950s sportscars, but it is worth looking again at this last group. Not only are these cars enjoying a resurgence of popularity, but they, like the '50s GP cars, are promoted by groups other than the VSCC.

Harper, driving a 1957 D-type Jaguar for auctioneer Robert Brooks, won at both VSCC meetings and at Spa, in spite of a certain amount of bickering over whether the car's provenance is sufficient for it to be admitted to these events. It is not alone, for the days of rocketing values of such cars has led to conflicting claims to particular identities of a number of cars.

Indeed, on more than one occasion this year two cars in the same race have laid claim to the same identity! Harper's closest challenger has been the Costin-bodied Lister-Jaguar of Gary Pearson, but this retired at Silverstone, was a non-starter at Spa, then finished second (after a spin) at Donington.

At Spa Harper was chased all the way by Steve O'Rourke in a 1958 "knobbly" Lister-Jaguar, the two putting on a wonderful battle.

The sportscars and GP cars race together in a new series promoted jointly by the HSCC and the AMOC. The first two rounds have been at Brands Hatch, and although both were won by Porter's Cooper, sportscars filled the next places both times. In May Roger Ealand in a Rejo, revelling in the wet conditions, was second, while at the June meeting David Beckett (Lister-Corvette) filled the runner-up spot ahead of O'Rourke.

The Devin SS, with which Ron Gammons led the field home at Silverstone, was again at the Super Prix meeting, this time with more acceptable tyres, but again not eligible for points. The car, although providing a unique sound, was not competitive here, finishing sixth. KHRC

VSCC Silverstone

Anthony Mayman may have won two races at the VSCC's Hawthorn Memorial meeting at Silverstone in mid-June, but he missed out on the important one, the Hawthorn Memorial Trophy race, when he was involved in a collision in his Lotus 16 with Peter Hannen's Cooper-Climax and was forced to retire. Martin Stretton in his newly restored Cooper-Climax was therefore the winner, leading home a string of three similar cars. First front engined car home was Pilkington's Talbot ahead of Jamieson's similar car, both one lap behind.

Mayman's success came in the Bill Phillips Trophy race in his Maserati and the Hawthorn Spanish Grand Prix Trophy race, which was an ERA benefit, Mayman being followed home by Merrick, Ricketts, Chris Mayman and Pattinson with Jay's Alta being the best of the rest.

Mann in the Alfa Romeo was runner-up to Mayman in the Bill Phillips Trophy race, some 3½ seconds behind while into third and fourth came the Alvises of Jamieson and Sparrowhawk. The latter, though, achieved outright success in the first 5 lap scratch race when he had a two second lead over Dunn's Riley.

Another exciting race of the day was the Invitation race for Fifties sports cars. It was a two horse race all the way with Frank Sytner in the Lister Jaguar doing all he could to slip past John Harper's D-type, but the latter held his slim lead all the way to the chequered flag. They were followed at some distance behind by Hall's AC and Stretton's Cooper.

Pollock won the first 5 lap handicap race of the day, his Invicta crossing the finishing line just 3½ seconds ahead of Giles' Frazer Nash. WPK

MOTOR SPORT Brooklands Memorial Trophy

Positions to date in the MOTOR SPORT Brooklands Memorial Trophy contest are: AJ Mayman 103; M Grist 44; N Mason, E Dunn, D Ricketts 34; A Merrick, A Boswell 31.

The next round is at Mallory Park on July 7.

MOTOR SPORT

IN ASSOCIATION WITH

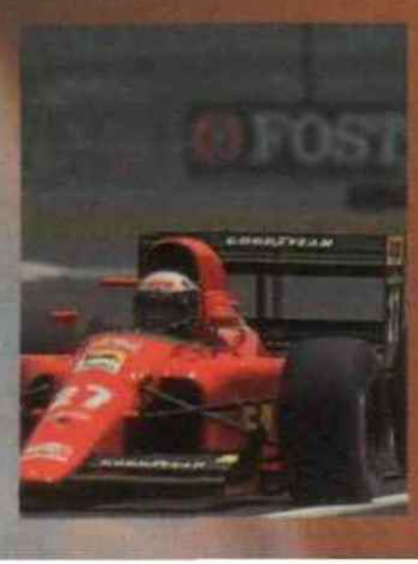
GOODYEAR

PRESENT

THE 1991 BRITISH GRAND PRIX PREVIEW







For those who thrive on pressure

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WELCOME to the British Grand Prix preview. You will see that at the heart of the magazine we have followed last year's practice and put some vital statistics with regard to the drivers and teams as a sort of form guide, although most of us will already have a good idea who the favourites are going to be. Nevertheless it still makes interesting reading.

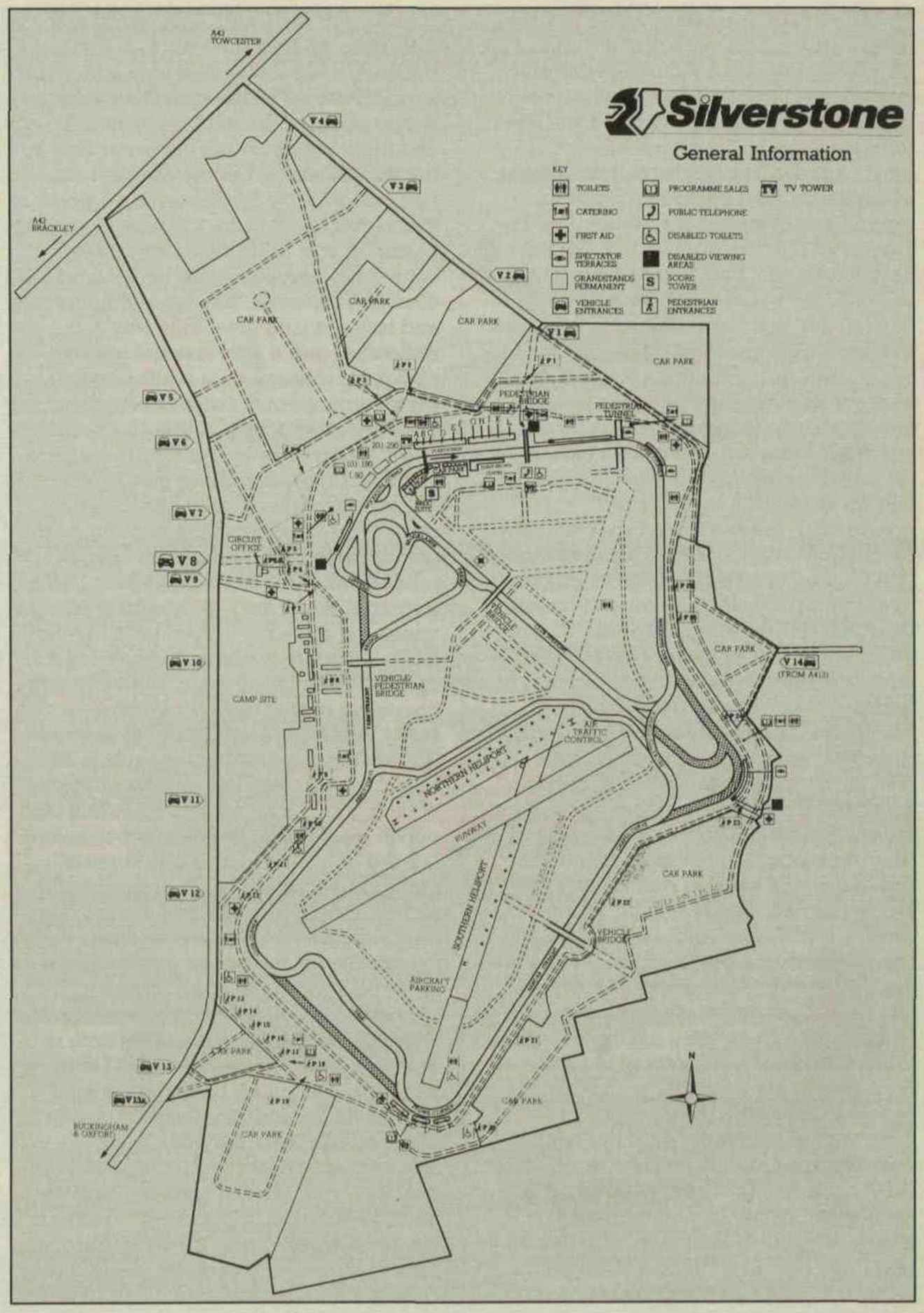
Whether we like it or not an integral part of Grand Prix racing is sponsorship and the corporate entertainment that goes hand-in-hand with it. Why do international companies decide to spend huge amounts of money promoting themselves in this highly specialised arena? While the teams are always ready to accept the money, are they really up scratch when it comes to providing what their benefactors want? One of those adept at courting sponsors and seemingly satisfying them is the Williams team. We went down to their headquarters at Didcot and asked their commercial guru, Sheridan Thynne, on how he goes about getting sponsors and, having found them, what it takes to look after them.

The advent of the 3½-litre formula has seen a welcome swelling of the ranks of the engine suppliers, but is there any chance for the independent manufacturer to compete against the major manufacturers. At least two such companies believe there is and both are British. We have been to see Ilmor Engineering and Engine Developments to assess their chances of success.

Were it not for Goodyear, Grand Prix racing would not be what it is today, nor would there be much of a history to write about. DSJ casts an affectionate eye over the tyre company's involvement in motor racing for the last 30 years and celebrates their recent 250th Grand Prix win, while there is also a look at how the motor industry benefits from the technology spin-off of motor racing.

Finally since the British Touring Car Championship has really come into its own this year, and since there is a round at Silverstone, we have been to talk to leading entrant Vic Lee Motorsport to enquire just what does it take to be a front-running team in the major national series.

Nothing can actually beat going to the British Grand Prix, but we hope this preview can whet your appetite as well as give you an insight into just some of the things that will be occuring in the background. WPK



1991 BRITISH GRAND PRIX PROVISIONAL TIMETABLE

FRIDAY, JULY 12

06.00		Gates Open
08.00 – 09.00		Formula 1, timed pre-qualifying
10.00 – 11.30		Formula 1, untimed practice
11.40 – 12.15		Track demonstrations and air displays
11.45 – 12.15		Pit-road walkabout for holders of reserved centre passes
13.00 – 14.00		Formula 1 qualifying, first session
14.15 – 14.45		Formula 3 qualifying, first session
15.00 – 15.30		GM Lotus qualifying, first session
15.45 – 16.05		Rover qualifying
16.20 – 16.50		Touring Car qualifying, first session
17.05 – 17.35		Porsche Carrera Cup qualifying, first session
17.50 – 18.20		Formula 3 qualifying, second session

SATURDAY, JULY 13

06.00		Gates Open
08.00 – 09.15		Pit-road walkabout for holders of reserved centre passes
10.00 – 11.30		Formula 1, untimed practice
11.40 – 12.55		Track demonstrations and air displays
13.00 – 14.00		Formula 1 qualifying, second session
14.20	RACE 1:	BRITISH FORMULA 3 CHAMPIONSHIP RACE — 15 laps
15.20	RACE 2:	DUNLOP ROVER GTi CHAMPIONSHIP RACE — 10 laps
16.05 – 16.45		Jaguar qualifying
16.55 – 17.25		GM Lotus qualifying, second session
17.35 – 18.05		Porsche Carrera Cup qualifying, second session
18.15 – 18.45		Touring Car qualifying, second session

SUNDAY, JULY 14

05.00		Gates Open
08.00 – 08.40		Pit-road walkabout for F1 Team Guests/Personnel
09.30 – 10.00		Formula 1, untimed warm-up
10.15	RACE 3:	PORSCHE CARRERA CUP RACE — 16 laps
11.25	RACE 4:	GM LOTUS EUROSERIES RACE — 16 laps
12.00 – 13.25		Track demonstrations and air displays
13.30		Warming-up lap
14.00	RACE 5:	BRITISH GRAND PRIX — 59 laps
16.00	RACE 6:	JAGUAR SPORT INTERCONTINENTAL CHALLENGE RACE — 20 laps
17.15	RACE 7:	ESSO RACMSA BRITISH TOURING CAR CHAMPIONSHIP RACE — 15 laps

Keeping a statistical score is a full-time job for some enthusiasts, whether it be the number of pole positions gained by Ayrton Senna, the number of race wins by Alain Prost or the number of times a team has failed to finish, and the excitement usually begins at the figure 50, it being a nice round figure and halfway to the century (100) so beloved by cricket enthusiasts. Whether it is your 50th win, or 50 years since your first win, the world of statistics gets excited and the nostalgia-group are quick to hang it on something purely for publicity purposes. Recently someone began to show excitement for the 36th anniversary of one of my more spectacular personal happenings, but I looked at him blankly and asked why? What is so important about the 36th anniversary?

Recently, the Goodyear Tyre Company held a fairly exclusive little luncheon party at the Royal Automobile Club in London in celebration of their 250th win in Formula One Grand Prix racing, a figure unsurpassed by any other tyre manufacture, and covering a period of 26 years of endeavour in Formula One. The list of drivers and makes of car that have carried Goodyear tyres to victory reads like a who-is-who of international motor racing: Brabham, Gurney, Ickx, Stewart, Fittipaldi, Peterson, Reutemann, Lauda, Regazzoni, Hunt, Andretti, Jones, Piquet, Prost, Mansell and Senna have all won races on Goodyear tyres, as have many more drivers, and Ferrari, McLaren, Lotus, Tyrrell, Williams and Brabham are among the more prominent teams to use Goodyear tyres.

At the aforementioned luncheon Lea Mehl, Goodyear's Director of International Racing, presided and on his right sat Sir Jack Brabham, who did so much for Goodyear in their early days in Formula One, while on his left sat Ron Dennis, who is doing so much for Goodyear today, with Ayrton Senna and the McLaren-Honda. The interesting point was that Leo Mehl was European Racing Manager for Goodyear when Brabham was winning races with his Brabham Repco car, and Ron Dennis was Brabham's mechanic, and Ron Tauranac, a little further along the table, was engineering the Brabham cars. Today Leo is Goodyear's Director of International Racing, Jack Brabham has retired from the racing scene and returned to Australia with a Knighthood, Ron Dennis heads McLaren International, and Ron Tauranac is still doing what he always enjoyed the most, designing racing cars. Sadly, the one man who should have been with us died last year. That was little Richie Ginther who drove a 1½-litre V12 Honda Formula One car to victory on Goodyear racing tyres in Mexico in 1965 to score the first of the Goodyear Formula One victories. Ayrton Senna scored the 250th victory for Goodyear when he won this year's Brazilian GP, and by the time of the luncheon he had made it 252 victories, and they still have not finished.

In a book written by Alan Henry and published by Hazelton (price £14.99) to commemorate this remarkable landmark in motor racing history, the Goodyear racing people look back on what got them started in racing. It was a survey done in the USA to see where the firm and its tyres stood in the buying public's eyes. The result was that the average Goodyear customer was pretty old, very conservative, and had Goodyear tyres on his old Chevrolet because they were dependable and lasted a long time. This was in the mid-Fifties and a very forward looking Goodyear management realized that the exciting new world that was emerging once the purges of the 1939-45 war had been repaired, called for a new image. They took the enormous step to decide to get into racing, to grow with the expansion of motor racing that was spreading worldwide, starting on a fairly low-key operation in their own domestic racing, from everything from drag-racing through sports car racing to Indianapolis. By the early 1960s Goodyear racing tyres had appeared in Europe at Le Mans and other sports car events and by 1964 they were ready to tackle Formula One, appreciating that worldwide it was Formula One, or Grand Prix racing, that was the pinnacle of racing in technology, and publicity and public awareness. They were well aware that the opposition had many years of racing and success behind them but the technical people at Goodyear were confident of their tyre designs' abilities while the production technicians at the Akron, Ohio, plant were ready for anything.

At this point there was a cheerful young American spending much of his time in Europe racing sports cars with "Lucky Casner's" Camoradi Racing team, and often to be found in the Palace Hotel in Modena, as Camoradi was closely involved with Maserati sports/racing cars. This was Fred Gamble, known locally to the Modenese as "Gambarini". He knew his way about Europe, knew the European racing scene and was one of those happy characters who could settle anywhere in the world and make himself at home. Goodyear had a tyre production plant in Wolverhampton, so they talked Fred Gamble into becoming their European manager and setting up a Racing Division at their UK base to start a serious attack on Formula One. With him went Walt de Vinney, a Chief Engineer, and by October 1964 the Goodyear Grand Prix Tyre Division was underway. As history records, just one year later Richie Ginther won the first Formula One Grand Prix for a car running on Goodyear tyres, and now 26 years later Ayrton Senna has notched up their 250th win, both men using Honda power, and even more interesting, both Honda-engines being of V12 configuration. The 1965 Honda V12 was a 1½-litre and was mounted transversely behind the driver, the 1991 engine of 3½-litres being outwardly a more orthodox in-line unit; I say outwardly because the 1965 engine gave something in the order of 154 bhp/litre while the 1991 engine gives an estimated 212 bhp/litre, such is engine progress.

At the time of their first victory Goodyear tyres did the job in transmitting 230 horsepower, with speeds of 150 mph and today they are still up to the job transmitting 750 horsepower and dealing with speeds of over 200 mph. Tyre technology has progressed with racing car technology, and much of the time car technology on suspension and aerodynamics and chassis design have been led by the Goodyear tyre designers. Grand Prix racing is all about cornering force and cornering forces comes down to tyre design, commensurate with acceleration and braking properties and wear rates. Having tyres that will make one fast lap doesn't help much in a 70 lap race.

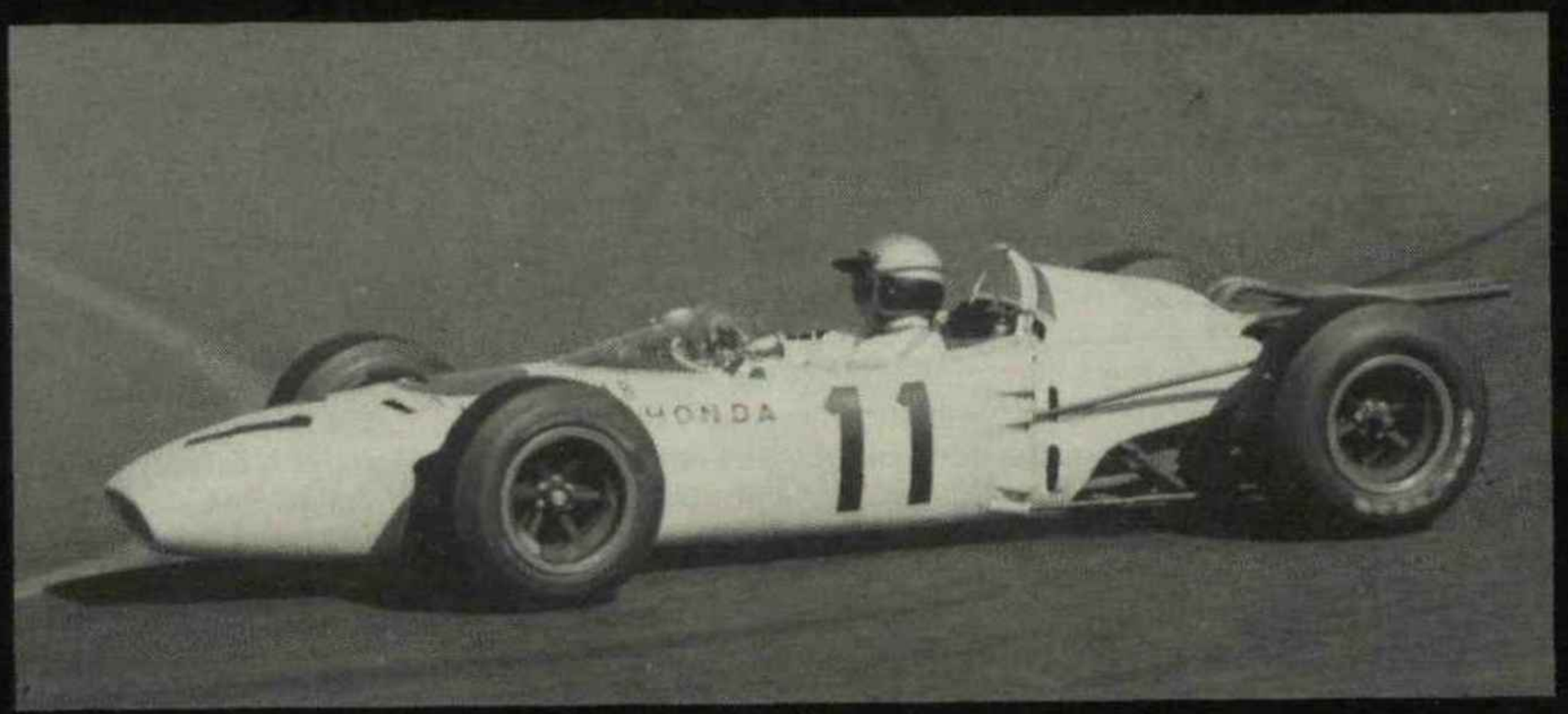
Basically a racing car can be divided with three major components as far as design and technicalities are concerned, (1) Engine, (2) Chassis, and (3) Tyres. In the days of the standard 400 bhp Cosworth engine, tyres were ahead, with chassis design second, in the turbocharged era engines were definitely ahead, with tyre engineering sweating a bit to keep up, and chassis design getting left behind. In today's situation I would put tyres at the forefront with engines and chassis about equal and not too far behind, so that in the current Formula One car we have a very efficient package.

In 1967 Fred Gamble said goodbye to the racing world and went to New Zealand to manage Goodyear interests "down under" and before he left we had dinner in a little restaurant near Monza during the Italian Grand Prix weekend. He brought with him his replacement at the Goodyear Racing Division, and introduced me to Leo Mehl, who did not have a great deal to say but was obviously happy to soak up the Formula One atmosphere. Leo stayed for 12 years and suffered quite a few dramas during the truly formative years of Goodyear's rise to almost complete monopoly, but even when in the depths of despair he was always cheerful and, most important as far

250...

DSJ has celebrated many an anniversary –

GOODYEAR



First Victory: Richie Ginther in the 1965 Mexican GP.



50th Victory: Peterson in the 1977 German GP.



100th Victory: Niki Lauda in the 1977 German GP.



150th Victory: René Arnoux in the 1983 Canadian GP.



250th Victory: Senna in the 1991 Brazilian GP.



200th Victory: Gerhard Berger in the 1987 Australian GP.

. . . NOT OUT

the latest has been Goodyear's 250nd win in Grand Prix racing.

the Press was concerned, he was at all times open and honest, just like Fred had been. While some racing firm's representatives are only friendly when things are going right, Goodyear's men have remained friendly at all times, good and bad. Some firms will never admit to mistakes or troubles, but Goodyear have the confidence and courage to say: "We are in real trouble, and it's our own fault — no excuses," and that sort of attitude endears them to the serious minded journalist. They don't have to say: "please don't print this," for their openess comes with a genuine degree of mutual self-respect. If a race report says "a bad day for Goodyear," that is enough on both sides. The firm that puts the blame for trouble on someone else and later you find it is not true, is the firm that collects all the rubbish. Another firm that followed Goodyear mentality was Renault-Sport when they were running their turbo-charged team and it generated understanding and friendship all round. Probably the worst offenders on the matter of this little racing aside is the Ferrari team.

When Leo Mehl moved on within the Goodyear management he was succeeded by Ed Alexander, then Denny Chrobak, Paul Lauritzen and today Leo Gaug, but Leo Mehl always appeared on the scene if there was something interesting happening. It would be an impending technical crises, some political maneouvrings within FISA/FOCA or the appearance of a new brand of tyre in the Formula One scene. In the Formula One paddock Leo Mehl is Mr Racing Goodyear, but in his Foreword to Alan Henry's book *250 Grand Prix Wins* he goes at some length to point out that a win by Goodyear tyres is not down to one man, but more like 2000 people within the Goodyear organisation, from tyre designers and compound chemists to fitters and truck drivers, but above all the Goodyear management that made the decision there many years ago to get the name Goodyear into motor racing, and the present management who continue to support racing and who appreciate the technical benefits that are desired from racing knowledge, both directly and indirectly, to say nothing of the world-wide publicity that accrues from winning. The management also have to take the risk of the negative publicity that comes from not winning.

Looking through the list of 250 Grand Prix Wins that features in Alan Henry's book it makes you realise how long Goodyear have been in the forefront of Grand Prix racing, and how much the world of Formula One owes to the Akron, Ohio firm. While this is meant to be a tribute to Goodyear success at 250 victories it is not the end of the story, nor can the whole story be told, for that you will need to get hold of a copy of the book. In it you will find a gripping story of a behind-the-scenes drama at Imola a year or two ago, when Goodyear had to change their whole stock of racing tyres overnight. For an exciting story of team-work, enterprise and endeavour that asked for no praise, other than another race victory, it is a heart-warming story in these hard and commercial days of racing.

To put into perspective just what 250 Grand prix victories represent the following is a list of accepted landmarks or milestones along the way. DSJ

GOODYEAR'S MILESTONES

First Victory: Richie Ginther (Honda) 1965 Mexican GP
50th Victory: Ronnie Peterson (Lotus) 1974 Monaco GP
100th Victory: Niki Lauda (Ferrari) 1977 German GP
150th Victory: René Arnoux (Ferrari) 1983 Canadian GP
200th Victory: Gerhard Berger (Ferrari) 1987 Australian GP
250th Victory: Ayrton Senna (McLaren) 1991 Brazilian GP

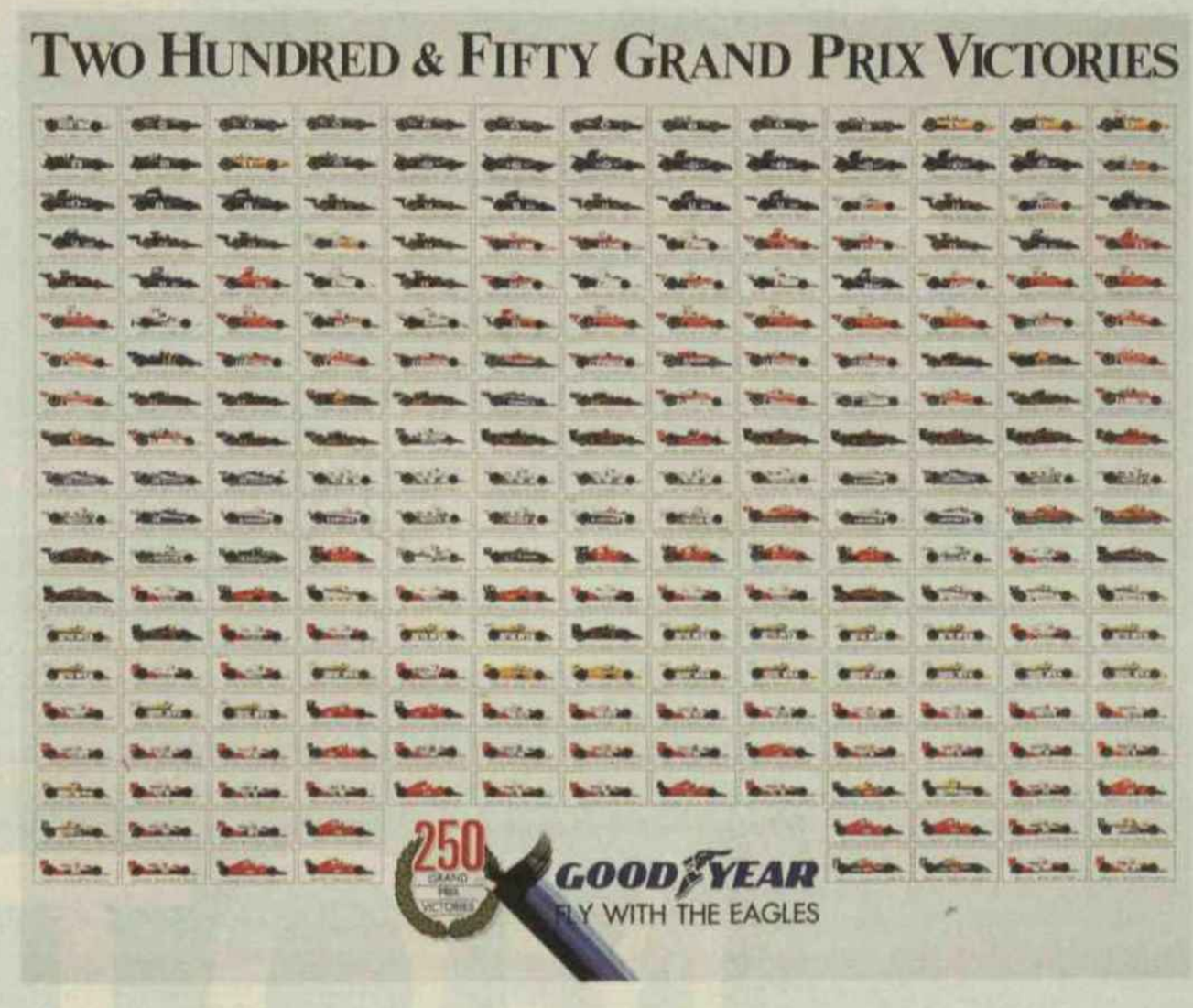
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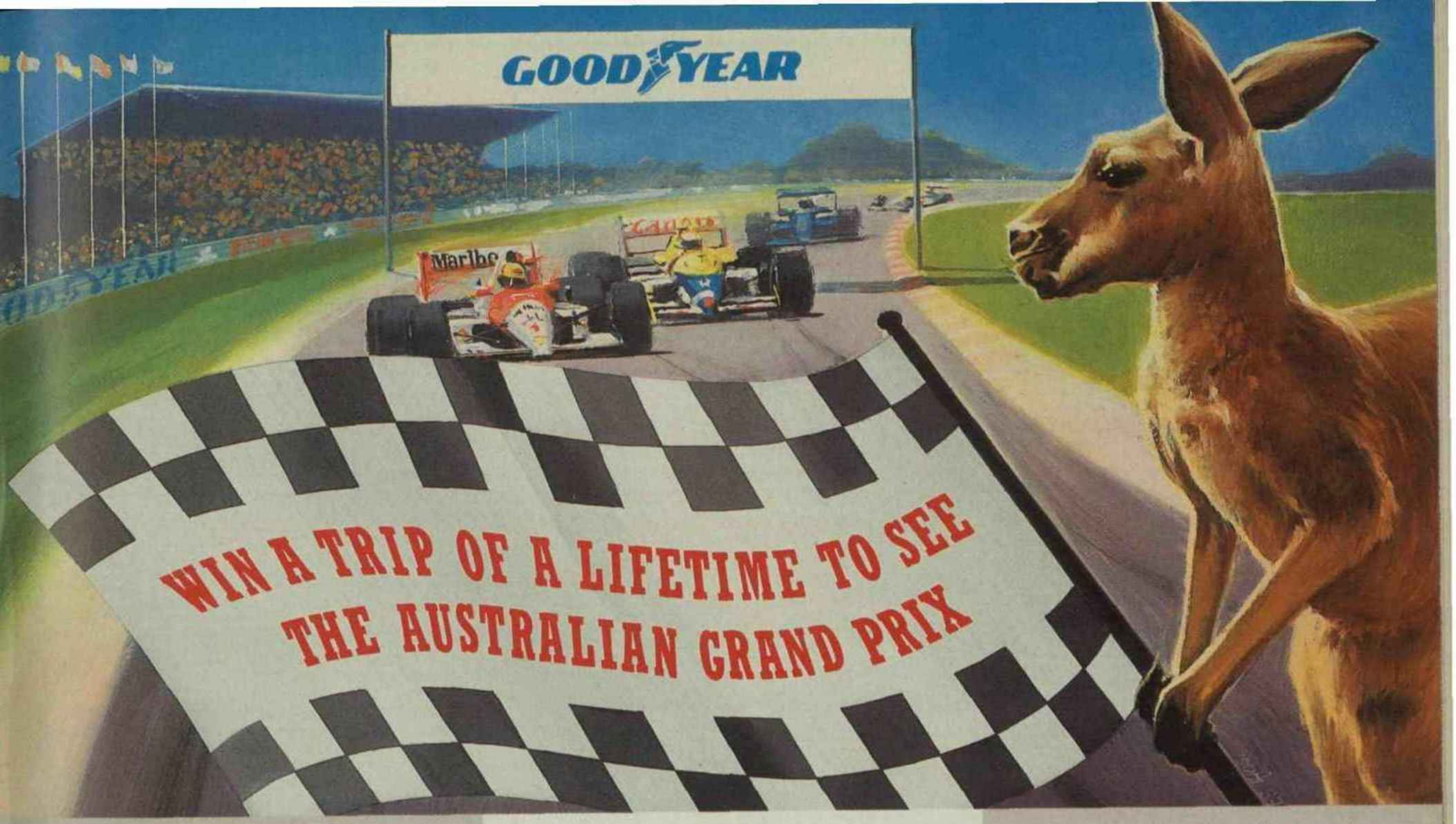
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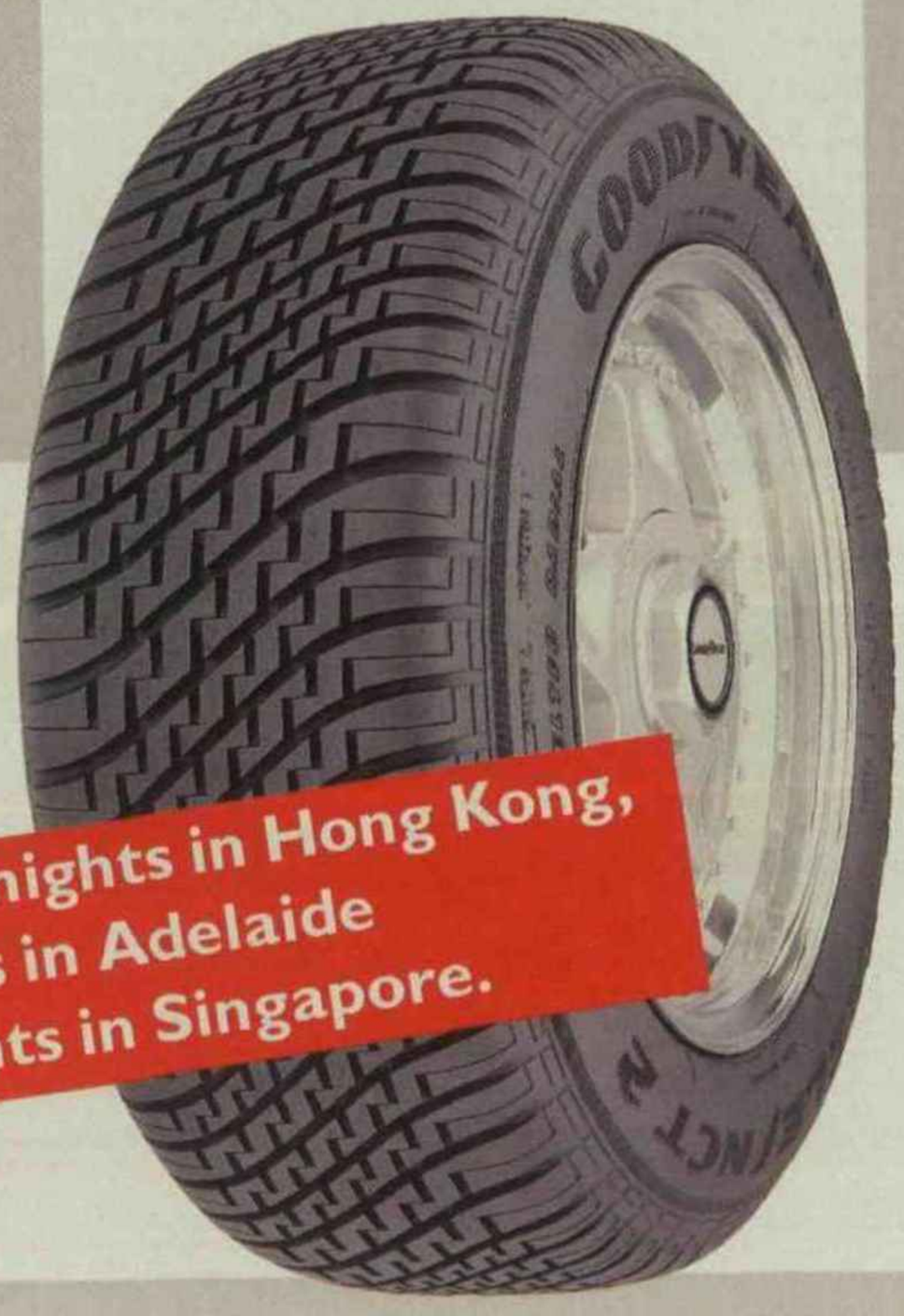
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In their words "the Renault 19's engine is an absolute gem" with a 0-60 time of "7.4 seconds." No wonder Car found it to be "more of a sports car, more of the time" than its rivals in their Giant Test.

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"On top of that," said Autocar & Motor, "it is comfortable, quiet, well equipped, solidly built... showing thick paintwork, snug-fitting panels and a resolutely rattle-free interior."

With standard power assisted steering into the bargain, the 19 16-Valve got Performance Car's vote for "great looks, value, handling and outright performance... Which leads us," as they concluded, "to the clinching argument in favour of the 16-Valve: price." At just £12,725 for both 3 and 4 door models (excluding on-the-road costs*) "it is significantly cheaper than virtually all of its rivals."

Finally a word or two on depreciation. The Renault 19 has one of the lowest figures of all in its class, backed up with an 8-year anti-corrosion warranty: a first in its class. All things considered, no wonder Autocar & Motor said of the Renault 19 16-Valve: "it has to be a winner."

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To Renault UK, FREEPOST, PO Box 21, Thame, Oxon OX9 3BR. For more information about the Renault 19 16-Valve fill in the coupon or call Renault Freephone **0800 525150.**

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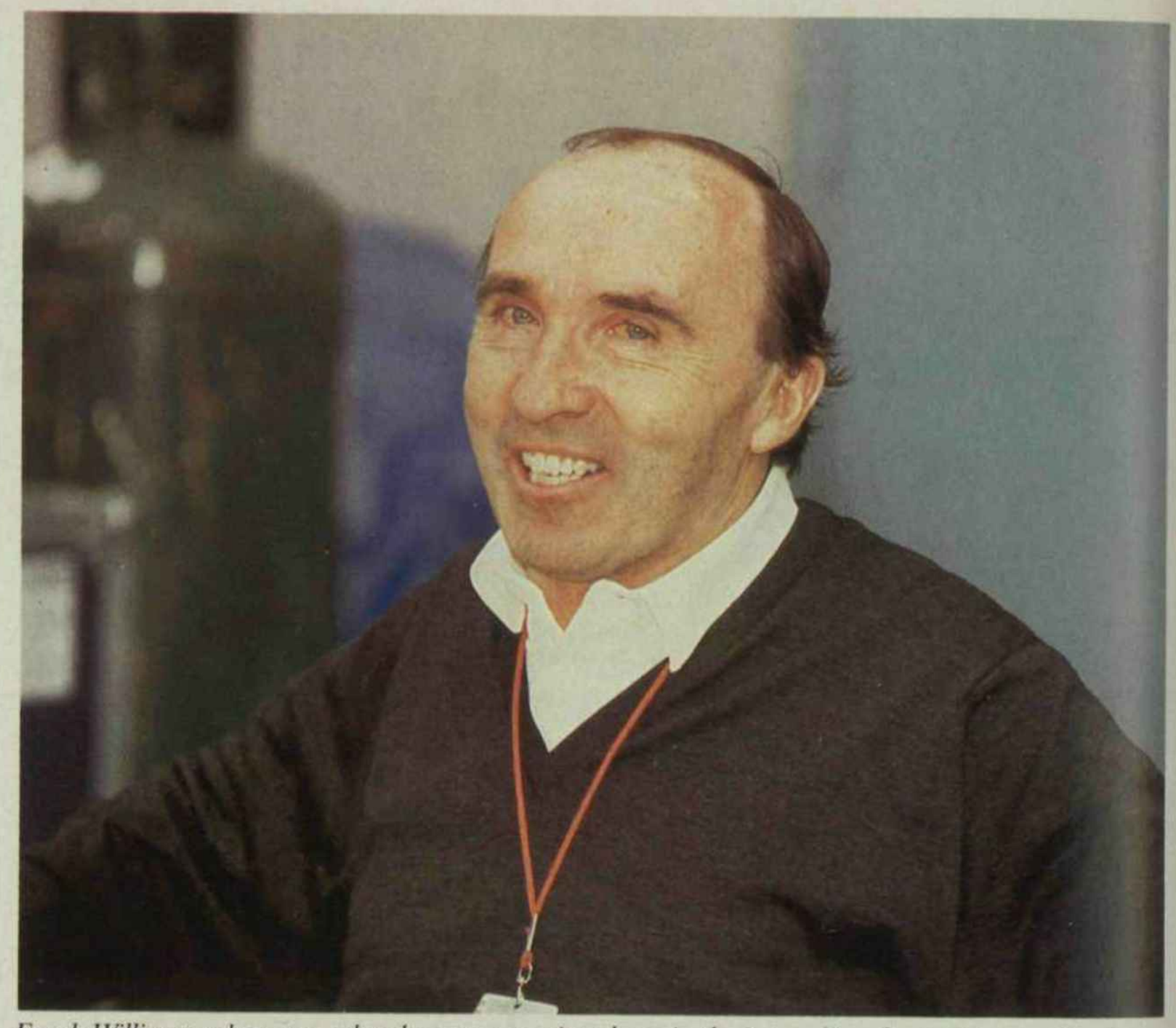
Telephone _____ Age (if under 18) _____

Present car make/model (eg Renault 19 GTS-X) _____ V9 MSP 261

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RENAULT 19 16-VALVE

All Renault 19s have a 12-month unlimited mileage warranty with free RAC membership plus an 8-year anti-corrosion warranty. * Renault 19 16-Valve 3-door or 4-door inc. est. on-the-road costs £13,175. (Car shown with optional supergloss metallic paint £165.) Prices correct at time of going to press. Renault UK Ltd, Western Avenue, London W3 0RZ. **RENAULT recommend elf lubricants.**



Frank Williams, whose team has become a major player in the international entertainment business.

The Entertainers

There are many who resent it, quite a number who put up with it, and even more who are too young to remember the sport without it, but it is fact that for nearly a quarter of a century motor racing and sponsorship have become inextricably entwined. Some teams still manage to retain a vestige of their country's racing colours, chief among these being Ferrari, but even this team, which stood proudly aloof of such vulgar commercialism finally relented a few years ago and allowed the Marlboro logo to adorn the side of its cars along with the trade decals as part of a deal by which the cigarette company picked up the tab for paying the drivers. To many it was the end of an era, a time when even Scuderia Ferrari, with the backing of the mighty Fiat empire behind it, was forced to bend its principles and accept outside money.

Other teams, namely Ligier and more recently Dallara, have managed to run in the national colours, particularly the French team which has always had solid support from patriotic French companies. It has been a long time, however, since a British team last ran in the traditional green, a colour so beloved of the purist racing enthusiast. Even when sponsorship dries up, the teams prefer to run in white, rather like an unfilled billboard, than in the national racing colours of Britain.

Of the sponsored teams, there are two which stand out as the best in attracting sponsorship, and while one has remained in the same colour scheme for nearly 20 years, the other has proved adept at not just attracting, but also retaining, sponsors for years.

The first team, of course, is McLaren. Long banished is the orange of the late Sixties and early Seventies replaced by the red and white Marlboro colours. To think of a McLaren in any other colour scheme is almost an impossibility so imprinted has it become on the enthusiasts' psyche. The other team is Williams, a team that set the Formula One world a flutter with the attraction of the Saudi sponsors in the late Seventies and which has since attracted a good number of prestige sponsors into the sport, which is both good for motor racing as well as for the Williams team.

It became clear, however, that the success of acquiring sponsors was not a casual affairand related to the success of the last race, or indeed the last season, but the realisation of a well though out and prepared campaign that might have begun anything up to two years before.

The man responsible for this military-like operation is Sheridan Thynne, a man who joined the team in 1979 to look after sponsors Leyland Vehicles who were joining the team on the coat tails of the Saudis, and who has since remained, with one short interlude, to mastermind the team's commercial side.

There are many sides to his jobs, but they boil down to two basic tenets: searching and servicing.

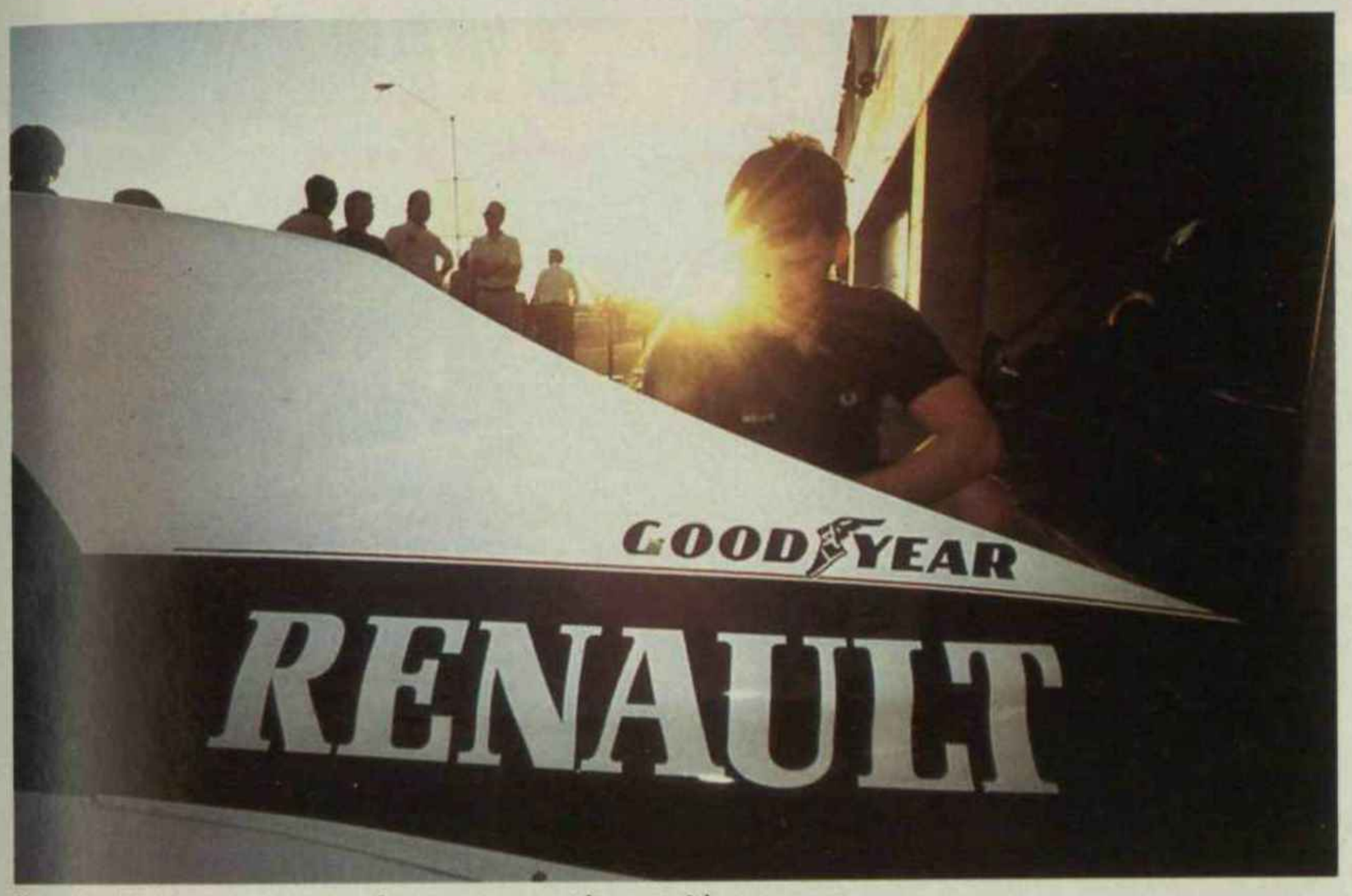
The first part, as already explained, is a long process. "We tend to have long lead times for our sponsors," he explained to me, "up to two or three years ahead, so that most of this year's sponsorship was agreed in 1989 and a proportion in 1990. Similarly we've agreed a large proportion of 1992 and quite a bit of 1993 already.

"We make a small number of very tightly focussed approaches to companies only after we've researched them in advance. When people in the lower levels of motor



Sheridan Thynne, the man responsible for looking after the welfare of the team, drivers and sponsors.

GOODYEAR



Supplier's demand as much coverage as the outside sponsors.

racing come and see me for advice and talk about how I can help them in attracting sponsorship, I'm always saddened when they arrive wagging their tails like an enthusiastic spaniel saying that they've just sent out 200 proposals last week. Saddened because it is inconceivable that there could be 200 companies who might be serious sponsors and it would be better and a significant saving on the stamps and the rain forest if they would apply a lot of thought to those companies and cut the proposals down from 200 to something like six and 10 which they've actually thought about and personalised and targeted to the likely requirements of that particular company. So that is our philosophy. We make a very small number of approaches and do this in association with a company called CSS Promotions who have international links. They identify the possibilities which are discussed at length between myself and their Managing Director Steve Herrick." Once a possible sponsor is selected Thynne and Herrick then set about trying to identify the particular requirements of the company and arrange for some sort of warm approach rather than go cold calling. "The time from when we first think about it to the first approach maybe six months or even a year."

Why, though, should a sponsor be enticed into motor racing? It offers glamour, which might appeal to the individual, but when one is dealing with mega-bucks, there have to be hard commercial reasons. How does Thynne justify motor racing over a above any other sport?

"The core is the display on the drivers and the cars of the sponsors' name which is seen by a vast television audience over an eight or nine month period, and where there are previews and reviews, over an even longer stretch of time. And that is the advantage Formula One has over the Olympics and the World Cup which are the two other major international media events over the years; Grand Prix racing is every year and is at least 75% of the year, so it's a more enduring media coverage in all forms.

"That is the obvious side, but the percentage that is the total depends on whether the sponsor is a consumer company like Marlboro, Labatt's or Camel or whether it's a company which has different aspirations. For example when ICI joined us they were in the process of transforming a then loss-making subsidiary — ICI Fibres — in the early Eighties from a high-volume, low added value, low technology product company to a lower volume, higher added value, prestige fibre company. They used F1 over a period of time to bring initially fabric manufacturers and garment manufacturers, and then wholesalers and retailers, in groups of 100/150 to races and they usd the F1 surrounding to present them against a dynamic background. Apart from the change in the corporate style, it was also particularly useful to them in Europe where they were not as well known as they were in Britain and the rest of the world."

Having searched and then caught the sponsor to contribute to the overall running of the team, "we see ourselves as an engineering company whose end product is motor racing rather than a team," asserts Thynne, the next important job is to service that sponsor.

"We sometimes ask new sponsors 'how many races would you like us to win?' They look at us slack jawed and say 'all of them'. I ask the question," says Thynne, "because I want to explain to them that I think it's the wrong answer on their part. I think that one of the things a Formula One sponsor is selling is participation in a highly competitive activity, and if you win all the races, it clearly isn't highly competitive. If I was a Formula One sponsor I would want to secure the World Championship in the last race of the year which you probably could do by winning seven or eight of the 16 races. That is the ideal aspiration. Anything over and above that doesn't matter initially, but if it starts to get up to all the races, there are two adverse factors. One is boredom and less marginal viewers will watch it on television, and the other is that people will actually want you not to win. Both these are to be avoided. That is as competitive as I would want to be. We have been for most of the 10 or 12 years very much a front running team and that is all I'm selling to people, the capacity to run at the front of the field. I try very hard never to make promises to a sponsor which I don't believe in all honesty I can't deliver."

Having attracted a sponsor into the sport that is when the second part of the Thynne operation comes into play — servicing the sponsor and tailoring Williams and Formula One to suit the sponsor's marketing needs and providing on-track hospitality. It is not a question of supplying a few tables and chairs, a bit of food and drink and



Every part of the car's bodywork is used, every square inch worth thousands of pounds.

letting them get on with it, it is a highly structured endeavour whose slick operation should reflect on the sponsor whose guests should have had a memorable day out.

For such a day to be memorable, a driver should inevitably have played a part, which is not always the thing most on his mind on race day. "My main task," says Thynne, "is to try to provide the maximum benefit to the sponsor's guests with the minumum disruption of the drivers' concentration on being competitive in the race."

Typically the driver is presented to the guests at the lunch interval on race day. The guests are already sitting down before the meal with a presenter talking about practice, the circuit, the cars and the rivals so that the guests are warmed up before the driver appears at the presentation. When the driver walks in, the presenter will break off and welcome him. When the applause dies down, he will go straight into an interview with whichever driver it is so that he is, as Thynne described, "working and performing" within 30 seconds of his walking into the actual marquee. The presenter will ask half a dozen questions which are designed to enable the driver to say what he wants to say about his team-mate, his chances in the race, the other immediate competitors, make the odd joke etc whereafter the event will be thrown open to the floor to ask two or three questions. When that is over, which typically would be 10 or 12 minutes from when it starts, the presenter will say 'right, well Nigel now needs to go to do his immediate pre-race preparation. Don't ask him for autographs because we've given the team autograph cards to sign in advance and so you'll be given a pre-signed autograph card.'

"The reason for this states," Thynne, "is so that you don't get the driver besieged by people pushing aroud him which they don't really want on race morning, when the autograph is signed it is on the sponsor's branded card which acts as a reminder to the guest in the future about the hospitality, and the autograph is more representative of the signature if written beforehand and not under duress in

"It's fashionable to decry corporate hospitality, but I believe that it is an important part of what most sponsors do. I suppose that those who criticise it imagine that it's very disruptive for the drivers. We try to arrange it in such a way that the drivers' involvement is of maximum benefit to the sponsors with a minimum of disruption. We go to great lengths to ensure it's done like that." Indeed so structured and organised is the role of the sponsor and what is expected of them at race meetings that Williams have had a book printed which acts as a guideline. "We impose a sort of discipline on the sponsor, but it's in the best interests of everyone that we do so."

Most sponsors also provide their own co-ordinator, usually based in Europe, whose job it is is to liaise between the team and their own marketing, promotional and PR departments. "We try to thrash things out using the expertise of that company's promotional people and our own expertise in Formula One to try and put together ideas to market



their involvement in Grand Prix racing in a highly commercial manner. Competitions, dealer competitions, salesmen competitions, employee competitions, customer competitions involving race-oriented prizes, meeting the drivers, coming to the factory and presentations of Formula One to internal staff in in-house magazines so that the staff understand that the company's involvement is not a jolly for the senior management but is a carefully integrated part of the marketing ploy. One of the reasons why we like sponsors to bring VIP guests to see the factory and use our museum and conference centre is that we're proud of the fact that we are a business and we belive that it is in our interest, and in the sponsors' interest, to be seen to be associated with a highly competitive, high tech, capital intensive business as well as with a racing team and to realise that we are a serious company.

"We try and get as close as possible to the company's to understand their marketing aspirations and to advise and assist on how they can achieve them in a manner which varies from company to company. For example in Canada, where there isn't much understanding by the media of Formula One, Labatt's selected half a dozen key Canadian newspaper journalists, not motor racing journalists, who spent half an hour talking to me about what makes a F1 team tick and then half an hour talking to Nigel who they have difficulty in getting access to in the normal course of events. This was appropriate mileage for Labatt's at the Molson Grand Prix of Canada," Thynne says with a wry smile on his face.

When everything is laid out in black and white, it all looks so easy and obvious but it is amazing how many teams still manage to get it wrong. They may be adept at wooing a sponsor, but hopeless in keeping it. Thynne is relentless in his claims. "We are selling international media exposure, we are selling as association with technical excellence and we are selling an association with competitiveness around the world — and that is something of value to sponsors." And a word about the doubters, those who denigrate commercialism in the sport? "There is a popular misconception in various places in Formula One that sponsorship is in some way dirty and commercial. For my part, I began an interest in motor racing when, at the age of 10, the father of my head of dormitory at my prep school won the Le Mans 24 Hour race. I have been an enthusiast since that time, and that is quite compatible with doing a professional job in motor racing on the commercial side. It isn't full of up-front PR people who have no interest in, and no knowldge of, motor racing."

There speaks a committed man. WPK

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It's the British Grand Prix again and the question is — who is going to win, which of the dark horses are likely to edge into the top six, and will Brabham-Yamaha and Footwork-Porsche still be doomed to pre-qualifying?

Last year Alain Prost won his fourth Grand Prix of the season, and his third consecutive victory, at Silverstone while Ayrton Senna had to be content with third place. Runner-up spot went to Thierry Boutsen in the Williams-Renault, but it will take a miracle to see him achieve that place again this year since he has joined the uncompetitive Ligier team this year.

This year, of course, the form book would give Ayrton Senna shortest odds having already won the first four Grands Prix of the season, but the Ferraris and Williams-Renaults can never be discounted, particularly the latter after their showing in Canada. Can the Benettons sneak up the field again and can Tyrrell clinch a victory at last having been out of the winner's circle for so long. Neither team, though, will have been helped in their quest after each losing their chief technical men at a crucial stage.

Of the two favourites, Prost's race/win ratio remains unaltered from last year at 25.4%, but he has now been overtaken by Senna who has improved his ratio from 22.4% to 26.0%.

Senna, Prost, Mansell — McLaren, Ferrari, Williams — whatever the combination, it looks set to be a first class race again.

(Please note that the statistics are up to and include the 1991 Canadian Grand Prix.)

WPK







MCLAREN-HONDA

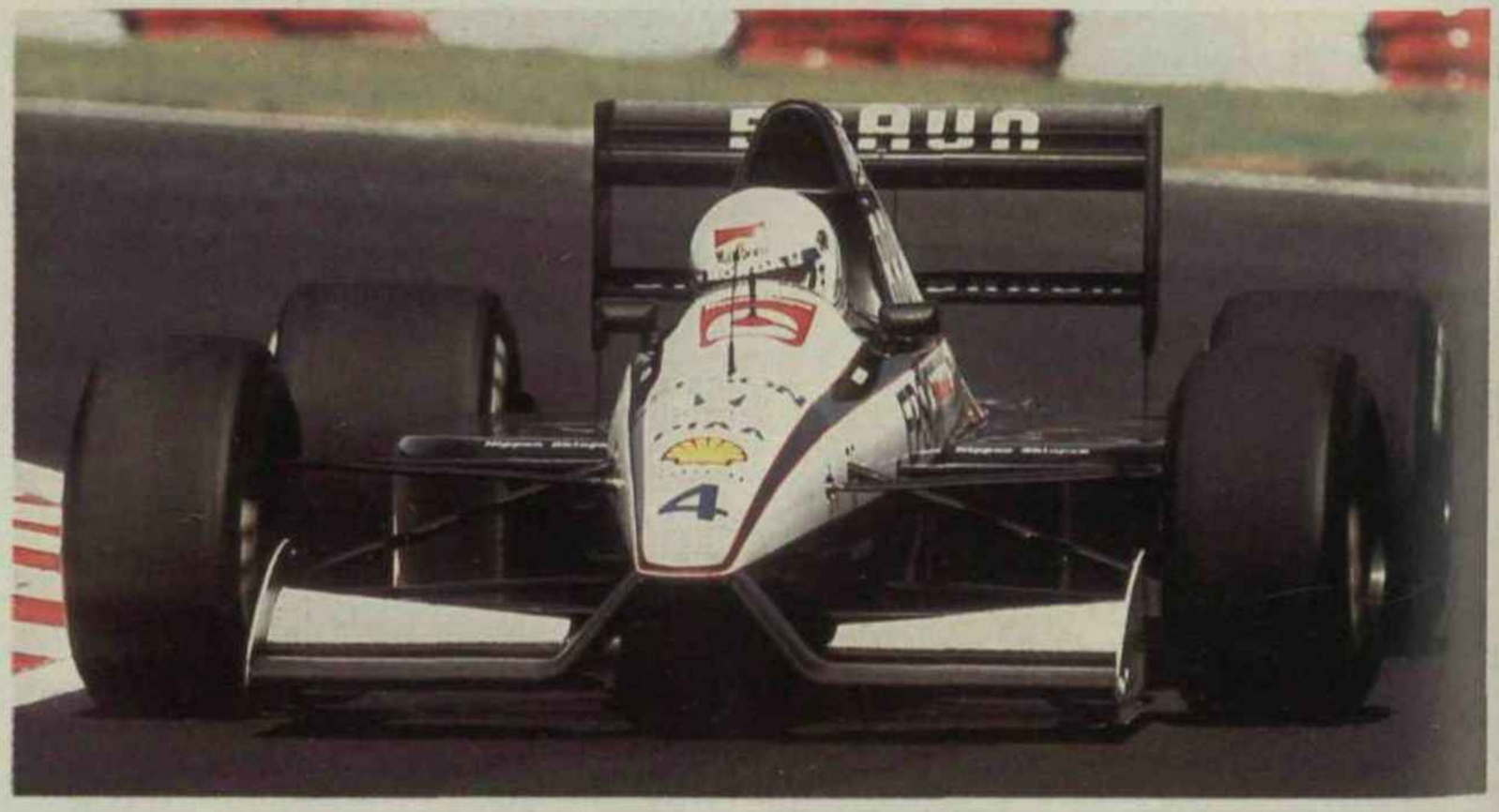
1. AYRTON SENNA. Born: 21.3.60. Brazilian. GPs: 115. Wins 30. Pole Positions: 56. Fastest Laps: 15. Points: 435. World Champion: 1988, 1990.

2. GERHARD BERGER. Born: 27.8.59. Austrian. GPs: 104. Wins: 5. Pole Positions: 6. Fastest Laps: 13. Points: 171.

Honda Marlboro McLaren: Chassis: McLaren MP4/6. Engine: Honda V12. Tyres: Goodyear. Wins: 90. Pole Positions: 71. Fastest Laps: 62. Points: 1601·5. World Championships: Drivers 8, Constructors 6.







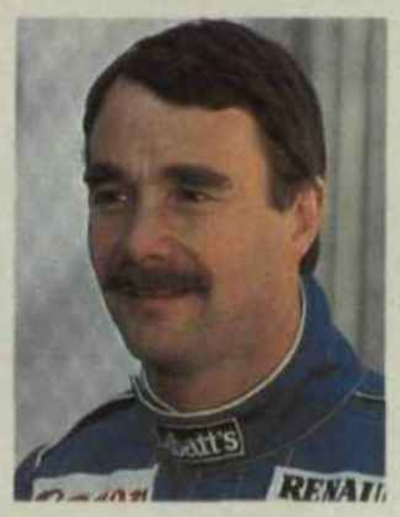
TYRRELL-HONDA

3. SATORU NAKAJIMA: Born: 23.2.53. Japanese. GPs: 63. Fastest Laps: 1. Points: 16.

4. STEFANO MODENA: Born: 12.5.63. Italian. GPs: 47. Points: 15.

Tyrrell Racing Organisation: Chassis: Tyrrell 020. Engine: Honda V10. Tyres: Pirelli. Wins: 23. Pole Positions: 14. Fastest Laps: 19. Points: 587.







WILLIAMS-RENAULT

5. NIGEL MANSELL. Born: 8.8.53. British. GPs: 154. Wins 16. Pole Positions: 15. Fastest Laps: 18. Points: 296.

6. RICCARDO PATRESE. Born: 17.4.54. Italian. GPs: 213. Wins 3. Pole Positions: 4. Fastest Laps: 8. Points: 162.

Williams GP Engineering: Chassis: Williams FW14. Engine: Renault V10. Tyres: Goodyear. Wins: 44. Pole Positions: 32. Fastest Laps: 48. Points: 937·5. World Championships: Drivers 3, Constructors 4.







BRABHAM-YAMAHA

7. MARTIN BRUNDLE. Born: 1.6.59. British. GPs: 73. Points: 14.

8. MARK BLUNDELL. Born: 8.4.66. British. GPs: 4. Points: 0.

Motor Racing Developments: Chassis: Brabham BT60Y. Engine: Yamaha V12. Tyres: Pirelli. Wins: 35. Pole Positions: 39. Fastest Laps: 41. Points: 861. World Championships: Drivers 4, Constructors 2.





FOOTWORK-PORSCHE

9. MICHELE ALBORETO. Born: 23.12.56. Italian. GPs: 147. Wins 5. Pole Positions: 2. Fastest Laps: 4. Points: 179·5.

10. ALESSANDRO CAFFI. Born: 18.3.64. Italian. GPs: 54. Points: 6.

Footwork: Chassis: Footwork FA12. Engine: Porsche V12. Tyres: Goodyear. Pole Positions: 0. Points: 0









LOTUS-JUDD

11. MIKA HAKKINEN. Born: 28.9.68. Finnish. GPs: 5. Points: 2.

12. JOHNNY HERBERT. Born: . B.. British. GPs: . Points:

Team Lotus: Chassis: Lotus 102B. Engine: Judd V8. Tyres: Goodyear. Wins: 79. Pole Positions: 107. Fastest Laps: 70. Points: 1343. World Championships: Drivers 6, Constructors 7.



FOMET-COSWORTH

14. OLIVIER GROUILLARD. Born: 2.9.58. French. GPs: 21. Points: 1.

Fomet Spa: Chassis: Fomet 191. Engine: Cosworth DFR V8. Tyres: Pirelli. Points: 5.









LEYTON HOUSE-ILMOR

15. MAURICIO GUGELMIN. Born: 20.4.63. Brazilian. GPs: 47. Fastest Laps: 1. Points: 10.

16. IVAN CAPELLI. Born: 24.5.63. Italian. GPs: 69. Points: 27.

Leyton House Racing: Chassis: Leyton House CG911. Engine: Ilmor V10. Tyres: Goodyear. Points: 7.





AGS-COSWORTH

17. GABRIELE TARQUINI. Born: 2.3.62. Italian. GPs: 22. Points: 1.

18. FABRIZIO BARBAZZA. Born: 2.4.63. Italian. GPs: 0. Points: 0.

Equipe AGS: Chassis: AGS JH25. Engine: Cosworth DFR V8. Tyres: Goodyear. Points: 2.









CAMEL BENETTON-COSWORTH

19. ROBERTO MORENO. Born: 11.2.59. Brazilian. GPs: 15. Points: 10.

20. NELSON PIQUET. Born: 17.8.52. Brazilian. GPs: 193. Wins: 23. Pole Positions: 24. Fastest Laps: 23. Points: 475. World Champion: 1981, 1983, 1987.

Benetton Formula: Chassis: Benetton B191. Engine: Cosworth V8 EXP. Tyres: Goodyear. Wins: 5. Pole Positions: 3. Fastest Laps: 8. Points: 196.





DALLARA-JUDD

21. EMANUELE PIRRO. Born: 12.1.62. Italian. GPs: 27. Points: 3.

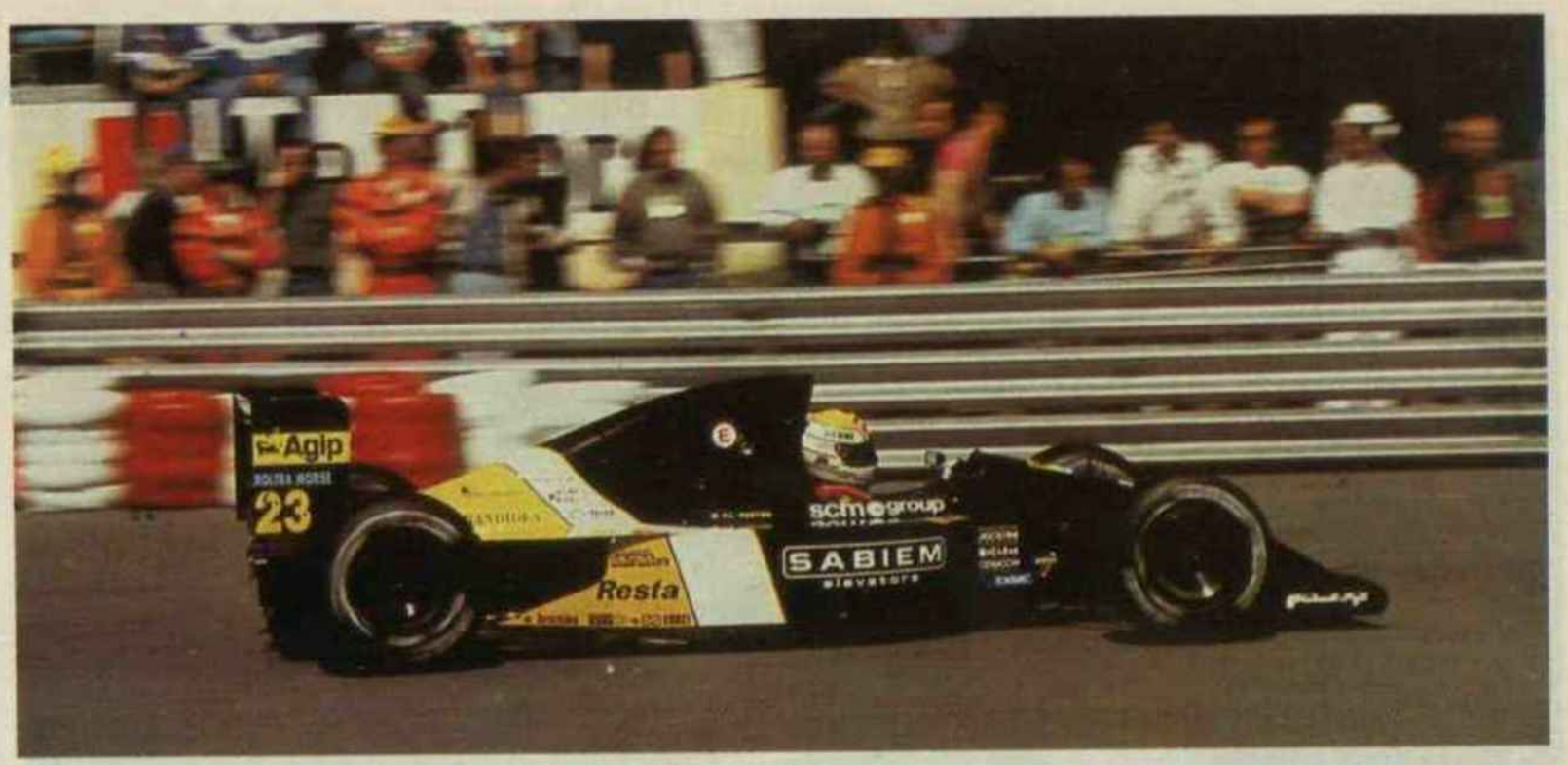
22. JJ LEHTO. Born: 31.1.66. Finnish. GPs: 12. Points: 4.

Scuderia Italia: Chassis: Dallara BMS 191. Engine: Judd V10. Tyres: Pirelli. Points: 13.









MINARDI-FERRARI

23. PIERLUIGI MARTINI. Born: 23.4.61. Italian. GPs: 59. Points: 9.

24. GIANNI MORBIDELLI. Born: 13.1.68. Italian. GPs: 8. Points: 0.

SCM Minardi: Chassis: Minardi M191. Engine: Ferrari V12. Tyres: Pirelli. Points: 10.







LIGIER-LAMBORGHINI

25. THIERRY BOUTSEN. Born: 13.7.57. Belgian. GPs: 126. Wins: 3. Pole Positions: 1. Fastest Laps: 1. Points: 130.

26. ERICK COMAS. Born: 28.9.63. French. GPs: 4. Points: 0.

Ligier Gitanes: Chassis: Ligier JS35. Engine: Lamborghini V12. Tyres: Goodyear. Wins: 8. Pole Positions: 9. Fastest Laps: 11. Points: 307.







FERRARI

27. ALAIN PROST. Born: 24.2.55. French. GPs: 173. Wins 44. Pole Positions: 20. Fastest Laps: 35. Points: 676·5. World Champion: 1985, 1986, 1989.

28. JEAN ALESI. Born: 11.6.64. French. GPs: 28. Fastest Laps: 1. Points: 26.

Ferrari Spa: Chassis: Ferrari F1/91. Engine: Ferrari V12. Tyres: Goodyear. Wins: 103. Pole Positions: 110. Fastest Laps: 118. Points: 1691. World Championships: Drivers 9, Constructors 8.







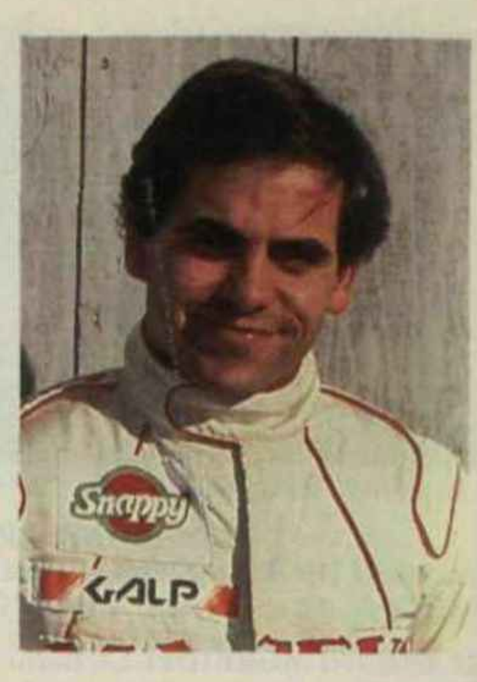
LOLA-COSWORTH

29. ERIC BERNARD. Born: 26.8.64. French. GPs: 23. Points: 5.

30. AGURI SUZUKI. Born: 8.9.60. Japanese. GPs: 20. Points: 7.

Larrousse: Chassis: Lola L91. Engine: Cosworth DFX V8. Tyres: Goodyear. Points: 14.





COLONI-COSWORTH

31. PEDRO CHAVES. Born: 27.2.65. Portuguese. GPs: 0. Points: 0.

Coloni Racing SRL: Chassis: Coloni C4. Engine: Cosworth DFR V8. Tyres: Goodyear. Points: 0.





JORDAN-COSWORTH

32. BERTRAND GACHOT. Born: 22.12.62. Belgian. GPs: 10. Points: 2.

33. ANDREA DE CESARIS. Born: 31.5.59. Italian. GPs: 154. Pole Positions: 1. Fastest Laps: 1. Points: 41.

Eddie Jordan Racing: Chassis: Jordan 191. Engine: Cosworth HB V8. Tyres: Goodyear. Points: 5.









LAMBORGHINI

34. NICOLA LARINI. Born: 19.3.64. Italian. GPs: 36. Points: 0.

35. ERIC VAN DE POELE. Born: 30.9.61. Belgian. GPs: 1. Points: 0.

Central Park Modena Team: Chassis: Lambo 2. Engine: Lamborghini V12. Tyres: Goodyear. Points: 0.

GOODYEAR

Reliability and Precision

Which country has made the greatest contribution to the development of the high-performance or racing automobile? France? Great Britain? Italy? Germany? There is no single, certain answer; any of these countries might qualify. But one could also make a strong case for Switzerland even though very few cars of any type have ever been made there. From the first years of this century, Swiss engineers, generally working abroad, have displayed a singular genius and remarkable aptitude in the art of automotive design.

The Geneva born engineer, Ernest Henry, set the pattern for all high-performance motors down to the present day with his DOHC 16-valve Peugeot design. And another Swiss, Alfred Buchi, invented the turbo-supercharger. The modern sports car can be traced back to the Alfonso X111 Hispano-Suiza design of Marc Birkigt, and another outstanding Swiss engineer, George Roesch, continued development of the sports car line with his Talbot designs of the late 1920s and early 1930s.

In more recent times, Swiss born and trained automotive engineers have continued to show their skills. The H(igh) E(fficiency) cylinder heads found on Jaguar V12 engines were invented by Michael May, a native of Zurich, and he was also probably the first to mount a wing on a racing car in order to get downforce. And today, another engineer of Swiss origin, Mario Illien, is beginning to make his mark on the racing world. Along with partner Paul Morgan, he founded Ilmor Engineering, the company which designed and makes the immensely successful Indy/CART engines that carry the nameplate of Chevrolet, a firm founded by Swiss born engineers.

Now in his early forties, Illien studied engineering at Biel before going to work at Mowag, a diesel engine and heavy vehicle manufacturer. He became involved in motor racing through working with the late Grand Prix driver, Jo Bonnier, for whom he designed a 16-valve cylinder head for the Chrysler/ROC Formula 2 engine. In 1979, Illien moved on to Cosworth where his skills were honed chiefly on the DFY Formula One motor and the Sierra 16-valve engine. Paul Morgan was already at Cosworth having come to the Northamptonshire firm in the early 1970s after graduating from Aston University. Morgan worked on various projects at Cosworth, including the 24-valve 3.4-litre Capri V6 and the two-cylinder 750cc Norton motorcycle engine. Of greater importance for the future was Morgan's early involvement in Cosworth's programme to turbocharge a 2.65-litre of the DFV for Indy/CART racing.

While at Cosworth, Illien and Morgan became friends through a shared interest in racing engine design and manufacture. They also had in common the ambition of wishing to start their own company. From frequent visits to America, Morgan knew there was a market for a new engine specifically designed for Indy/CART racing. To get an Indy/CART engine project (and their prospective company) off the ground, Morgan and Illien recognized that they would need a sponsor and turned to Roger Penske for support. For over thirty years, Penske's successful involvement in racing in America has been characterized by two features. First of all, his cars usually have had some — often technical — advantage over the competition; and, secondly, from the days of the Zerex special, he has been quick to recognize and exploit opportunities of both a racing and commercial nature.

Morgan and Illien made their approach at just the right time. By 1982, almost all Indy/CART racing cars were powered by the Cosworth DFX. Though a superb engine, the DFX basically was a modifi



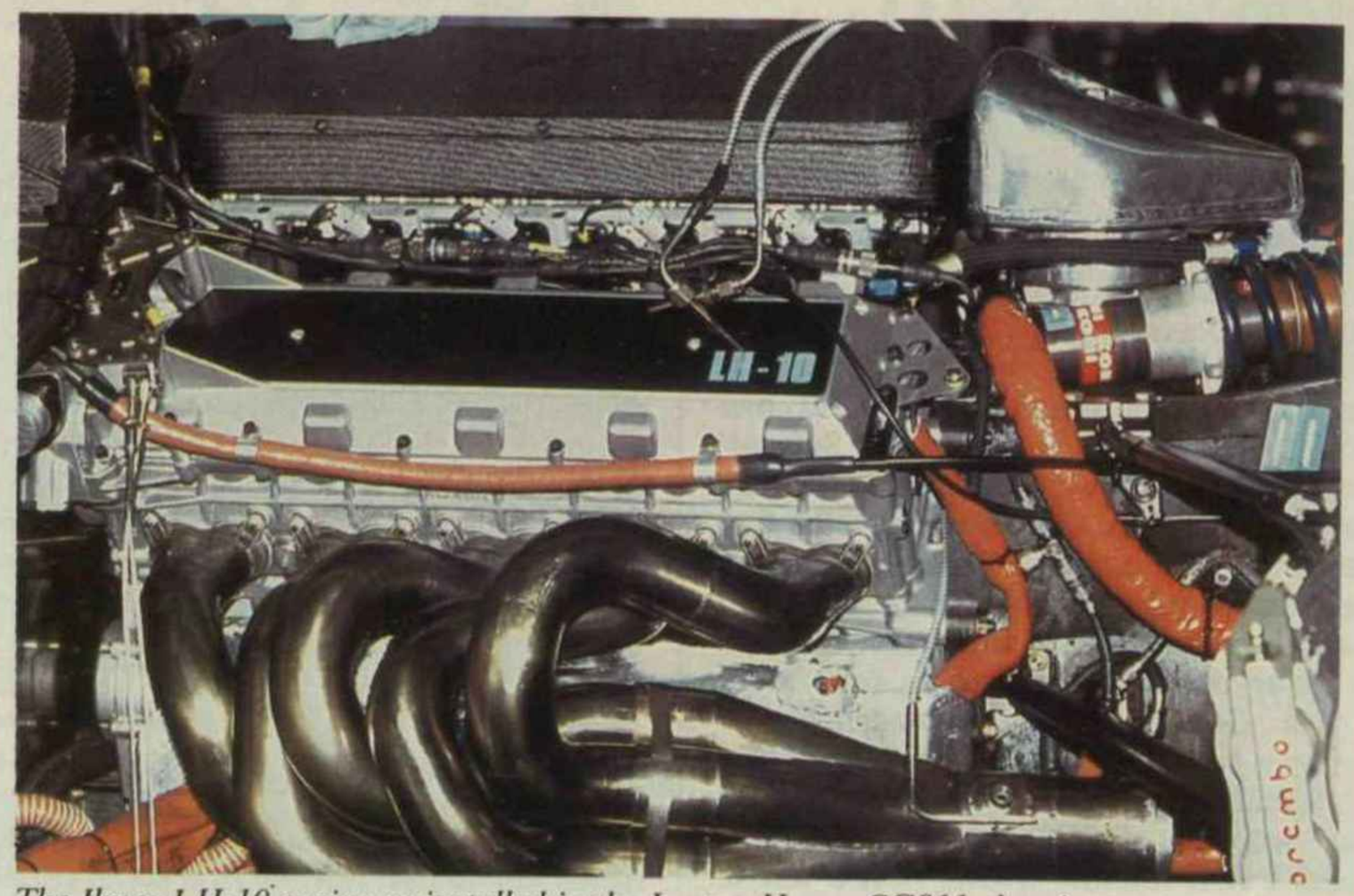
The Leyton House team has pinned its hopes on the new Ilmor engine this year but it has still to prove itself as good as the Indy/CART engine.

cation of a design that was almost twenty years old. Secondly, at that time, American racing authorities wished to promote competition; they were prepared to freeze development of the DFX which would give potential new engines a chance to become established. Penske could see the advantages of a new engine using the latest technology and designed from the outset specifically for CART/Indy racing. A new engine could be smaller and lighter than the DFX and, hopefully, more powerful as well. He agreed to finance development and find long-term sponsorship for the project. After resigning from Cosworth, Illien and Morgan set up Ilmor Engineering Limited. They started with a small but very well-equipped factory on a new industrial estate in Brixworth, a village a few miles north of Northampton.

Ilmor's first product was the compact (569mm long) 265A Indy/CART engine, a four-cam 90° V8 of 2.65-litres (88mm x 54.4mm). Like almost all racing engines these days, each cylinder has a central spark plug and four valves, the latter being set at the relatively narrow included angle of 24°. Naturally, the 265A appeared similar to Cosworth's DFX and DFY, and the churlish or jealous went on to suggest that Ilmor's engine was little more than a Cosworth by another name. In fact, the 265A is very different and more original than one might expect, and Illien and Morgan have many admirers amongst the engineering fraternity. Features like the camshaft drive mechanism and the crankcase/oil scavenging system have been praised and copied. Ilmor's critics might also have remembered that Illien is of Swiss origin and that the long and continuing success of Switzerland's leading industry is due in part to the ability of Swiss *etablisseurs* to learn quickly by imitation and adaption and yet still be capable of real innovation.

Development during the first year or so was focused on sorting out teething troubles of the 265A which were mainly related to crankshaft balance. Early versions of the engine were red-lined at 11,400 rpm, though it had been stressed at the design stage to run more than 12,600 rpm. Peak power is now about 720 bhp, and from the first the 265A has never been short of power. Over the years, the engine has been improved mainly through the use of better materials and higher quality in manufacturing. As a result of such changes, the rate of failure during races has been reduced to less than 5%, a very low figure by any standard.

The engine won its first race in 1987, and since then the company has never looked back, winning championship after championship. So far this year, Ilmor's engine has won every race on the CART circuit, including the Indianapolis 500 where the top five cars were powered by Ilmor engines. The 265A has not only superseded the once dominant Cosworth DFX/DFS: it has seen off a very serious threat from Porsche, a far larger and more experienced company, and to date has not been greatly troubled by the Alfa Romeo



The Ilmor LH-10 engine as installed in the Leyton House CG911 chassis.

challenge, another firm with more racing experience and far greater resources.

How does one account for such extraordinary success? Good timing, good engineering, and good manufacturing practice are the answers. The first might be fortuitous, but the last two derive directly from the design and manufacturing experience and philosophy of Illien and Morgan. The qualitative approach to manufacture is most evident in the facilities which the company's founders have created. The Brixworth works seems more like a fabrique of the Jura or some aerospace factory than the traditional machine shop of the Midlands. Metal shavings do not lie about, nor does oil stain the floor; tool-proud craftsmen see that work is done well and neatly. The factory is also unusually quiet. People go about their business in an orderly, measured way with industriousness and tranquillity somehow combined. Everything seems to run, dare one use the simile, like clockwork.

The distinctive Ilmor philosophy is evident in the factory building itself. It was designed to Illien and Morgan's specifications and reveals something of the personalities of the men who created the company. Like other, similar engine R & D firms, there are the usual fully-instrumented test-beds, but these test-beds are different; they perform two functions. Ilmor's dynamometers provide information on engines in the normal way. However, in the course of test runs a considerable amount of heat is produced. Usually this heat is vented to the atmosphere. Not so at Ilmor; waste heat is used to warm the factory building. A single engine running for a few hours on the test-bed produces enough waste heat to keep Ilmor's facilities at a comfortable temperature for an entire day. Economy. Efficiency. Intelligence. Responsibility.

One also sees at Ilmor other values usually associated with the Swiss: diligence and commitment and a work ethic that is both personal and collective. Reliability and precision in manufacture are much prized by the Swiss and given similar regard at Ilmor. The machine tools and test instruments of the firm give evidence of an overriding concern with quality. As a matter of policy, all machine tools are purchased from new and are the best



Rick Mears continued Ilmor's success in Indy/CART racing with a win in this year's Indy 500.

GOODYEAR

that money can buy (some cost £250,000 or more). Second-hand or re-conditioned machine tools can be acquired for much less, but used machinery may be worn and wear can lead to inaccurately made parts, and inaccurately made parts may cause engine failure. This year, even the machine shops will be air-conditioned so that all machining can be done at constant temperature, thereby ensuring that tolerances will be even tighter and more consistent.

Major castings like blocks and heads still come from outside suppliers, as do the forgings. As a general principle, too heavy a reliance on outside suppliers can be risky. Problems of communication and lack of direct control can result in the occasional flawed or defective component. Secondly, racing engine manufacturers require short lead times; new parts are needed in days and not months, as is customary in the foundry and forging business. Orders from racing engine companies are usually small, both in numbers and value, but racing demands components of the highest quality. Morgan deals with these potential problems by selecting sub-contractors carefully. In particular, he looks for relatively small firms able to recognize that there are long-term and indirect gains from involvement in a high technology project, even though initial orders from Ilmor may not be numerous or exceptionally lucrative. Sub-contractors have found working for Ilmor attractive for it is company policy that invoices are paid promptly, a practice which ensures good service in the future.

According to Morgan, who looks after the production engineering side of the business at Ilmor, metal heat treatments are another potential problem and a major cause of engine failure. Firms like Ilmor need large and sophisticated quality control sections to monitor treated or bought-in parts. In the end, the most effective way to guarantee quality is to do the work on premises, though that course may not always be economical. At Ilmor, more and more work is being brought in-house. For example, even the electrical looms are now made at Brixworth as well as being checked on special machinery after manufacture and then later at the race track.

Until this year, the company has had only one product, but now Ilmor have made a second racing engine, the LH10, which took about 18 months to develop from the initial concept stage through to its first test run in a Leyton House Grand Prix car. The LH-10 is a 72° V10 engine of 3.5 litres capacity. The main engine castings are made of heat-treated aluminium alloy. The crankshaft and connecting rods are machined from an alloy steel. The deep-sided block has six main bearings of plain metal type and the four camshafts (two per bank) are driven by a train of spur gears off the front of the engine. The position of this gear train marks a departure for Ilmor. The cams on the 265A were driven from the rear of the crankshaft, as they are on the Honda and Judd V10s.

So far, few figures relating to the new engine have been released by the company, except overall length and weight. The LH-10 is only 593.5mm long which makes it the shortest multi-cylinder engine in Formula One. Even the V8 Cosworth Ford HB engine (595mm) is slightly longer, and only the older Judd V8 is shorter. Compactness in general was one of the main design criteria, and the overall envelope of the engine is probably the smallest of any Grand Prix engine. The engine looks extremely narrow, in part because the cam covers are only a few inches across. It is also a light engine, weighing approximately 122kg. Weight discipline was pursued rigorously throughout the design process. Illien takes delight in reminding his partner that the final product has turned out to be within one kilogram of the calculated design weight.



Mario Illien and Paul Morgan, founders of Ilmor Engineering.

In talking about the LH-10, Illien indicates that no single factor has been allowed to dominate the design process. The engine has been seen as a whole; size, weight, horsepower, torque, fuel economy, reliability, etc, have all been kept in balance from the first, conceptual stage and throughout later detailed design phases. The piston engine has been around for a hundred years, as Illien observes, and most improvements these days now come from attention to detail and from reducing internal losses. The latter assume greater importance as engine speeds go up. As rpm increases, the law of diminishing returns becomes apparent; an ever-greater proportion of power is lost to friction, oil drag, and pumping until any potential power gain from higher speed is cancelled out. Ultimately, as Illien admits, any formula based on cylinder capacity will result in an emphasis on high engine speed, and the LH-10 has been designed for high rpm. It is already running to 13,400 rpm and more may be expected. But as Illien and Morgan state, it is relatively easy to make a high-revving engine, but what really matters in racing is the amount of power available throughout the rpm band used by drivers and not that produced only at peak rpm.

Basically there are two ways of achieving power, though a surplus of one will not make up for a surfeit of the other. Some engineers seek high power through deep breathing by using broad bores, short strokes, and maximum valve opening area. Others put more emphasis on maximizing the efficiency of the porting and combustion. Judged by the 265A and from what can be learned of the new LH-10, it appears that Ilmor lean toward the



One of the smallest engines in Formula 1 despite the V10 configuration.

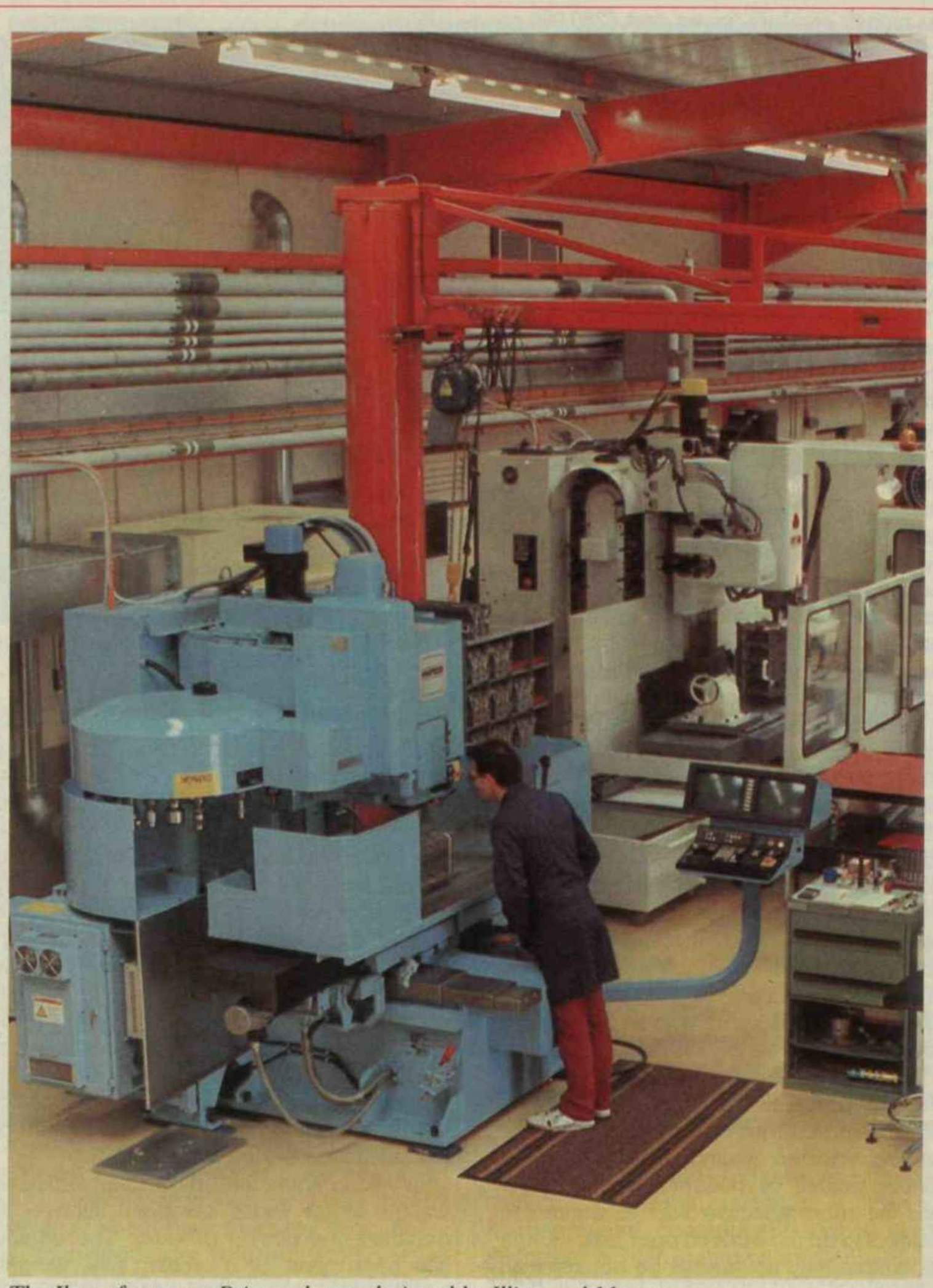
latter design philosophy. A range of information including the most obvious the shortness of the engine, indicates that piston area has not been a primary objective. The cylinders of the LH-10 are probably 90mm or less in diameter. Secondly, the narrowness of cylinder heads suggests that maximum valve area has also not been a design objective. Instead, effort has been directed more toward increasing flow through available valve opening area, and much attention has been paid to piston and combustion chamber shape. Illien has designed an exceptionally compact chamber of regular shape so that the fuel/air mixture will ignite easily and the flame front travel quickly and uniformly across the chamber. A compression ratio of between 12.1 and 13.1 is used.

Because the heads are narrow, it has been suggested that the LH-10 has absolutely vertical valves as were used on the 3-litre V12 Maserati engine of circa 1967 or on the Rolls-Royce Merlin aero-engine whose four valves per cylinder were parallel. Illien expresses considerable admiration for the Merlin design, though Morgan suggests (with tongue in cheek) that it had one defect — two cylinders too many. Heron head designs may appear attractive, but as Illien notes, piston weights are usually higher with such a layout. So the four valves of the LH-10 are presumably placed at an extremely narrow included angle (16-18° at a guess) with the combustion chamber comprising of the space in the head between the valve faces and the low crown pistons into which indentations for valve clearance have been carefully blended.

Like its predecessor, the LH-10 has been financed by Roger Penske, at least through the initial development stage, though it is expected that a sponsor will fund it over the long term. The experience of Indy/CART racing has made Ilmor wary of expecting instant success from their new Grand Prix engine, most brand new engines have some teething troubles. Early running of the LH-10 has shown minor problems, but these the company hope to rectify by mid-season.

Will the LH-10 be successful? The exceptional lightness and compactness of the engine should give a chassis designer some advantage, but at this stage it is too early to say whether the Ilmor will prove competitive in terms of power and reliability. Considering the quality and depth of competition in Formula One these days, it is too much to anticipate early victories or the sort of domination achieved by the 265A in CART/Indy racing. Illien and Morgan are aware of the tough nature of Formula One. Indeed, the need to meet the competition has led Illien, as he admits, to take more risks with the LH-10 than he did when designing the V8 Indy/CART engine. Ilmor hope the LH-10 will soon achieve reliability; then incremental development can concentrate on increasing the power of the unit.

Ilmor's task will not be easy, for it is not a large firm with unlimited resources. Currently, about 109 employees are on the pay roll. Inventive and skilled staff are not a problem; nor is quality of manufacture. Ilmor is well endowed in these departments. But independent firms, like Ilmor, are at a disadvantage, compared to much larger companies like Honda, Ferrari/Fiat, Renault, etc, in that they do not have the scientists or technicians, the laboratory facilities, and the money to undertake extensive basic research and development, particularly in the area of materials and electronics. A firm like Ilmor must often work with what is currently and commercially available from its suppliers.



The Ilmor factory at Brixworth was designed by Illien and Morgan.

To a lesser degree, this is true in areas like computer-aided design. Only the major automotive manufacturers have the supercomputers and software needed to apply computational fluid dynamics to optimise gas flows and combustion chamber design. A firm like Ilmor is not equipped to undertake research programmes of that sort to improve its engines. Instead, Ilmor must make maximum use of its most valuable resource; the intelligence and experience of the designers. A few minutes of careful cogitation may provide more useful answers than hours of costly computer analysis.

Everything one sees about Ilmor suggests care and thoughtfulness, not simply in how an engine is designed and made but also in the way the firm operates. Like any good partnership, Illien and Morgan work together. They are able to communicate easily, both are qualified engineers, and are able to trust each other's judgement. Each has assumed special areas of responsibility. Illien takes the lead on design while Morgan oversees the manufacturing side. Work on the factory floor progresses in an orderly, though energetic way. Ilmor Engineering may be located in Northamptonshire and the workforce is overwhelmingly British, but from the seriousness and sense of purpose that one sees in the company, one might think it a Swiss establishment. And as in the Swiss watchmaking industry, there is at Ilmor a similar, deep commitment from top to bottom to see that the company makes the best in the world.

DDH

GOODYEAR

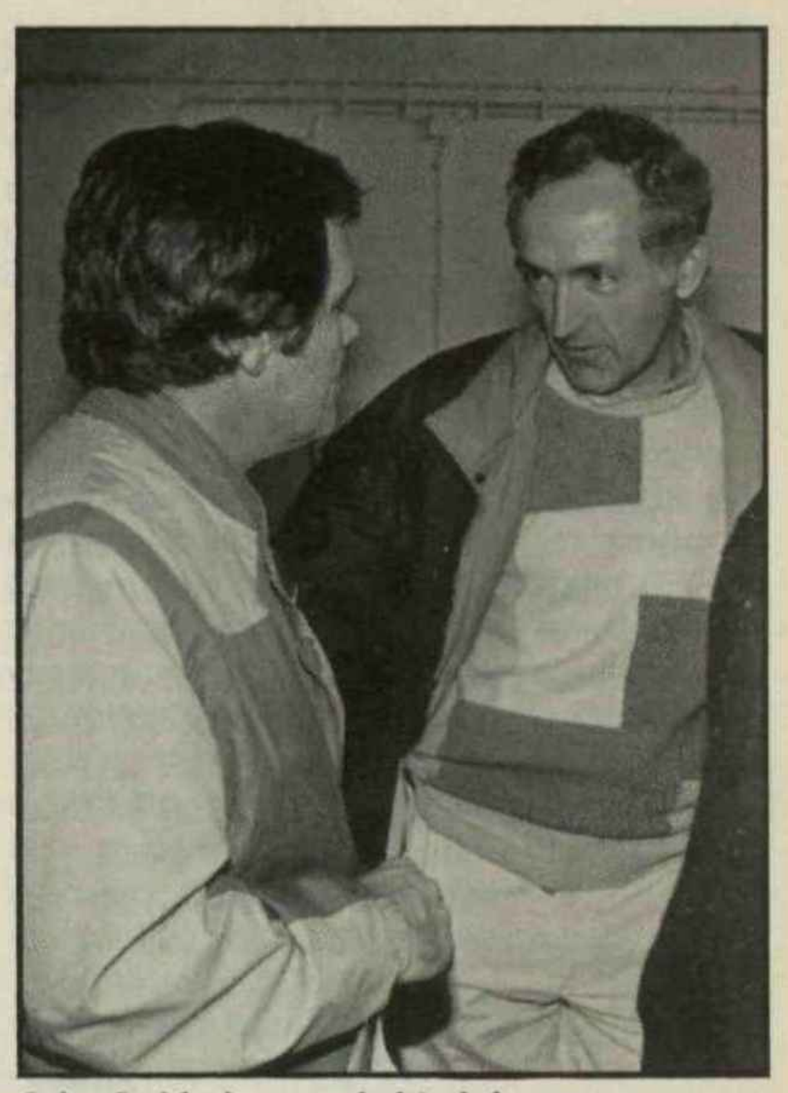
At the Heart

Engine Developments Limited is the racing engine manufacturing company of John Judd, and, like many first generation firms, the imprint of the founder is very much present on the company and its products. John Judd is an Englishman, and few firms are more English in character than Engine Developments. The products of the firm also display English virtues: Judd's engines embody years of racing experience and his approach to design is empirical: proven features and methods take precedence over theory when Judd sets out to make a new racing engine.

John Judd is also a very happy man these days — and with good reason. He is doing exactly what he wants to do, ie, making top class, straight racing engines, and these engines have been performing extremely well, both in Grand Prix racing and on the CART/Indy circuit. At the San Marino GP this year, for example, Judd engines filled three of the first six places. He also has a modern, spacious (15,000 sq ft) new factory — twice the size of his old premises — a few miles outside Rugby and a new V10 called the GV, which has shown considerable promise from the very first.

Indeed, the first test run of the GV tells you as much about the man as about the engine he has built. By chance, when this engine was put on the test-stand for the very first time, some engineers from Toyota appeared unannounced at the factory. The Japanese team have slowly been developing a V10 of their own for Group C racing. With characteristic openness, Judd greeted his visitors and invited them to accompany him to the control panel while he brought to life his latest creation. In most firms a wall of secrecy would have descended at the very approach of engineers from a potentially rival company.

Normally the first few test runs of a racing engine are fraught with difficulty. Numerous adjustments have to be made to get an engine to run at all, let alone smoothly or at power. Consequently, new engines are run cautiously and at slow speeds during early tests; only gradually are rpm increased over a series of tests. The test run of the GV started off this way; John took it up to about 4000 rpm. All seemed well, so he pulled the throttle lever back a bit more; 4500 then 5000; then 6, 7, 8, 9, 10,000 rpm. After reaching 11,500 rpm, he paused a moment. A somewhat alien sense of caution began to intrude, though his face displayed a characteristic grin, and he let the GV wind down slowly to idle speed, leaving visitors muttering in disbelief that this really could be the first test run of Judd's V10.



John Judd, the man behind the name.

John Judd is a Midlander; both man and place are at the heart of the British motor engineering industry. Engineering is in his blood. His grandfather was a toolmaker and his father a production engineer and works manager. After school in Coventry, where he achieved eight O-levels, he began an apprenticeship at Coventry Climax, a manufacturer of fire pump motors, but, more importantly during the



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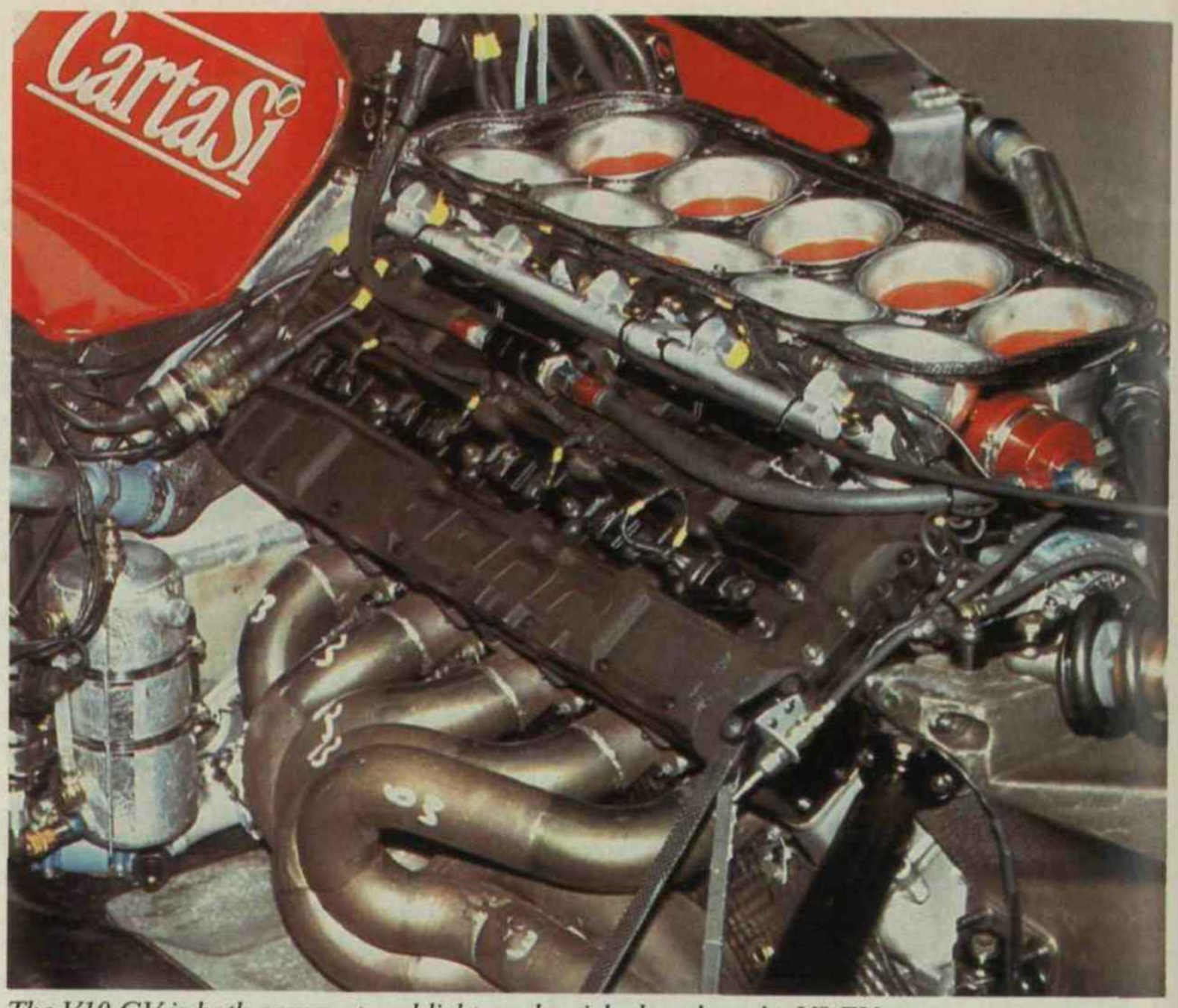
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late Fifties and early Sixties, a maker of Grand Prix engines as well. After Climax quit racing in 1965, Judd went to work for World Champion Sir Jack Brabham on his Repco engine project. During the first two years of the 3-litre formula, the Repco engine was very successful; Brabham and partner Dennis Hulme won two World Championships in succession, but later developments of the engine were not sufficiently powerful or reliable enough to compete with the all-conquering Cosworth DFV. Nevertheless, this experience would be useful to Judd; if Coventry Climax may be seen as John Judd's first university degree in racing engine development, then the Brabham/Repco days were a valuable post-graduate course. Not only did he learn about racing engine design and development, he made useful contacts during these years which later on were to help him.

In 1970 John and his father set up Engine Developments in new premises in Rugby. Through Jack Brabham, the firm secured a contract from Ford Australia for the design of a new cylinder head. This commission was worth about £20,000, not much these days, but just enough to keep the firm in business. Thereafter, most work came from the sale of Formula Super Vee and later Formula Three engines based on VW motors. Judd also began rebuilding Cosworth DFV engines for, amongst others, Amon, Token, Shadow, Surtees, Lotus, Tyrrell, Ensign, Arrows, and the Williams team. For Williams, Judd also undertook further development of the DFV engine. Eventually these specials produced 20-30 bhp more than stock units and were used by Keke Rosberg to win the World Championship in 1982.

The Brabham connection and this familiarity with DFVs led to the next step in Judd's career. At the end of the 1970s, Honda started to think about returning to international racing. For over ten years the Japanese engineers had been busy with work on production cars and consequently felt the need to catch up on the latest in racing engine technology before building their own engines. They had worked successfully with Sir Jack Brabham in the early 1960s, so turned to him for advice. Brabham recommended Honda to get in touch with John Judd whose broad experience in Formula One racing in the 1970s had put him in the forefront of engine development.



The V10 GV is both compact and light, and weighs less than the V8 EV.

Honda did not return straightaway at the top level of racing but cautiously began by entering Formula Two with a 2-litre V6 engine. Judd not only assisted them in its development but also made his company's facilities available as Honda's European base.

As a next step the Japanese company intended to develop jointly with Judd an engine for CART/Indy racing. Work had already commenced on this project when the racing priorities of Honda changed, and they decided to drop the Indy engine project in favour of the development of a 1.5-litre turbo-supercharged engine for Grand Prix racing. In recognition of the help given by Judd on the F2 engine, however, Honda let Engine Developments continue the V8 engine project on its own.

At this juncture, Judd was already involved in Indy/CART racing rebuilding Cosworth DFX engines. This work provided the company with a practical experience of turbos and with a knowledge of what would be required of an engine suitable for Indy/CART racing. With Judd's expanding engineering staff, included Neil Walker formerly of BRM, a 2.65-litre engine was developed and put into production. Initially this engine carried the name Brabham Honda, but it was not long before they came out of the Rugby factory with Judd's name on the cam covers. It was the first complete engine made by Engine Developments Limited.

In the nomenclature of the company, this motor is referred to as the Judd AV. It is a four-cam 90° V8 with a bore of 92mm and a stroke of 49.7mm; currently it produces between 710 and 720 bhp. So far, 49 AV engines have been built, in several versions, and another five are being constructed this year. The revitalised Truesports team are relying on the latest AVs for



The latest Judd engine, the V10 GV, is being exclusively used by Dallara this year.

GOODYEAR



A number of teams are using the V8 AV engine in the CART series this year,including Truesports.

their new cars which are being driven by Scott Pruett and Geoff Brabham. The Lolas of Scott Goodyear, Ted Pappas, and Dominic Dobson are also using Judd engines on the American circuits in 1991.

Early season results have given the Rugby firm reason to be pleased. In most races so far, Judd-powered cars have qualified near the front of the grid, and there have been several finishes in the top six, a very considerable accomplishment since most of the big-name teams/drivers are using Chevrolets.

With the AV as a basis, Judd early on began to develop (initially for Honda) a 3-litre engine for use in Formula 3000. This new engine was logically called the BV, and it was successful almost immediately winning the third race it entered at Pau in 1986. The configuration is the same and the same basic castings are used for both AV and BV. The Formula 3000 engine also has the same bore, but the stroke was enlarged to 56.4mm to bring it up to capacity. The BV is a naturally aspirated engine designed to operate on pump petrol. To date about 30 BV engines have been made.

1988 was an important year in the history of Engine Developments Limited for it was then that the company built its first Grand Prix engine. Designated the Judd CV, this engine initially performed well in the cars of the Williams team, even though it was up against far more powerful turbo-engined cars still eligible that year. The CV was based on the company's earlier designs, but the bore and stroke were enlarged to 94mm x 63mm. Early versions produced between 595 and 605 bhp. Minor changes in the following year brought maximum power up to 610/615 bhp. When production of the CV ended, 63 of these engines had been built.

The CV was followed naturally enough by the DV. This was a 90° V8 like its predecessors, but in fact it was a completely new engine with wider cylinder spacing; it had only a few parts in common with preceding Judd V8s. Only one example of the DV was built before it was rapidly superseded by the EV which is essentially a narrow angle (76°) version of the earlier engine. Both the DV and the EV are highly oversquare engines having bore and stroke dimensions of approximately 99mm x 56.75mm. As well as being a compact unit the EV is commendably light, weighing no more than 127 kg. The EV produces 620+ horsepower on standard fuel with a rev limit of 12,500 rpm. So far 38 EV engines have been built. Last year it was used exclusively by Leyton House. This year Lotus have been using an updated version of the unit in their type 102B car. Thus far, the Lotus/Judd combination has achieved considerably more than some other teams have managed with allegedly more powerful V10 or V12 engines. Both Mika Hakkinen and Julian Bailey have put their cars in the points.

After the EV had been put into production, Judd felt that the V8 line of Grand Prix engines was reaching the end of its development potential. The company's engineers recognized that more power would be needed to compete in Formula One and decided to start with a clean sheet of paper. The result is the GV, currently being raced by Dallara. In case you are wondering, there was an FV project, but the name was not used for the new Grand Prix engine mainly because it sounded too much like DFV, a Cosworth designation. The new GV is a V10 engine with the cylinder banks set at an angle of 72°. Major components like the block and head of the engine are cast in aluminium alloy by Kent Aerospace. Most machining, however, is done in-house at Judd's new Rugby plant. As on the Honda V10, the camshaft drive of the GV is at the back, but accessories, like oil scavenging pumps, are driven from the front of the crankshaft. The 3.5-litre GV is a compact engine (length: 624mm; width: 555mm; height: 420mm, exclusive of inlet trumpets) and a very light one as well; it weighs only 124 kg, is 3 kg less than the EV, even though it has two more cylinders!

In general design terms, it follows the Judd philosophy of seeking power through generous bore size for high rpm and relatively large valves for deep breathing. Cylinder dimensions of the GV have not yet been released by the company, but the bore is probably in the range of 92-94mm. Like most racing engines these days, the cylinder heads are equipped with dual overhead camshafts which operate the usual four valves per cylinder; a single spark plug is located in the centre of each combustion chamber. The valve included angle is less than the customary 32°. By my estimate the angle is probably between 25-27°. Initial testing of the GV went well; to the delight of Judd race engineer Stan Hall, Emanuele Pirro reported that its power band was as broad as the Honda V10 he tested for McLaren-Honda. From very early on, this engine has shown itself capable of revving above 13,000 rpm. I can confirm its rev limit having witnessed a test run at the beginning of March during which the engine was able to pull 13,100 rpm; now 13,600 rpm is being used regularly in qualifying.

John Judd has been around racing too long to be unrealistic about the prospects of his company's new engine. He does not expect a GV-powered car to win this year. Compared to the Hondas, Renaults, and Ferraris of this world, his company is tiny (about 56 employees), and its resources are relatively slender. The GV has been built without the technical support of a major manufacturer and without the financial support of a generous sponsor. Judd does not expect to sweep away the opposition, but he believes that he now has a truly competitive engine and a good team of engineers to develop its considerable potential. So far this season, the GV has performed far above expectation; it is proving extremely reliable for a new engine and already both Pirro and his partner JJ Lehto have scored championship points on a number of occasions. Judd's vast experience is paying off. Only time will tell if the GV will become a winner. Victory in Grand Prix racing is the product of many factors, such as tyres, driver, chassis, etc, most of which are beyond the control of a company of Judd's size.

For Engine Developments Limited, the GV is more than just another new engine, the latest in a series of six built by the company to date. It marks the beginning of a new line and will be used in a number of forms, not only in Grand Prix but also for the World Sportscar series, and possibly in much modified form in CART/Indy racing in the years to come. It is a new departure in terms of design differing in many ways from its predecessors but incorporating all of the experience accumulated by the Judd team from thirty or more years racing. Though one cannot predict the future, one can forecast with confidence that Judd will be deeply involved in racing at the highest levels over the next few years and that developments of the GV will be raced around the world and that the basic design will be improved and altered as further racing experience suggests. DDH



The laurel wreaths hanging from the balcony above the workshop at Vic Lee Motorsport's premises in Northfleet bear testimony to the success the team have had in the BTCC.

Going for Broke

The Grand Prix weekend at Silverstone finishes with a round of the British Touring Car Championship, and it will inevitably see another battle royale between the Vauxhall Cavaliers, the BMWs and possibly the Toyota Carinas. And although the works-backed Prodrive team can never be discounted, it seems likely that the Bavarian banner will be flown by the Vic Lee Motorsport cars of Will Hoy and Ray Bellm, the cars which this year have suprised everyone by their competitiveness. But who are Vic Lee Motorsport and where do they come from?

It was quite by chance that I met Vic Lee a year and a half ago. I was on a Golf GTI High Performance Driving course at Goodwood and my instructor for the day was Vic Lee. The name rang a bell before he reminded me that he had be mixed up in racing since 1974 racing Minis, special saloons, but that he had had a lay off from motor racing between 1979 and 1985. He then came back and won the Monroe championship in 1987. It was his involvement with the Toyota Supra challenge in the BTCC the following year, however, which really set the seed for Vic Lee Motorsport. "It was really then that I started getting a strong love for British Touring Cars although the Supra unfortunately never really went anywhere and it was a disastrous year. It was through that year that I felt that I could set a better team

"We were up against the might of Vauxhall and Prodrive with the work's cars and the only funds we had come in through the door for Jeff's car was £35,000."

up. It had always been one of my ambitions to set up my own race shop, but I had never had the money, the fire and the contacts with any manufacturers."

It was in a partnership with Richard Asquith in 1989 which saw Vic Lee put aside his helmet and driving gloves and concentrate on running a team, running Robbie Head in the Honda Civic CRX Championship and Karl Jones in a Sierra in the BTCC. "We won the Honda championship and got a class win in the Autoglass tour, but we had only limited funds to run Karl, and it showed, for we could never go testing as much as we would have liked."

The Lee Asquith team lasted just this one year, Asquith and Lee agreeing on an amicable split which enabled the latter to put all his energies into establishing his own team in the British Touring Car Championship. The question was with what and with whom?

To be successful Lee realised that his driving days really were over, appreciating that to be competitive he had to put all his energies into running, managing and financing a team rather than drive himself. There was also the question of which car to run and how was he going to pay for it.

"I've never been a spender, I've always been a saver so I took a chance and put all my savings into the team and also, as in any new business, borrowed money from the bank using my house and everything I owned as collateral. It was a burning ambition to own a top Touring Car team so I really threw everything I had at it, and really I was quite prepared to make or break."

The first move once the funds were in place was to buy a BMW M3, Lee buying the ex-Ravaglia car from the Bigazzi team in Italy and converting it into a 2-litre car. "It was dear to buy, but it was even more expensive to convert into a 2-litre car." Why a BMW? "I've always been a great believer that if a car looks like racing car then it will perform like a racing car, and the M3 was designed for motorsport anyway."

The team's results that first year with Jeff Allam as driver were quite encouraging, from the first race they entered when they outqualified both Prodrive cars, to the end result when they finished third in class. "We were very pleased with that first year, particularly when we considered that we were up against the might of Vauxhall and Prodrive with the works cars and the only funds

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VIC LEE MOTORSPORT

we had come in through the door for Jeff's car was £35,000. The investment was mine personally, but I always perform better when the pressure is on. Fortunately the bank was very kind to me, and believed in what I was trying to do. I had set them out a short, medium and long term plan of where I saw Vic Lee Motorsport going and as long as I didn't deviate from it, I had their support. We are always under tremendous financial restraints which does hold us back in some of our development areas, but the funding we have received this year from Securicor and Labatt's, whilst they're not the best funded deals, has allowed us to have more money than we've ever had before and that enables us to do more."

For this year Vic Lee has invested in developing his own specially built 2-litre cars, "not converted Group A cars" he is keen to point out and has employed ex-Prodrive engineer David Potter to look after them. "I am a seat of the pants engineer," explains Lee, "I can look at a car and tell you what it is doing, and I can give people ideas. Dave is a young engineer. He has some fancy ideas which we have to tame now and then as we would probably have ended up in the same scenario as Trakstar, but his strength is in chassis and suspensions. His thesis at university was damping and hydraulics, so he's very good in that area."

The team may run BMWs, but as Prodrive is the official team, VLM, as with the other BMW teams, receives no support at all from the factory or the official importers. "I can honestly say that from day one we've never had any support from England. We've knocked on the door several times, but have been informed that Prodrive is the only team they support. It was interesting in the early days when I rung up BMW to ask a technical question that I was actually put onto Prodrive to answer it. Until this year I never got so much as a phone call." Not even BMW Motorsport in Germany can help them, not wishing to meddle with the policy of BMW GB. "They can only advise BMW GB and I do believe that they put a good case for us for this year, but unfortunately the UK had already decided that the route they would like to go would be with Prodrive. After the first two results of the year, however, we do at least now have the use of a loan car." The closer relationship Vic Lee Motorsport has with BMW Motorsport in Germany, however, pays off in other ways. "We get engineering support so we have access to a lot of technical knowledge from them. If we feel that we want to try something, we consult them first before we do all the drawings, in case they have already gone that route and know the answers. Having this engineering facility available to us in Germany has saved us a lot of money." The engines themselves are rebuilt by Eurotech of Coventry.

What started as a one car operation last year has now expanded into a five car operation, although the fifth car, the Demon Tweeks BMW, has just been brought to make it eligible for the Thundersaloon championship. It is a new project for the



If the conditions of the workshop reflect the quality of work, then Vic Lee Motorsport has no problems.

"I can honestly say that from Day One we've never had any support from England . . . we've been informed that Prodrive is the only team they support."

team, but Lee is adamant that it will not detract them from working on the four other cars, their own Securicor-backed cars and the Labatt's cars of Bristow Motorsport. Isn't there the danger, though, that the customer might feel that his cars will not receive the same attention as the VLM works cars?

"When Laurence Bristow came to us he already knew that we were running two cars for Will Hoy and Ray Bellm and was a bit concerned as to whether we could handle 4 cars. It's always going to be politically difficult, especially with the situation we find ourselves in at the moment where we've got the two Securicor cars quite dominant over the Labatt's cars. Very early on in the season there were rumours that maybe the cars were slightly different, so the easiest way to kill that rumour was to take all the cars to Snetterton where Will Hoy drove all the cars ending up a little bit quicker in Laurence's car than in anything else. Bristow then accepted that all the cars were the same and that it was down to himself and team-mate Tim Harvey to improve their techniques. Both had been used to a lot of power having driven the Sierra Cosworths the year before, but it is a lot easier to drive a powerful car, especially one that handles, than it is to drive a car that's not got a lot of power."

With regard to his own drivers, Lee had his line-up sorted out at an early stage. "Ray Bellm approached me last October after a terrible season running a Rouse-prepared Sapphire to run a single car for him. We had a meeting and I suggested that two cars would always be better than one, because it is always very difficult to beat a two car works team with just one car. Ray already had the funds to run one car but obviously we needed more. It was just by sheer luck that we heard that Securicor were pulling out of rallying and were looking to get into some form of motorsport."

Despite a late application and overcoming the fact that they were not affiliated to a manufacturer, Vic Lee Motorsport won the contract. "Their worry," according to Lee, "was that they were sponsoring Vic Lee Motorsport so we had a lot of convincing to do. Our results from last year, when we started from nothing, and our driver line-up, obviously helped. It was a huge relief when we got the news in January that they were coming in with us."

Although not contracted to drive in the team at this stage, Will Hoy had already been contacted by Lee in the autumn when he realised that he was losing Jeff Allam to Vauxhall. Initially it was just to act as a test driver but when they discussed the 1991 season, they realised that Hoy's Japanese programme dovetailed with the British Touring Car Championship quite well. What also helped was the fact that Bellm didn't want the pressure of being number one and was quite content to act as a back-up for whoever was selected.

Lee's ambitions don't just extend to being one of the leading British Touring Car teams, but also to Germany where he would also like to run a Touring Car team. "I personally would like to see 2½-litre cars run in the British series as well. Whilst the British cars are quick, I don't think they are dramatic enough. If you go to a German series the noise, the crowds, the way the cars are set up are exciting to watch. The only problem I foresee over here is that we would lose the front-wheel drive cars since they would not be able to handle the extra horsepower. The point in favour of the British series, however, is the fact that there are seven manufacturers involved whereas in Germany there are only four."

Vic Lee Motorsport is a small team, just 12 people including secretarial staff, and everyone is as committed in making it succeed as Vic Lee is himself. They do not have the backing of a manufacturer and they still have some way to go to prove that they are not just a flash in the pan, but the fact that they perceive themselves to be the underdogs against the like of GM DealerSport and more particularly Prodrive, it gives them just that little extra edge over their rivals.

WPK



From the very beginning motor racing has been the environment where manufacturers can test their products to the limit.

The Spin-Offs

Motor racing and research go hand in hand. Looking right back to the earliest years and you will find examples of manufacturers using motorsport to develop ideas. Perhaps one of the most famous examples was the advent of Henry's twin-cam engine in the Peugeot for competition use in 1913. If one looks less far back there is the even more well known example of the development of disc brakes on the Jaguars in the Fifties.

That motorsport is used as a hostile environment in which to test ideas and products is just as well, because it gives some justification to the sport as well as providing much needed finance. In this aspect motor racing is far more relevant to everyday life than almost any other sport and ultimately beneficially affects even the anti-racing lobby.

Whilst it cannot be said that were it not for motor racing we would still be driving around in vehicles with large, inefficient engines, poor aerodynamics and skinny tyres, there is no doubt that as research and development intensifies in wartime, so it does for those manufacturers involved in motor racing, particularly when it is under the full glare of international publicity. It is one thing to fail in private testing, but quite another to fail in the public arena. What value, for example, are both Porsche and Yamaha getting out of Formula One at the moment? The lack of success by either manufacturer, particularly the former, which follows on from their recent unsuccessful foray into Indy/CART racing, has undone a lot of the good they had built up over the years in sports car racing.

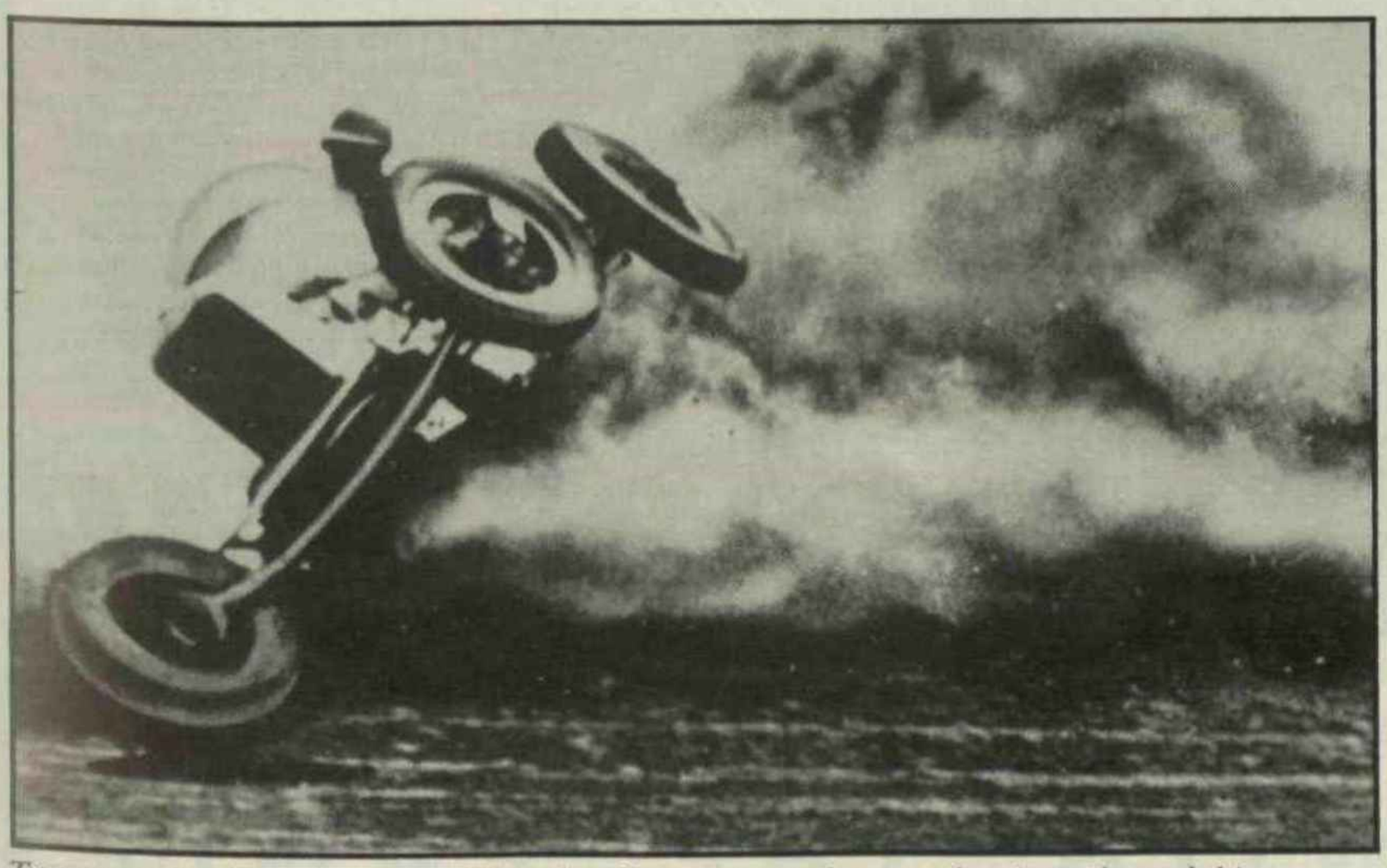
Whilst knowledge of their troubles in Formula One has yet to percolate to the outside world, it can only be a question of time and one wonders just how it will effect the public's reaction to their products. While it is hard to think that the Porsche name will be less respected, once a manufacturer is on that slippery slope, it takes a great deal more energy to turn public attitude around.

One can point the finger at engine manufacturers, oil companies and tyre companies who bravely carry out their development in public, but unbeknown to most people are all the smaller companies beavering away on their products which are just as vital in the overall package. It may cost only a pound or two, but if that component fails, so can the rest of the car. One has only to think of the Lotus turbine car which looked set to win the Indy 500 by a country mile only to stutter and then halt when a 50 cent component failed. As in a stereo system, any car is only as good as its weakest part, and since everything is pared down for weight considerations and there are no back-up systems, it has to work.

Whilst McLaren, Williams, Benetton are all in receipt of a huge amount of technical feedback from motor racing, of more relevance is the knowledge gained by the likes of Honda, Renault, Ford, Shell, Elf, Mobil, Goodyear and Pirelli. It may go through a further period of gestation and evolve into something more fitting for a road car, but it will ultimately end up in the public's hands.

We have come a long way, however, from the dawn of motoring when Andre and Edouard Michelin, who were already well established in the cycle tyre field, developed the first pneumatic tyre for use on cars at the time of the 745-mile Paris-Bordeaux race in 1895. So revolutionary was the product that no manufacturer was willing to submit his vehicle to such a dangerous experiment, or to add the uncertainties of the pneumatic tyre to the others which beset him at every point of design. In the end the brothers were forced to buy a 4hp Daimler engine and build their own car to run on the first pneumatic tyres ever designed for a car. As it so happened the car did not win the race, and due to some confusion it did not appear among the starters in the official list, but the brothers did complete the course and were among the nine vehicles still running at the finish.

Such revolutionary advances are unlikely to happen today, and if they were, somebody, somewhere would shout "foul". What we do get, however, and should be appreciative of, are the spin-offs from motor racing, whether it is Goodyear's latest generation Eagle tyres, more brainy chips in the engine or cleaner petrol.



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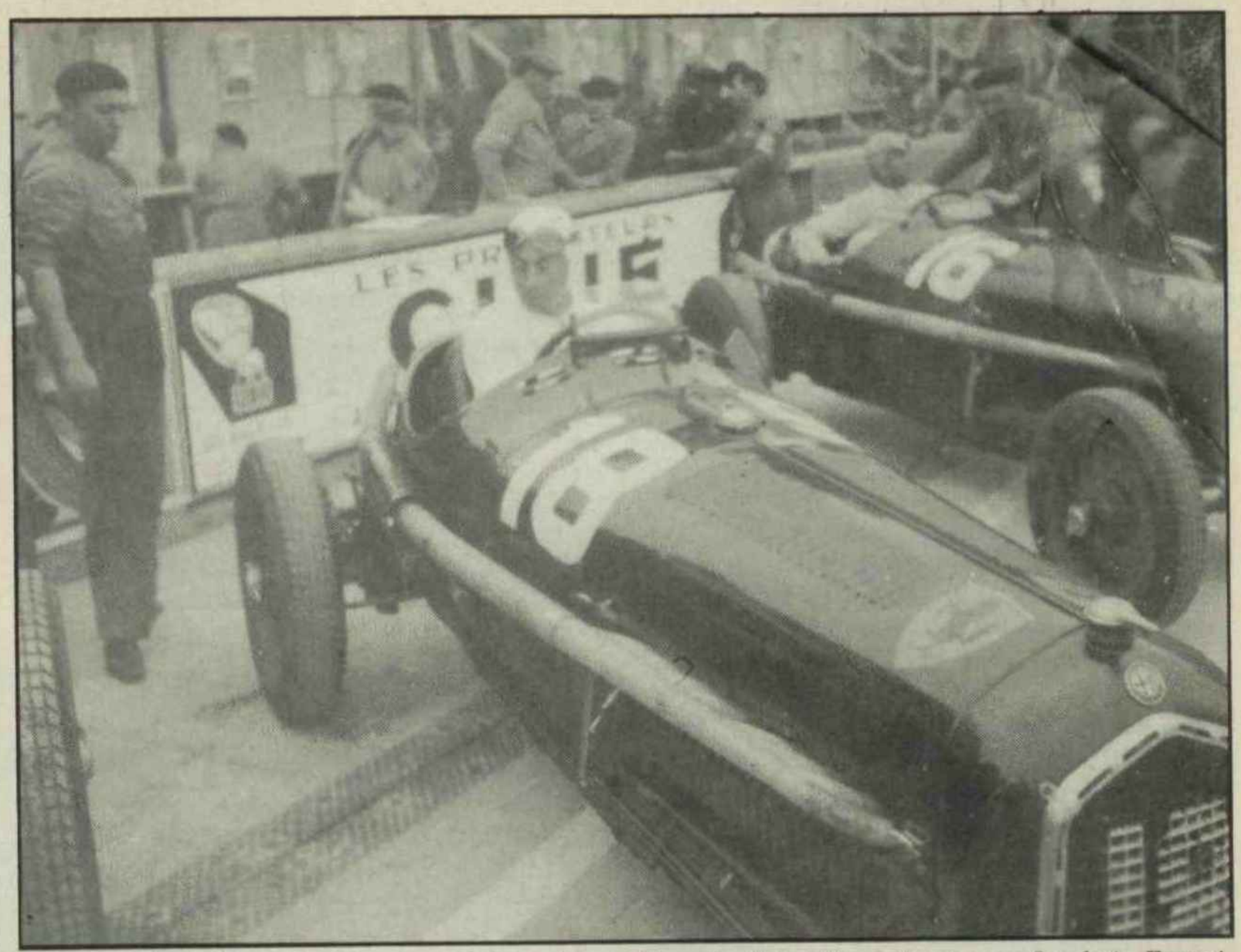
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Rene Dreyfus is the only driver now living to have driven for Enzo Ferrari's pre-war Scuderia Ferrari.

Rene Dreyfus: A Window on the Past

Few are the survivors still around from what has been termed the "Golden Age" of motor racing, the Thirties, to tell us how it was. One who is is a certain Frenchman, Rene Dreyfus, famous both as a restaurateur and racing driver.

His career really took off on April 8th 1930 when he won the second Monaco Grand Prix in a privately entered type 35B Bugatti. It was a triumph of the amateur over the professionals, namely the Bugatti works team led by local hero Louis Chiron. All expected the dashing, handsome Monagasque to come in first and with betting allowed (for the one and only time), perspicacious punters put their francs on the local lad. The Tote accepted bets up to lap 40, and as on lap 20 Chiron was already 1 min 27 sec ahead of second-placed man Bouriat, with Dreyfus 1 min 32 sec behind in third, money continued to shower on him. However, on lap 84 Dreyfus went ahead when the Monagasque came in to refuel, and swept on to victory. Scuffles broke out as angry punters made it quite clear that they thought the race had been rigged. In fact, Chiron's defeat was due to two factors; one, his accelerator began to stick following his pitstop, and two, a far-sighted move on Dreyfus' part.

Knowing that the works Bugatti had a special rear-end ratio to enable them to use top gear to the best advantage on the Monaco circuit, he saw that his only chance of victory lay in going through non-stop, and asked to have an extra fuel tank fitted. Ernest Friderich, the car's co-owner, said no. Rene replied "no tank, no race", but when the car turned up for scrutineering a 30-litre fuel tank hooked up to the main one was sitting in the cockpit. Scrutineering was slightly more lax in those days! It also brought amused grins to the face of the Bugatti works drivers!

While Monaco was not Dreyfus' first win (he already had victories to his credit including a first place in the 1929 Monaco GP 1500cc class), it was the one that launched him as a professional racing driver. His total prize money came to around 104,000 francs (5000 dollars approx). Thus he still had a substantial sum left over after giving Friderich his share. So at the end of 1930, after another victory, this time in the Marne GP at Reims, Rene decided to move on, and what more natural door to knock on than that of Bugatti, especially when one had won the Monaco GP for the marque. Ettore Bugatti had not forgotten his Monaco defeat, especially when his works team sponsors Esso, KLG and above all Michelin had been beaten by a privateer using Mobil oil, Champion spark plugs and Dunlop tyres respectively.



Dreyfus in the new 2.8-litre Bugatti, alongside team-mate Varzi in the 1933 San Sebastian Grand Prix.

As Rene says himself, "the man I had gone to see in Molsheim not only wasn't happy to see me, he wouldn't see me at all!" And so a dejected Dreyfus returned to Nice.

However, salvation came (or so it first appeared) in the form of an invitation to join the Maserati team for the 1931 season. He crashed in his first race for the Italian marque, and thereafter mechanical problems raised their ugly heads. His only success in 1931 came when he was lent a Bugatti by Count Czaykowski for the first (and last) Circuit de Brignoles. Rene won, thus dispersing those little black doubts that had been eating away at his confidence. Dreyfus and Maserati parted company at Avus on May 22nd 1932. The circuit near Berlin, consisting of two straights joined by two corners, one, the north being heavily banked (43 degrees), was one of the most dangerous ever built and yet pre-war drivers raced there without protest.

Was safety a dirty word in that era? "It was not that there was a lack of interest in the subject. The team managers were giving orders and we, the drivers, were doing our job. Never at any time did drivers openly bring up the subject of safety in our conversations," is Rene's answer. He finished the season in a Chiron-entered Bugatti and came fourth in the European Drivers Championship.

In 1933 his dream came true when he joined the Bugatti team, but little did Rene or his team-mates know that an era was about to end as Germany was preparing to take the world of racing by storm. In the words of Dreyfus: "the arrival of Mercedes-Benz and Auto-Union, besides their thorough professionalism, brought with



Dreyfus in a 3.2-litre Scuderia Ferrari Alfa finishing second, half a lap behind Fagioli in the 4-litre Mercedes-Benz in the 1935 Monaco GP.

them a new era of nationalism that we in France, England or in Italy were unable to match. Money was no problem for these teams: their government was always there to help. It was not Mercedes or Auto-Union that was winning a race, it was their country that was winning a battle."

This notwithstanding, he feels that there was a degree of fellowship among the drivers that would seem incredible in today's Formula One world. There is less fraternising today among the drivers. I believe that it is due mostly to the new tempo of life. The race ends, the driver in his own plane goes home or to some sponsor obligation, to some appearance before the next race. No time for leisurely travel by car as we used to do from one country to another, visiting places of interest, staying in old, well-known inns, enjoying marvellous meals and above all getting to know each other."

He illustrates this with a story from the 1939 French Grand Prix. "The entire Mercedes-Benz team had retired and after the race we all found ourselves in a small country restaurant which we loved, not far from the Rheims circuit. Its speciality was crayfish served in a tomato and cognac sauce and somebody had suggested making a contest of it. White silk shirts were all the rage at the time, and so we decided that we would all sit down at the table with our jackets off; we would thus plunge into the *ecrevisses* and after we had finished we would count the stains on our respective silk shirts. He who had the most would have to pick up the bill for the entire meal. Poor Rudi (Caracciola) had to pay. He said he really couldn't win that day."

They will decide who is Jewish

Dreyfus never made it into the German teams for obvious reasons, although Alfred Neubauer talked about employing him after Rene, at the wheel of his ungainly looking 4.5-litre unsupercharged Delahaye, had humbled Caracciola's W 154 Mercedes in the 1938 Pau GP, to score one of his most memorable victories.

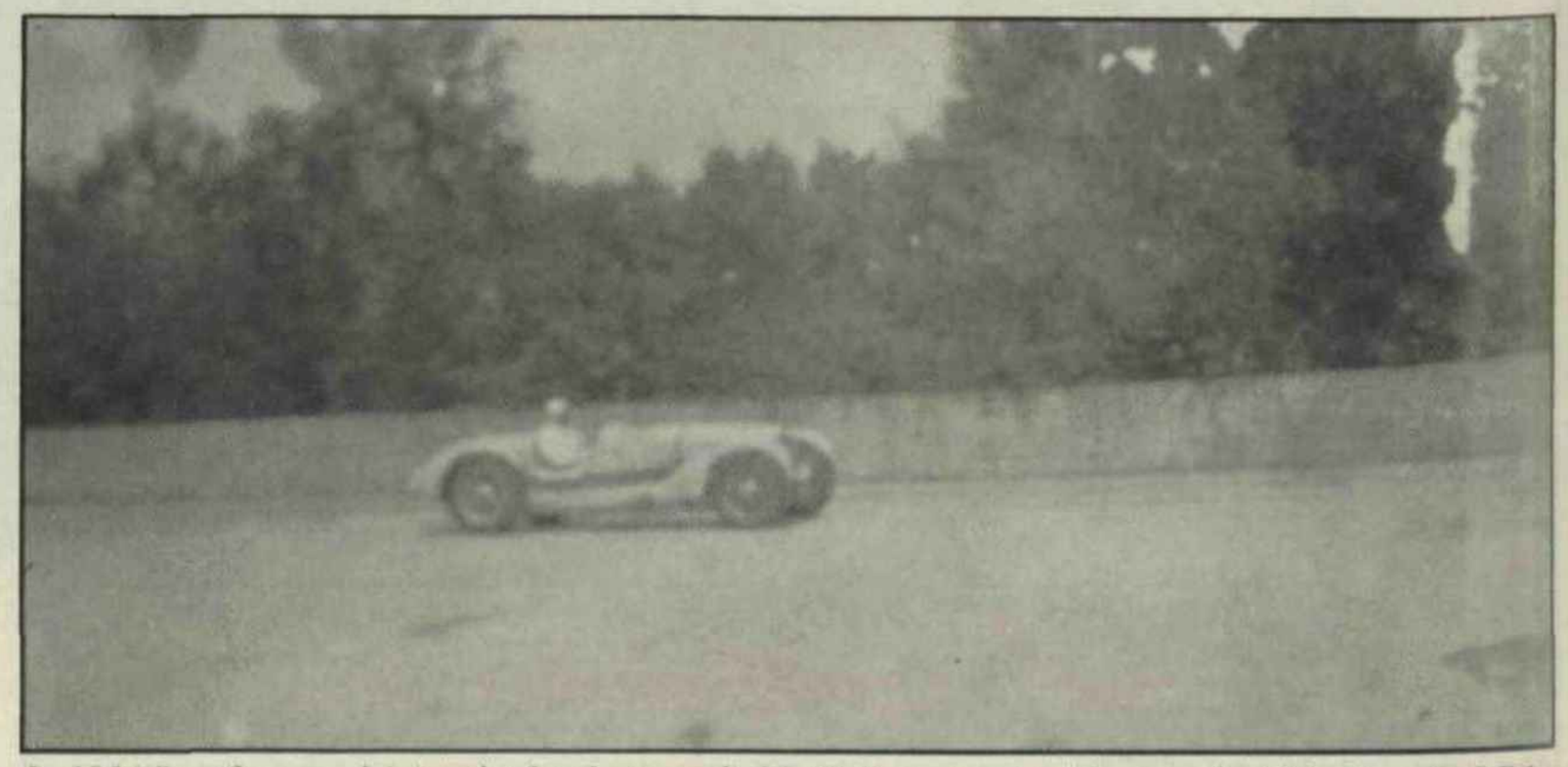
"I don't think I've ever heard the Marseilles played with such vigour!" When his last name was pointed out to the German team manager, his rejoinder was the famous "they will decide who is Jewish."

He is however the only driver now living to have driven for Enzo Ferrari's pre-war Scuderia Ferrari (in 1935 and part of 1936) and his comments on the team ambience make interesting reading; "Ettore Bugatti was Le Patron, while Maserati had a family atmosphere but Enzo Ferrari was the boss; there was not the camaraderie in the Scuderia that there had been with Maserati and at Molsheim. The conclusion of a race was not celebrated. There was no team pool as at Bugatti. The total prizes were not shared by the whole team. Each driver received his percentage only on what he himself won; thus while we on the team were racing for Ferrari, we were also racing against each other, a situation that is little changed today."

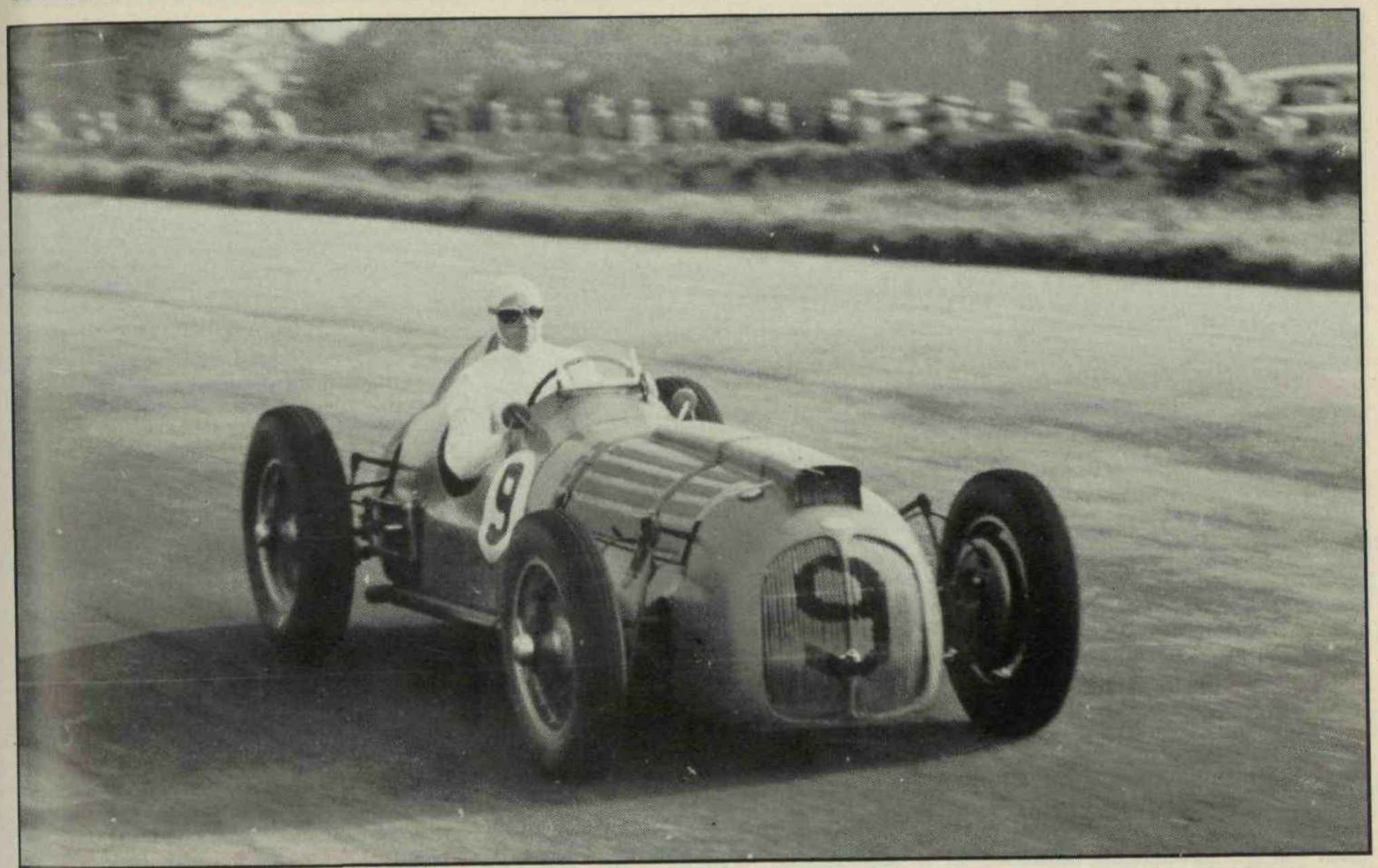
Rene won the Marne and Dieppe GPs for the Scuderia and as the last race of the 1935 season, the Italian Grand Prix, approached, the organisers decided to put a spanner in the German works by adding a chicane or two to the Monza circuit. The ploy worked and with half the race over, the master plan had gone wrong and the Mercedes and Auto-Unions were falling by the wayside. Stuck's Auto-Union was in the lead with Nuvolari in the Scuderia Alfa closing in for the kill. Then, to the immense distress of the Italians, Nuvolari blew a piston, leaving Dreyfus second and also closing on Stuck, who was troubled with fading brakes. The crowd then began to chant "*Nuvolari in macchina*" meaning "put Nuvolari back in a car", and when Dreyfus came in to refuel Enzo asked him if he'd mind handing over to the Italian. He agreed and Tazio raced back out onto the circuit to a second place finish after overheating the Alfa's brakes in his attempts to catch the German. Afterwards, Nuvolari insisted that Dreyfus should receive all the prize money awarded on the car including that calculated on the number of laps that he himself had driven.

So who does Dreyfus consider the greatest driver of his era? "Tazio Nuvolari without doubt; he was the fastest on the track and a very good friend off it. Drivers like Caracciola, Stuck, von Brauchitsch, Seaman and Louis Chiron were also great champions but Nuvolari was the only one who could win, even with an inferior car."

As a driver, where does Dreyfus himself stand? Was he just a steady and reliable second string or were his talents underestimated? The latter is probably nearer the truth. Discounting his spell at Maserati and remembering the fact that from 1935 onwards, anyone not driving a Mercedes-Benz or Auto-Union had little chance of winning a Grand Prix, and also that the type 59 Bugatti (disliked by all of the team drivers because of its unpredictability) was unable to compete with the P3 Alfas on an equal footing, he comes out well. In 1934 he won the 1934 Belgian GP on the very demanding Spa circuit as well as notching up two third places (Monaco and Switzerland) with the type 59. In 1935 in a P3 Alfa, in addition to his Marne and Dieppe victories, he finished second at Monaco (behind Fagioli's Mercedes) and Pau (behind Nuvolari), came fourth at Spa and ended the year with the best finishing record of any of the Scuderia Ferrari drivers (Brivio, Nuvolari and Chiron). In 1936, 1937, 1938 and 1939 he drove basically uncompetitive Talbots and Delahayes, but four drives for Maserati in 1937 in the "Voiturette" category (1500ccs) netted him two wins (Tripoli and Florence) and two second places (Turin and Peronne) and in 1938, he won the French Championship Title. Meo Consantini, the aristocratic Bugatti team manager told him that he could have been



In 1936 Dreyfus was driving the fast but unreliable Talbots, pictured here in the 1936 French GP in which he set fastest lap.



Dreyfus in the Ecurie Bleue V12 "Monoplace" Delahaye in the 1938 Donington GP.

one of the greatest drivers in the world except for one thing; he was not aggressive enough. Perhaps it was not that the fire was lacking, but that it was all too seldom fanned into a blaze.

However, it burst into flames in the 1937 Le Mans 24 Hour Race for which the Ecurie Bleu stable of Lucy and Laury Schell had entered a Delahaye for Rene and Alsatian, Henri Stoffel. Race favourites were the type 57 "tank" Bugattis but Dreyfus reckoned that the reliability and nimbleness of the little Delahaye gave them a fighting chance. The start saw them up with the leaders but when Rene came in to hand over to Stoffel, the latter's enthusiasm was such that he pulled the door off its hinges in getting in! Repairs took some 45 minutes and it was an all-fired up Dreyfus who went back out now down in around 35th place, driving as if it were a Grand Prix and not an endurance race. When he finally handed over to Stoffel in the early morning, he had put in an unbroken stint (apart from normal refuelling stops) of around 10 hours, and brought the car up to fourth after a remarkable display of controlled aggression. A third place finish was their final reward.

Few drivers can boast of having won a race without there being an opponent on the track! Dreyfus is one as in 1937, he won a very strange event called "The Million" (a prize of one million francs, 42,000 dollars approx) run at Montlhéry just outside Paris. The idea behind the "Million" was to encourage a French manufacturer to build a car complying with the 1938-40 formula (4.5 litres supercharged and 3 litres supercharged) capable of taking on the Germans. It was a race against time calculated by taking the average fastest lap in the previous year's French GP and adding 10%. This speed then had to be maintained over 16 laps of the circuit with a deadline set for midnight 31st August 1937. Delahaye and Bugatti took up the challenge.

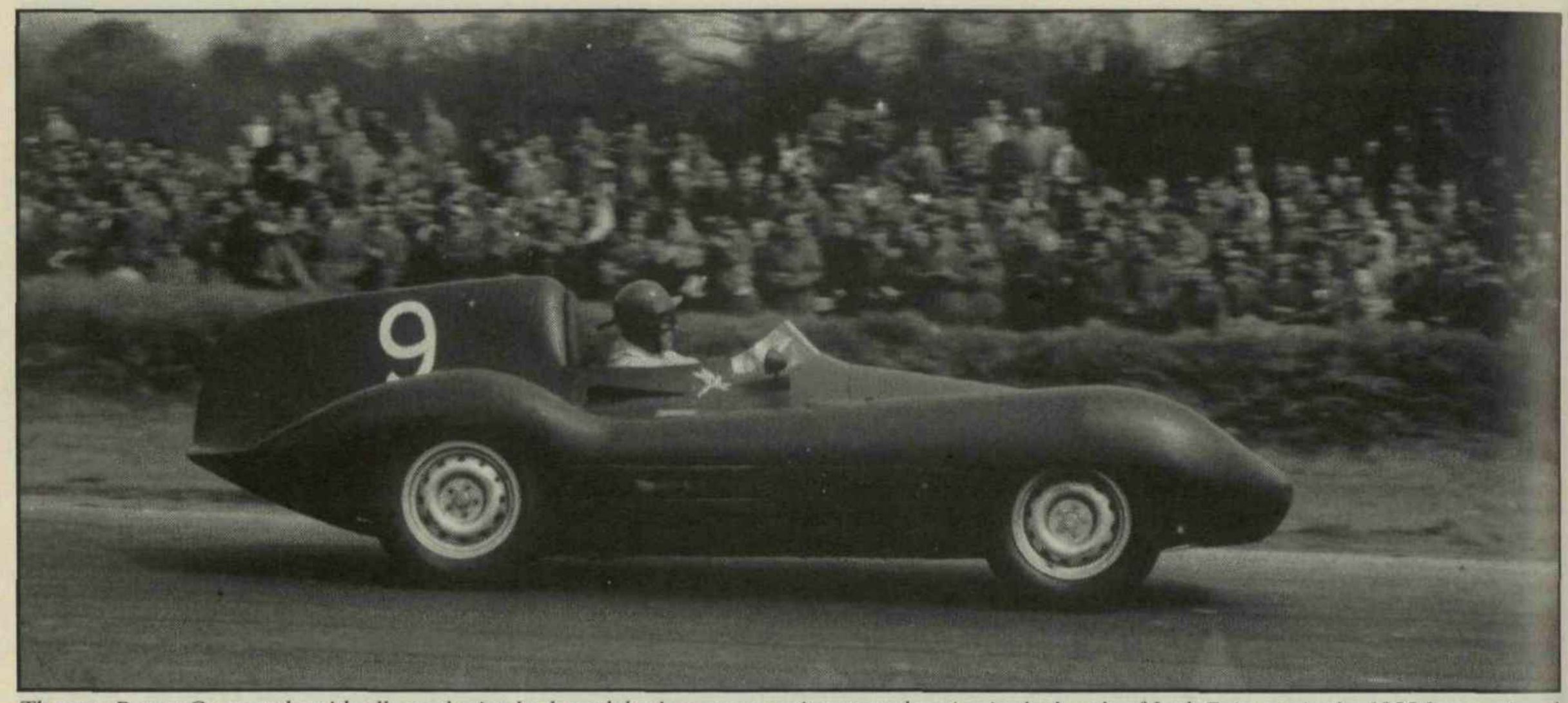
On 27th August, a very tense Dreyfus got into an ugly offset single-seater Delahaye and covered the 16 laps in a time that was 4.9 seconds inside the margin allowed, in spite of the fact that with three laps to go the white warning strip indicating no more rubber on the tyres was showing. He says himself: "I took more risks in that race against the clock than ever I did in a Grand Prix or a hill-climb." The race was not yet won, however, as Benoist's Bugatti still had to try. The Molsheim boys left it to the last possible moment when they made their attempts on the final day, the 31st August. Rene was present should Bugatti be successful, but in the event both attempts had foundered by the second lap.

Fittingly enough, Dreyfus's racing career virtually ended (apart from Le Mans 1952 in a Ferrari, retirement, and Sebring 1955 in an Arnolt-Bristol, class fourth) on the legendary Indianapolis circuit in May 1940. The outbreak of war had seen Rene join up, so he was somewhat surprised on being called into army command and told that he had been given 45 days' leave to represent French colours at Indianapolis in an 8 CTF Maserati painted French blue with Rene Le Begue as team-mate. They were told that 118mph would qualify them and both duly achieved that speed, only for Dreyfus to be bumped off immediately afterwards. An indignant Frenchman went back out on the track to salvage his honour (it was too late to qualify) and on his third lap a conrod made an impromtu appearance through the Maserati's crankcase. Rene as team leader then decided to take over Le Begue's car for the race. "No!" said the officials, but finally a compromise was found; Le Begue would do the first 250 miles, and Rene the last 250.

In spite of being stopped for breaking the no-overtaking-in-the-wet rule on two occasions, the Dreyfus/Le Begue pairing finished tenth. Call it Serendipity or whatever, his trip to the USA was to open up a new life for him as a restaurateur, in which he perhaps became better known than during his career as a racing driver!

Today, Rene Dreyfus is a fit and spry 85 year old with a memory undimmed by the years; he comments on present day GP racing as follows; "I've been amazed by the change in Formula One racing in the post-war era. The comparative lack of big manufacturers, the arrival with their revolutionary ideas of great men like Colin Chapman, John Cooper and the birth of great teams like Lotus, McLaren, Williams, and Tyrrell. The modern technology that permits the Honda engineers in Tokyo to know what's going on inside their engines during a race, all this compared to our pre-war racing seems almost unbelievable. I am grateful to be able to witness these marvellous moments of the history of racing."

DW



The new B-type Connaught with all-enveloping bodywork had an encouraging second outing in the hands of Jack Fairman in the 1955 International Trophy race, holding third place for 28 laps behind the Maseratis of Collins and Salvadori before retiring.

The First to Succeed

The B-Type Formula One Connaught holds a very special place in British motor racing history. It came at a time when Britain, newly re-committed to Grand Prix racing, was still struggling against the established Continental constructors. Enthusiasts had lived through the frustration of the failed V16 BRM programme, and then the unfulfilled promise of the newer British contenders in the two years when the World Championship was run to Formula Two regulations.

But the 2½-litre formula which came into operation in 1954 seemed to hold more promise, and the B-Type Connaught was one of three British contenders which might, it seemed, at last come to grips with the Ferraris, Maseratis and lesser Continental lights.

Connaught lacked the financial resources of even the other British teams, but it won a Grand Prix in 1955, before Vanwall and BRM did, and the following year it gained more places in World Championship Grands Prix than its rivals, taking a third place, a fourth and a fifth. And this in spite of an economic policy which prevented it from contesting more than two *Grandes Epreuves* that year.

The Connaught name had been established in the late 1940s when Rodney Clarke and Mike Oliver began building sports cars and later Formula 2 single-seaters at Send in Surrey, with backing from Kenneth McAlpine of the construction company family.

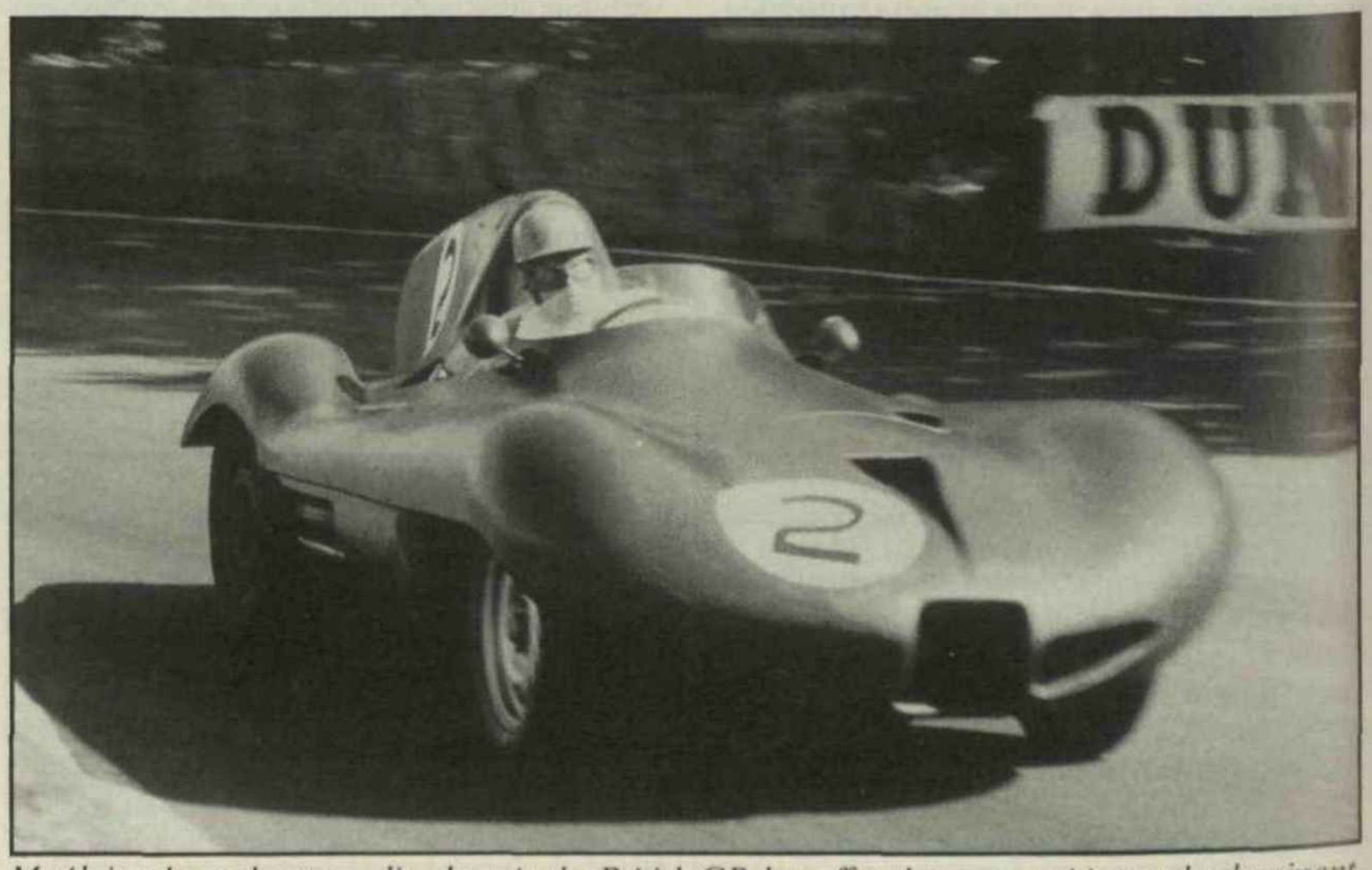
Their B-Type was intended as a stop-gap for the company (and its customers) to use until the V8 Coventry Climax engine became available and a radical new rear-engined semi-monocoque design could be completed. It never was, and Connaught plugged on with a 2470cc (93.5 x 90mm) development of Alta's four-cylinder F2 motor, which produced 240 bhp at 6400 rpm.

This was fitted to a simple ladder frame of large-diameter tubing, with a smaller-diameter tubular superstructure. Suspension was by double wishbones and coil-spring/damper units at the front and a torsion-bar-supported De Dion rear. Dunlop alloy wheels and disc brakes were employed, the power being transmitted by way of a pre-selector gearbox.

Most unusual feature of the car, designed by Clarke and chief draughtsman Johnny Johnson, was fully-enveloping bodywork. Although it appeared in public after the similarly-equipped Mercedes-Benz W196, the Connaught had been developed independently, the factory even building their own wind-tunnel for the purpose. Design work had begun in July 1953, and the prototype B-Type was shown to the Press in August of the following year.

The B-Type Connaught first raced at the beginning of the 1955 season, at the Easter Goodwood meeting. It was not very impressive, and retired with a broken fuel-pump. Driver was 1953 Le Mans winner Tony Rolt, who had been most successful of the Formula 2 Connaught drivers.

The car showed more promise at its next appearance, in the International Trophy at Silverstone, when two examples were fielded. In one of them experienced test driver and sports car man Jack Fairman



McAlpine drove the streamlined car in the British GP, but offered no competition to the dominant Mercedes-Benz.

was in third place after 20 of the 60 laps, with director McAlpine in the other car fifth. Within ten laps though both cars were in trouble, McAlpine's developing a problem in its fuel system, and Fairman retiring with a broken throttle linkage.

The first Grand Prix for the new design was at Aintree in July, and by now two more B-Types had been completed as replacements for private owners' A-Types. One of these was Leslie Marr's car, which he had already taken to victory in a small *libre* race at Davidstow. The other was Rob Walker's, which differed from the others in that it had open-wheel bodywork.

This car, driven by Rolt, was in fact fastest of the four in practice, lining up 14th on the grid for the British Grand Prix, but although it got up to 11th place in the race, it had a long stop and was out with a broken throttle linkage before 20 laps were up. Marr gave up with no brakes, and then McAlpine retired the works streamliner when its clutch went on lap 31; Fairman had been a last-minute non-starter.

Rolt took the Walker car to a second place at a Silverstone club meeting in September, but Peter Walker was more successful with it, beating Roy Salvadori's Gilby Maserati 250F to win the *libre* race at Snetterton. He was not so successful in the Oulton Park Gold Cup race however, and managed only eighth in the Avon Trophy race at the end-of-season Castle Combe meeting. Marr in the other private car was fifth in a race at Charterhall in Scotland, but crashed at Oulton Park.

In the works car, Fairman had taken sixth place in the Redex Trophy race at Snetterton, with Mike Oliver having one of his occasional drives and coming in one place further back. Fairman retired in the *libre* event at this meeting however and then crashed in the *Daily Telegraph* Trophy race at Aintree.

His car was then rebuilt with open-wheel bodywork, and given to the incomparably experienced Reg Parnell for the Gold Cup race. Parnell had joined the team at Aintree, and led the Maseratis of Moss and Salvadori until a last-minute problem dropped him to sixth at the end. At Oulton Park, in spite of magneto trouble, Parnell took fourth place in a first-class field which included factory entries from Maserati, Ferrari (with V8 Lancias), Vanwall and BRM. Fairman was 11th.

Even without straying from Britain, the development of the new car had almost exhausted the factory's meagre resources, and there was talk of withdrawing from racing. But then came an invitation to contest the Syracuse Grand Prix in Sicily on 23 October. It would be an expensive journey, but the offer of £2000 starting money for a two-car entry was too good to miss.

And so two cars were dispatched, and to save money two drivers with absolutely no experience in such events went with them. One was Formula 3 and small-sports car ace Les Leston and the other Tony Brooks, who had been showing considerable promise in minor home events with a Formula 2 Connaught. Both had also driven 1½-litre Connaught sports cars with some success.

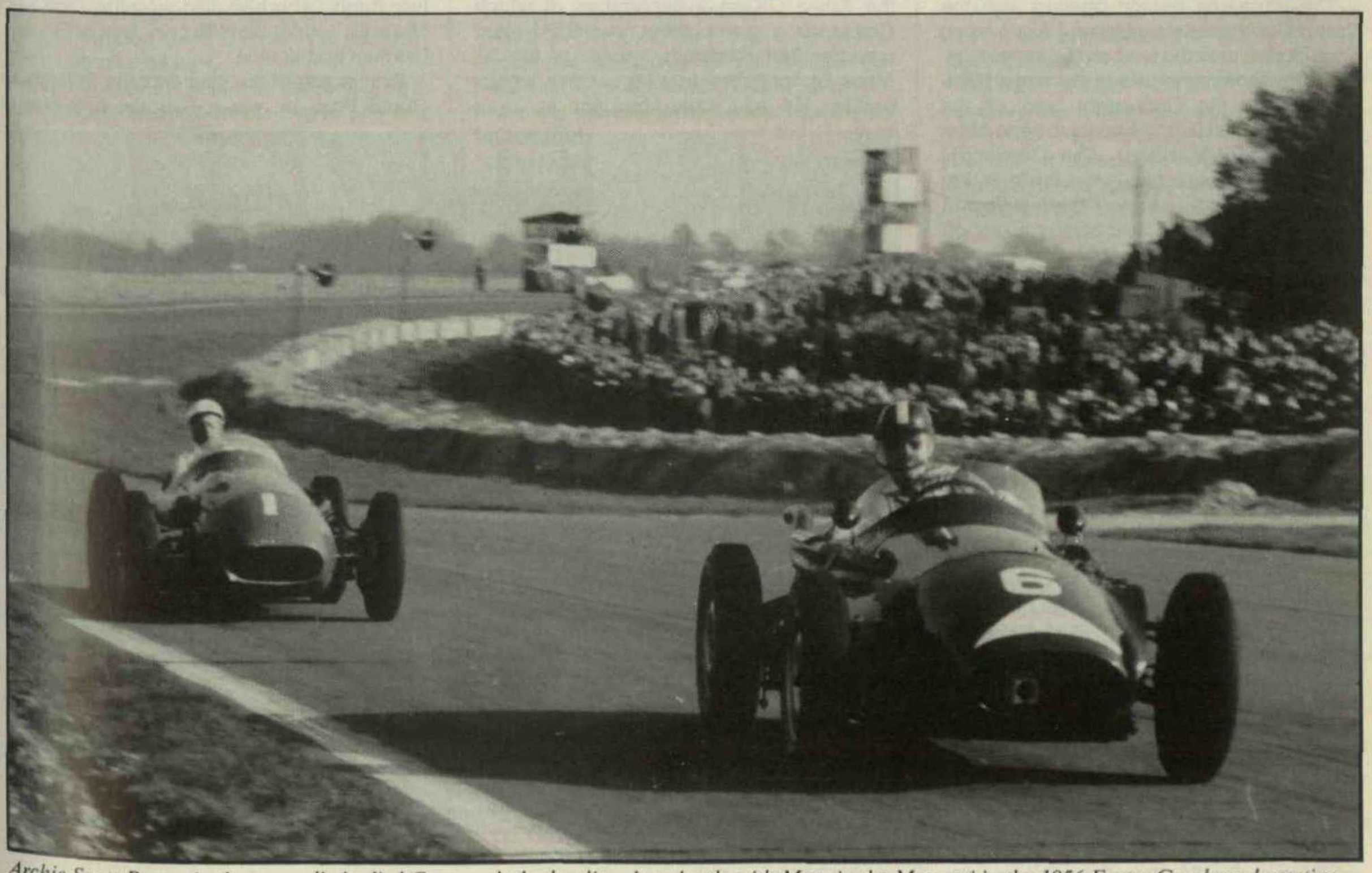
As a further cost-saving measure, practice lappery was limited, but Brooks created a stir by placing the open-wheeled car alongside Maserati stars Musso and Villoresi on the front row of the grid. What the British car might have lacked in power it more than made up for in handling, and Brooks was able to lap faster in practice than the third and fourth factory Maseratis.

Musso, Villoresi and Schell moved their red cars into the first three places at the start, but Brooks and Leston in the Connaughts were next at the end of the long opening lap. These positions were unchanged on the second lap, but on the third Leston spun the streamliner and dropped to 12th place.

At about the same time, however, Brooks moved ahead of Schell and after another four laps was past Villoresi as well, so that only Musso remained ahead of the Connaught. Then after seven more laps, Brooks calmly passed Musso. The Maserati driver fought back, and retook the lead on lap 21, but the Connaught simply passed him again, and that was that. A disbelieving Musso had no answer.

Brooks carried on to score a historic win from the works Maseratis, Musso being almost a minute behind and Villoresi having been lapped twice. The Connaught also smashed Marimon's Maserati lap record. Leston had made three stops for new plugs, his combined problems leaving him ninth and last at the end.

The Syracuse success was universally hailed as being the first time a British car had won a Grand Prix since Segrave's 1924



Archie Scott-Brown in the normally-bodied Connaught had a ding-dong battle with Moss in the Maserati in the 1956 Easter Goodwood meeting.

San Sebastian victory for Sunbeam, though in fact Leslie Brooke had taken the 1946 Grand Prix des Frontières at Chimay in an ERA. True, that was a very minor event, but then so too was the 1955 Syracuse race. And it's only nomenclature that prevents HWM bidding for the honour, for the 1952 International Trophy race at Silverstone which Lance Macklin won for the Walton outfit was as much a non-championship Grand Prix as any of the Continental events which happened to use that title.

Syracuse was, however, the first Continental Grand Prix race since 1924 in which a British car had won against opposition from another factory team.

There was one more outing for Connaught before 1955 was over, the Syracuse-winning car (B1) being entered for promising sports car star Archie Scott-Brown in the *libre* race at Brands Hatch on Boxing Day. It was Scott-Brown's first race in a Formula 1 car, but he was a comfortable winner, against admittedly negligible opposition.

Over the winter Marr fitted his private car, B3, with a D-Type Jaguar sports car engine for the New Zealand *libre* races, and took a third place and a fourth from four starts.

The factory meanwhile built three new cars for 1956, all with the exposed-wheels "Syracuse" bodywork, whilst retaining the two 1955 machines. As team drivers they signed on Scott-Brown and Leston and also obtained the services of another promising sports car driver, Desmond Titterington, as well as keeping Fairman on their books, Brooks having been snapped up by BRM.

The European season opened with the Easter Goodwood meeting on 2 April, when Scott-Brown took the lead on the second lap from Hawthorn, who was in the latest BRM. For 15 laps the Connaught held off the opposition, until fading brakes dropped him behind Moss (Maserati). The Connaught blew its engine spectacularly a lap later, but team-mate Leston finished third, followed by Bob Gerard, who was having a one-off drive in a works Connaught, and Parnell, who was to be the regular driver of the Rob Walker car this year.

Connaught then set off for the Syracuse Grand Prix, scene of the famous 1955 victory. In practice Titterington lapped only a second slower than Brooks' time six months before, but the fastest Ferrari and Gordini were both considerably faster. In the race Titterington retired with ignition problems, the second car having lasted two laps less before it succumbed to a broken gearbox. This was being bought by Italian sports car driver Piero Scotti, who was handling it here for the first time.

Back home Scott-Brown was fastest in practice for the Aintree 200, lapping 2.2 seconds better than Hawthorn could manage in the BRM. When the race started he flung the Connaught into the lead, extending his advantage until, after 14 of the 67 laps, he suffered another engine failure. Titterington in the streamlined car ran in third place but then had to pit for a new set of plugs before leaving the road and crashing on lap 54. Parnell had retired the Rob Walker car early on with overheating problems.

There was more opposition in the International Trophy at Silverstone on 5 May, but Scott-Brown kept going this time to take a distant second behind Moss (Vanwall), with Titterington third and Scotti seventh; Parnell, Fairman and Mike Oliver had all been early retirements.

This was the biggest turn-out of Connaughts until the British Grand Prix two months later. Between the two Silverstone meetings Scotti ran erratically at the tail of the Belgian GP field before retiring with no oil pressure, Scott-Brown retired the single works entry in a minor Formula One race at Aintree, and Parnell rolled Walker's car at Crystal Palace when it hit a bank after a brake locked.

This meant only three works entries for the British GP. Scott-Brown made a fine showing, working his way up to seventh by lap 16 when the Connaught broke a hub and shed a wheel. Titterington was in ninth place at that stage but had a troubled race and eventually retired with a broken con-rod on lap 75. Fairman in the third car had been markedly slower than the others but circulated like clockwork, getting up to eighth place by half-distance and eventually finishing a good fourth, albeit three laps down.

A week later Scott-Brown retired in the Vanwall Trophy race at Snetterton, but then won both heats of the two-part *libre* race at Brands Hatch on 6 August, with Leston second.

Last Championship race of the year was the Italian GP on 2 September, at which Connaught's guest driver was BRM team member Ron Flockhart, winner of the Le Mans 24 hour race in a Jaguar five weeks earlier. He had been brought in as a replacement for Scott-Brown, whose entry the organisers would not accept.

The Connaughts were hardly competitive on this demanding high-speed track, only Fairman breaking three minutes in practice, compared with Fangio's pole time of 2:42.6 in the Lancia-Ferrari. That did however leave him about the middle of the grid, the other two cars being nearer the back.

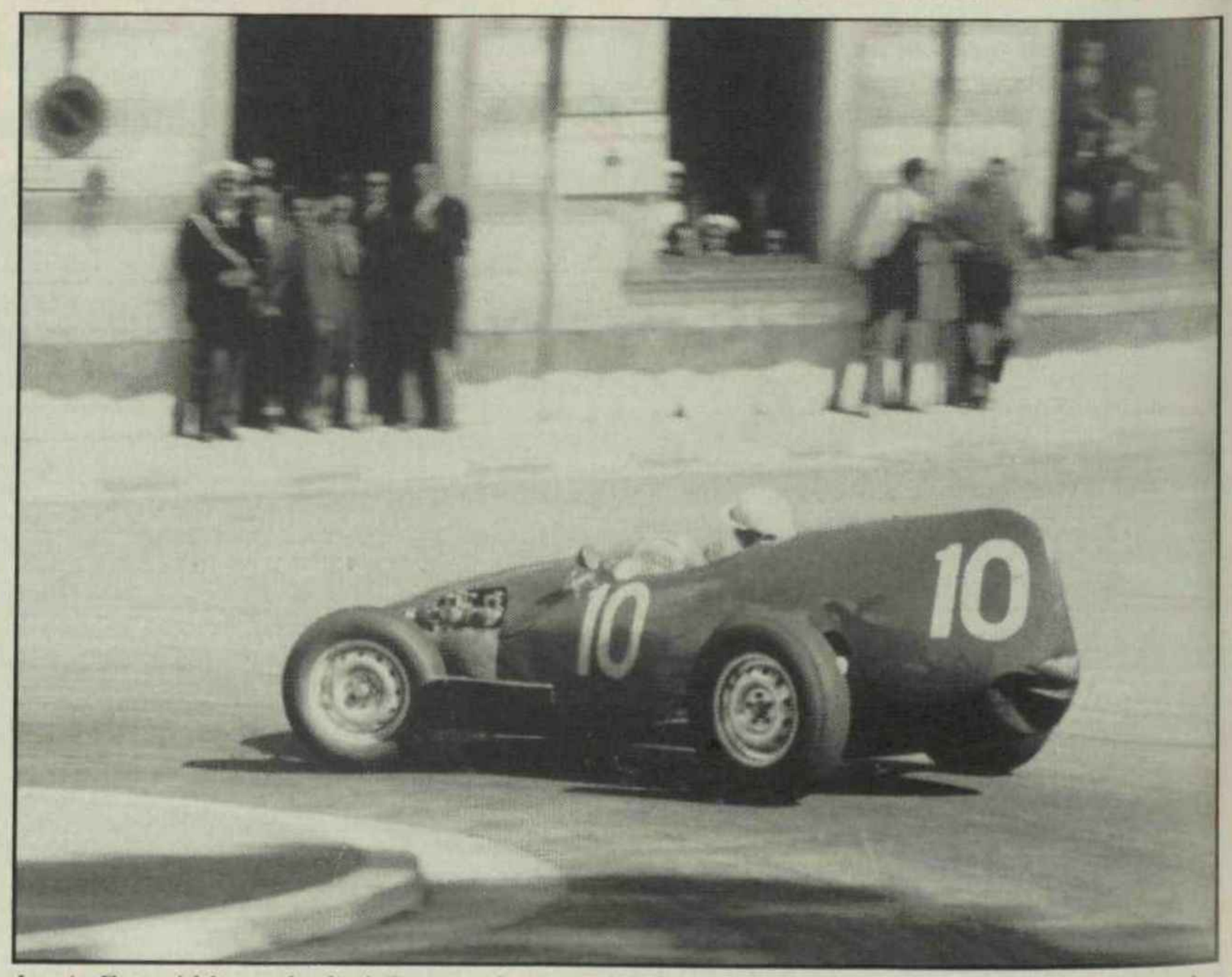
Fairman and Flockhart both made storming starts, and at the end of the first lap were in 10th and 15th places respectively; Leston was 16th but was soon out with a broken torsion-bar.

Fairman lost seven places when a tyre burst on lap ten but by half-distance in the 50-lap race was back up to ninth, two places behind Flockhart. Flockhart carried on to take a heartening third, a lap behind the winning Moss Maserati, with Fairman fifth, three laps down.

On 14 October Brands Hatch staged a Formula One race, which enabled the Connaught team to have their last fling of the year, and to give Formula 3 star Stuart Lewis-Evans a try-out in one of their cars. The only opposition came from Salvadori's Maserati, and Scott-Brown won from the very promising Lewis-Evans, who, in his first race in a Formula 1 car, beat Salvadori, Leston and Fairman.

All seven B-Types were raced in 1957. The factory, as ever hampered by financial restrictions, had taken back B6 from Scotti, and also had on its inventory B3, the ex-Marr car which had not appeared since its New Zealand sortie 12 months before. For drivers this year they had called on Formula 3 ace Ivor Bueb (who had also won the 1955 Le Mans 24 hours), Scott-Brown, Lewis-Evans, Fairman and Leston.

First outing of the year was the Syracuse Grand Prix, for which Fairman and Bueb



Lewis-Evans' Monza-bodied Connaught, complete with dented tail, on his way to fourth place in the 1957 Monaco GP.

both qualified with the same sort of times as Brooks had managed in 1955. By now however the latest Ferraris were 10 seconds faster. Leston was a non-starter, his car (B1) having burned out in practice when a driveshaft broke and punctured the fuel-tank. Peter Walker drove the Rob Walker car but spun and stalled on lap 64, Fairman having gone with fuel-injection trouble 30 laps before; Bueb finished fifth (and last).

Easter weekend saw the factory splitting its effort, two cars going to France for the Pau Grand Prix and two others running at Goodwood. This would seem to be a sure recipe for disaster, but in the Continental event Bueb and Leston circulated smoothly and crossed the line at the end of the race in third and fifth places, though three laps and more behind Behra's winning Maserati.

The Glover Trophy result at Goodwood was even better. In practice Scott-Brown returned third fastest time with Lewis-Evans, whose car (B3) had been fitted with an odd dart-shaped body, fifth and Fairman, in the Rob Walker car, seventh.

In the race the three Connaughts took up position behind the leading Vanwalls, Scott-Brown ahead of his team-mates until he went out with no oil pressure on lap 7. And when the Vanwalls expired, one by one, Lewis-Evans came home to give Connaught an unexpected success, with Fairman bringing his private entry home in second.

For a while the following weekend's Naples race looked as if it might produce a similar result, as Lewis-Evans ran strongly in second place for much of the distance. This time, however, it was not the leading car, a Ferrari, which struck trouble, but the Connaught, which ground to a halt with a broken front hub after 44 laps.

Both Connaught entries in the Monaco GP on 19 May qualified, Lewis-Evans 13th and Bueb 16th on the 16-car grid, though a last minute problem with the latter car meant



Monaco 1957 – last works appearance of a Connaught in a Grand Prix.

Bueb took over the spare for the race. This ran at the tail until going out with a split fuel-tank just after half-distance.

Lewis-Evans in the "Dart" was up to eighth by lap 50 however and, taking advantage of the high rate of attrition, crossed the line in fourth place.

This was not a good enough result, though, to keep the little team afloat, and a few days after the race Connaught announced that they were withdrawing from racing. Later in the year the cars were offered at auction.

The factory withdrawal did not quite end the B-Type's career in international racing. An entrepreneurial young ex-driver called Bernard Ecclestone bought two cars and sent them to New Zealand for the series of international *libre* races there the following January. Lewis-Evans ran strongly in the New Zealand Grand Prix at Ardmore before retiring, while Salvadori finished fifth in the other car. Only one car started at Wigram, and Lewis-Evans brought it home to another fifth.

Back in Europe Scott-Brown took sixth at Goodwood and ninth in the Aintree 200 before his tragic accident at Spa, while Lewis-Evans was fifth at Goodwood and Paul Emery 14th at Aintree.

American Bruce Kessler optimistically attempted to qualify for one of the 16 available places on the grid for the Monaco Grand Prix, but was only 21st fastest; Emery was slightly slower again.

The final Grand Prix appearance of a B-Type Connaught was at Silverstone on 19 July 1958 when Ecclestone's cars were driven by Bueb and Fairman. They qualified near the back of the 20-car grid but neither car lasted, Fairman's going out with ignition trouble and Bueb's succumbing to gearbox problems.

The other buyers had included keen amateurs Ken Flint and Geoff Richardson, who graced the tail-end of the following spring's British international Formula 1 races and picked up a few club race placings.

Very few years passed before B-Type Connaughts were competing regularly in historic racing, where the same good handling and sufficiency of power enabled them to compete on even terms with the 250F Maseratis. Several of the cars passed back into Rodney Clarke's hands in the 1970s, and he built a new one up incorporating parts from several cars.

The years between the factory's withdrawal and the present have naturally led to some confusion about the provenance of various of the existing B-Types, but by a fortunate quirk of fate the two most successful cars in 1990s historic racing are also among the most original. Best-known of them is Peter Hannen's B2, the 1955 works car which Rodney Clarke bought back and ran, with a variety of drivers, in the early Seventies. After spending several years in a Belgian museum it was brought back to Britain and has been raced regularly by Hannen and Alain de Cadenet over the past two or three years and has shown itself to be faster than all but the very best Maseratis.

Hannen pushed the 250F of eventual winner Willie Green in both the last two HGPCA 100-mile races, at the Nürburgring in 1989 and at Silverstone last year, finishing second in the 1990 race.

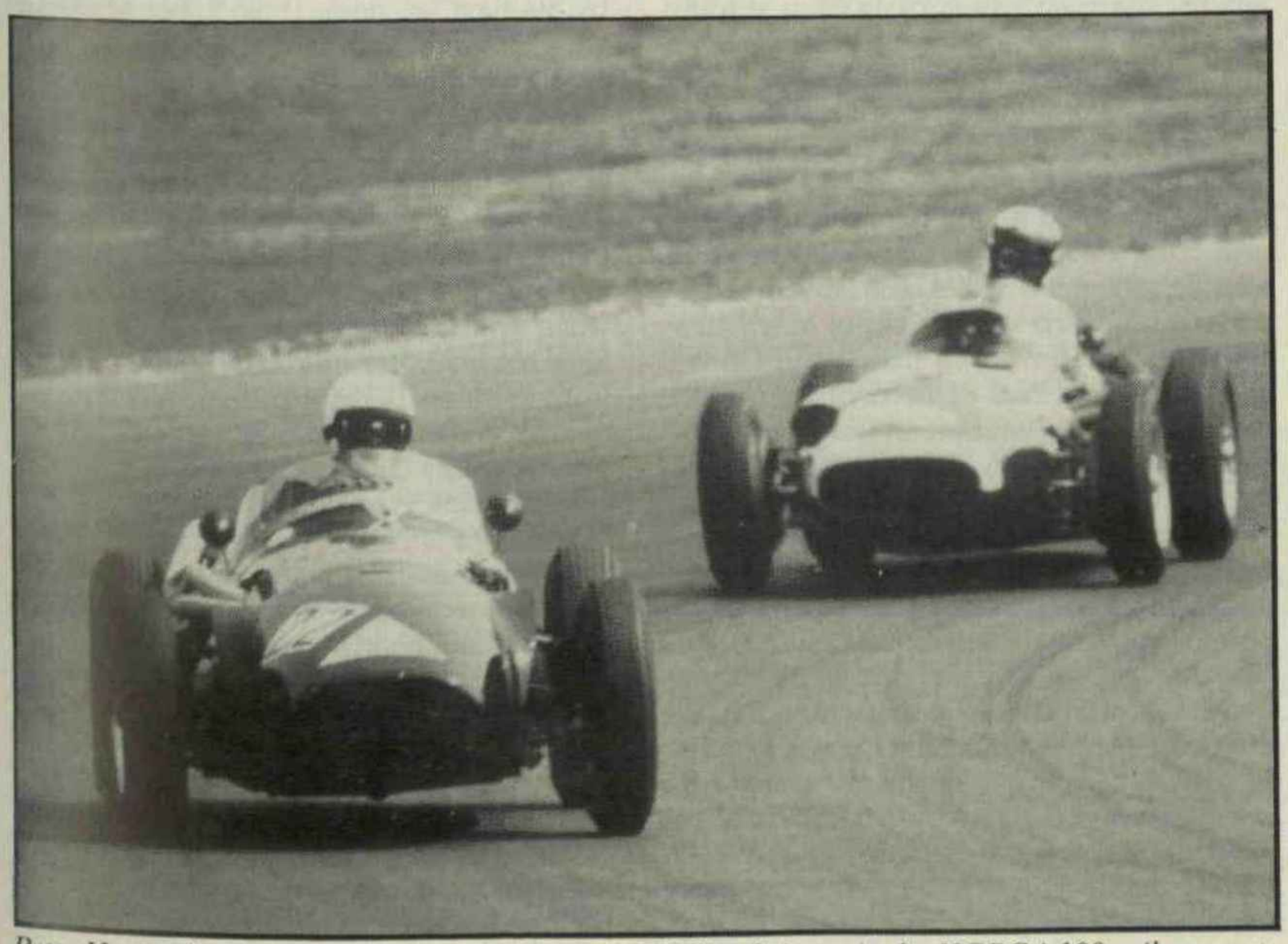
Third in that event was David Duffy in another B-Type, the one built up by Clarke in the 1970s from parts of a number of cars and called B5. Duffy prefers to call it B4, which is probably equally valid, and he races it in the blue and white Rob Walker colours in which B4 originally ran. Connaught experts agree that, whatever its identity, the parts are all genuine and the car is as "pukka" as any.

B1 was supposedly destroyed in Leston's 1957 Syracuse crash, but the frame was saved and a complete car subsequently built up on it in recent years. This car has been seen over the past season or two in the hands of John Harper and Chris Mayman. Ean Pugh's ex-Langton car is a reconstruction of B5 on an original frame.

Harper had achieved a number of placings in the earlier 1980s with B3, which he raced with Jaguar engine and both "Dart" and streamliner bodywork. It was burnt out in a fire in New Zealand in 1988, though the salvaged parts are now back in Britain and it will doubtless be reconstructed one day.

The other two cars have been on public display for many years, B6 at the London Science Museum and B7 in the Donington collection.

KHRC



Peter Hannen's B2 and Willie Green's Maserati 250F battle it out in the HGPCA 100-mile race at the Nürburgring in 1989.



Hannen's 1½-litre 6CM Maserati which finished second in the Shuttleworth Trophy race..

The Entertainers

Anthony Mayman had his worst day in many at a VSCC race meeting when he won only one race at Donington Park on Whit Monday, and was second in two others. At the same meeting, the first of two planned Donington visits by the VSCC this year, John Harper won twice.

The day started badly when Alastair Pugh overturned his Frazer Nash during practice, and was taken to hospital with multiple injuries.

The opening five-lap scratch race was a relatively easy one for John Freeman in the 2-litre "Spa" Aston Martin which he — and other members of his family — have been racing for 35 years. Whenman's 1934 4½-litre Lagonda was second while David Taylor took his 1½-litre Aston Martin Le Mans past Hannis's 3.6-litre Alvis and was right alongside Whenhman as they crossed the line. The Lagonda got the nod from the Aston by 0.3-sec.

Two Bugatti 35Bs were in the entry for the John Holland Trophy race for vintage cars, the first of three events on the programme supported by the Pine Cliffs Golf and Country Club (in the Algarve), new sponsors of the VSCC's Racing Drivers' Challenge. In one of the Bugattis Julian Majzub set fastest practice time, comfortably clear of Alex Boswell's Bequet-Delage, with the Morgan three-wheelers of Stuart Harper and Dave Caroline next.

The Bequet got the jump at the start but Majzub's Bugatti shot past and had a good lead into the first corner. Round the back of the course he lost it and spun, but gathered it all together with the loss of only one place, and set off after the bigger car. But then the blue Bugatti suffered a misfire and retired to the pits after three laps. Boswell's lead then shrank as the Bequet slowed with an overheating engine, pulling swiftly off the track when the engine suddenly blew all its remaining water out. Caroline was the new leader but all was not well with his car, either. He felt all the symptoms of a big-end tightening, and eased back over the final laps. Closer and closer crept Peter Morley with the towering Bentley-Napier, until he was able to blast past on the straight on the last lap. But Caroline still had enough to slip the nippy Morgan through in the chicane and lead the monster to the line- by 0.3sec.

Stuart Harper's Morgan was third, then Martin Stretton's Frazer Nash, which had tagged on to the back of the field on the warm-up lap following the completion of transmission repairs, then Randal Stewart (4½-litre Bentley 3-litre). John Horton, winner of the race in 1989, was seventh. He had made a bad start through not having fuel-pressure in his 35B pumped high enough. Then in a crowded first-lap rush for the chicane, he found himself with nowhere to go but the escape road, the red car rejoining dead last. Another five-lap handicap followed, this one going to Thompson's Lagonda Rapier from Seber's Wolseley and JT Mason's 1½-litre Riley.

The field for the Archie Scott-Brown Memorial trophy race contained a good mix of '50s sportscars. In practice Gary Pearson set the fastest time of 1m27.5 in the ex-Cunningham Costin Lister-Jaguar, in spite of running in the motor after a rebuild. John Harper in the Robert Brooks-entered long-nosed D-type was slightly slower at 1m27.8, with a gap to the rest. Harper made the best start, but as they filed through the chicane to complete their first lap Pearson was right on his tail. Lapping four seconds faster than anyone else, the two leaders soon pulled out a gap. Pearson appeared poised for a serious bid in the closing stages, but instead spun, and the race was Harper's.

The Shuttleworth Trophy for pre-war cars (another Pine Cliffs event) was expected to be a cinch for Anthony Mayman in his invincible 2-litre ERA, R4D, the winning combination in this race the previous three years. There was a bit of a surprise therefore when practice times were announced and he was almost three seconds off pole. Peter Hannen, who had run Mayman so close at Silverstone, clocked 1m27.2 in his 1½-litre 6CM Maserati, against Mayman's best of 1m30.1. It transpired that the champion had been taking things easy, as he was worried about low oil pressure, but there were no such worries after a bit of fettling by Jim Fitzgerald and the crew before the race.

Mayman lined up in second spot on the grid, with Paul Jaye's 2-litre Alta behind, after equalling the ERA's best lap. On times these three were safely clear of Mayman's 1½-litre ERA (driven by his cousin Chris) and the similar cars of Tetsuya Takahashi (Tony Merrick), Peter Mann (John Ure) and Sally Marsh (Duncan Ricketts), which were next fastest. Bscher, whose 4CL Maserati was expected to be right up there, managed only one lap of practice before magneto trouble set in, though it was, the crew hoped, repaired for the race. But Chris Mayman had to scratch his entry when gearbox trouble could not be remedied in time. Other non-starters included Felton's P3 Alfa, due to make its first appearance for some time and Charles Dean's T51 Bugatti.

Jaye made a great start, the light green Alta spearing between the two black cars on the front row. But by the end of the opening lap Mayman was clear, and Hannen was in second place ahead of Jaye, Merrick, Ricketts and Ure. Ricketts was soon past Merrick, and by the fourth lap had Jaye too. Bscher's troubles continued, the Maser stopping with a repetition of its magneto trouble.

With the race half run Mayman was well clear of Hannen, who was having trouble with his brakes, the department in which the Maserati usually shines. Merrick had fallen back with a smoking motor but was still sixth. Also smoking was Robin Lodge's 6CM Maser, which stopped at the pits about this time.

It was Ure who provided the only remaining bit of excitement as, closing on Jaye as the end approached, he spun the cream-coloured ERA at the chicane.

At the end Mayman had 13½ seconds in hand over Hannen, who in turn was 10 seconds up on Ricketts. There were bigger gaps to Jaye, Ure and Merrick, with Mark Gillies in the Treen Riley and Guy Smith's single-seater Frazer Nash the only other unlapped runners.

That Hannen had been trying is shown by his best lap time, 1m26.7, but Mayman was three-tenths faster. Palmer's rare 1½-litre Squire sportscar won the next five-lap handicap, from Freddie Giels (Frazer Nash) and the fastest car in the race, Fidler's Lagonda. Then the postwar cars came out for the third Pine Cliffs race of the day. This would be between Harper and Mayman, Harper representing the new wave with his rear-engined Cooper T53 and Mayman for the old school in his front-engined Lotus 16. Both cars are, of course, powered by the four-cylinder 2.5-litre Coventry Climax engine.

In practice Harper got down to 1m22.1, Mayman to 1m22.6. This didn't prove anything, as both drivers are sufficiently experienced – and sufficiently wily – to keep something in hand. The second Lotus 16, Chris Drake's red car, was a non-starter after breaking a universal joint in practice, while Stretton's new T51 Cooper was not quite ready, and Hannen, who had given Mayman such a run for his money at Silverstone, did not enter his T51. Leventon's Lotus 18, surely the entry with the most potential, was another scratching, having encountered mechanical difficulties at Montlhéry the previous day.



Mayman's invincible 2-litre ERA R4D which has now won the Shuttleworth Trophy four times.

This was, to a certain extent, a repeat of the sportscar race, with the two leaders running nose to tail and quickly opening up a gap on the rest. This time, though, it was Harper doing the chasing, for Mayman always seemed in control.

But Harper never let the Lotus get more than inches ahead, and going into Redgate for the seventh time was even closer to the Lotus' tail, if that was possible. Down the back straight he took his chance. As the leaders came up to lap a bunch of tail-enders the Cooper dived through taking the lead and putting a couple of slower cars between himself and Mayman. And that was that. Harper carried on to win while Mayman, worried now about a transmission noise, let a gap of 1.8 seconds grow over the remaining three laps.

Roddy MacPherson had his Cooper-Bristol sliding beautifully on Donington's turns to put the drivers of many newer – and more powerful – cars to shame as he quickly got the better of the rear-engined 2-litre Cooper-Climaxes of Rod Jolley (T51) and Gerry Porter (T43). This trio was almost a minute behind the first two at the end, with Beasley, thinking he should have bought new tyres for his Cooper-Bristol after all, having kept them in sight throughout.

Lodge in the only 250F Maserati in the race ran to lonely seventh place, a lap back, while Bob Burrell went better than ever in his A-type Connaught, and got the best of a battle for the next place, ahead of Lockhart's wonderful old Rover, Graham Burrows in another Cooper-Bristol, Mark Gillies (Riley Treen), Peter Mann (ERA) and Barrie Gillies (Dixon Riley). Positions had changed almost every lap in this bunch, which enjoyed a great scrap.

Fastest lap had gone to Mayman in 1m23.0, a tenth faster than Harper's best. Nobody else came within five seconds of either. Now that Mayman's Lotus has finally been beaten, the question everyone is asking is will he continue to champion the front-engined cause, or will he bring out a rear-engined car? Mayman got straight into his 6C-34 Mille Miglia Maserati replica, running stripped of lights and wings, for the Goddard Trophy race, which was supported by Cape Boards Ltd. Jaye made another lightning start in the Alta, with Barry Summerfield's supercharged 4.6-litre Avon-Bentley rocketing up to a brief second, before Mayman passed. Towards the end the red Maser appeared to close slightly on the Alta, but Jaye was still 1.8 seconds ahead at the chequered flag. Young Matt Grist (Monza Alfa) passed the Avon-Bentley for third before the end, this pair finishing well clear of Boswell's Bequet-Delage and the rest of the field.

During the early part of this race Adrian Watney (Brooke Special) and R C Browning (Alvis) had a coming-together, but neither was seriously damaged.

The Nuffield Trophy was run at Donington in the 1930s as a *voiturette race*, and was revived by the VSCC as a part of the Shuttleworth Trophy. This year the Club listened to the pleas of the 1500 cc drivers and ran the race separately. In both its manifestations the Nuffield had largely been an ERA/Maserati duel, and the 1991 race was seen as a re-run. But things did not look too good for the ERA side before the race, as the fastest cars, those of Chris Mayman and Tony Merrick, non-started. This left Ure and Ricketts looking a little outclassed, as their best practice times had been in the 1m32 bracket, and pole man Hannen had recorded 1m27.2 for the Maserati team. True, Ricketts had improved to 1m28.1 in the Shuttleworth, but Hannen's time in that race had been 1m26.7.

On the other hand, the Maserati driver was still not confident about his brakes, or about his engine, as the supercharger had been sucking in oil during the earlier race.

Four ERAs started the race, Ure (in Peter Mann's R9B) and Ricketts (R1B) being joined by Pattinson (R6B) and Tony Stephens (R12C). Hannen was backed by Bscher, Lodge, Dan Marqulies, Richard Bond and Sean Danaher in other Maseratis. Three Rileys and a pair of Lagonda Rapiers made up the field. The Maser team lost one car on the warm-up lap when Bscher's 4CL cut out, its magneto still not right. It was Bond who led at the start, thrusting his 4CM Maser (which was entered by Margulies) into a short-lived lead ahead of Ricketts and Hannen. But Hannen was through to the front by the first corner, and before the standing lap was completed had a good lead over Ricketts, Bond, Ure, Margulies, Pattinson, Stephens and Danaher. The rival makes were mixing it well, with the Rileys of FC Roberts (driven by DM Robinson) and Ted Dunn keeping up too. But another blow to Maserati hopes came when Lodge motored his 6CM into the pits, completed another lap after adjustments, and then wheeled it away. And the whole Maserati attack collapsed after just one more lap. Hannen, the race apparently in the bag, eased up, allowing Ricketts to edge a little closer. But then the black Maser peeled off into the pits, and was retired with engine maladies.

This left Ricketts unchallenged, building his lead to six seconds by half-distance and almost 14 by the end. Ure remained comfortably in second place, while Pattinson found a way past the Margulies 4CL and then Bond. This made for an ERA 1-2-3, and ensured that the ERA team won the Coy's Challenge (presented after the race by Coy's of Kensington managing director Pattinson). Maserati rebuild specialist Danaher, at the wheel of Pattinson's 6CM, finished fifth, while Margulies, Stephens, Robinson and Dunn completed the list of cars to go the whole distance. Bond's enthusiastic start had earned him a 10-second penalty, but this did not affect his fourth placing; a similar award to Margulies, however, dropped the veteran Maserati driver to seventh.

Ian Rowe (Riley special) just held off Seber's fast-closing Wolseley to win the last handicap of the day, with the Hannis Alvis third. Mason's Riley was fourth, but set fastest lap.

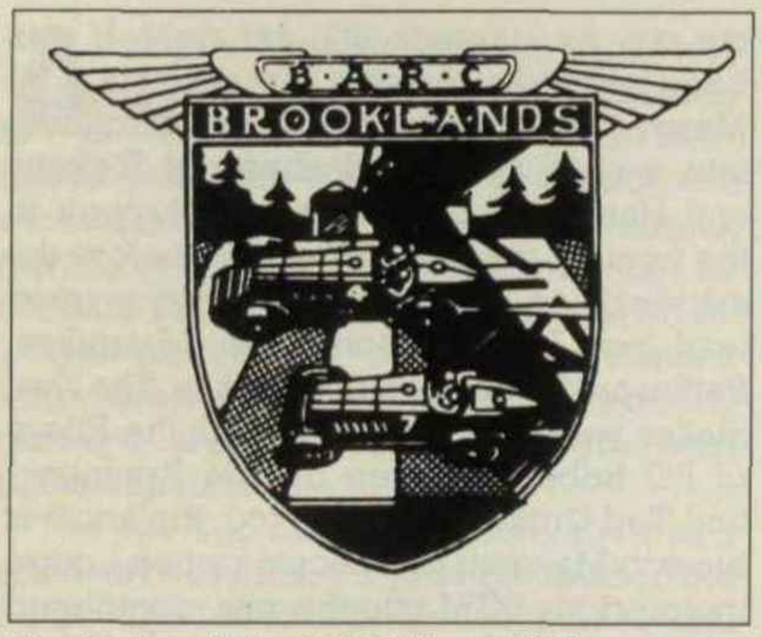
Matthew Grist took a good win in the five-lap scratch race which closed the 11-race programme, chased to the line by Dunn's Riley. Caroline brought his repaired Morgan home third, with a gap to Stephen Davie's Dobbs Riley and the Thompson and Fletcher-Jones Lagonda Rapiers. John Giles (AC/GN) finished between these two on the road, but behind them after the application of a 10-second penalty.

KHRC

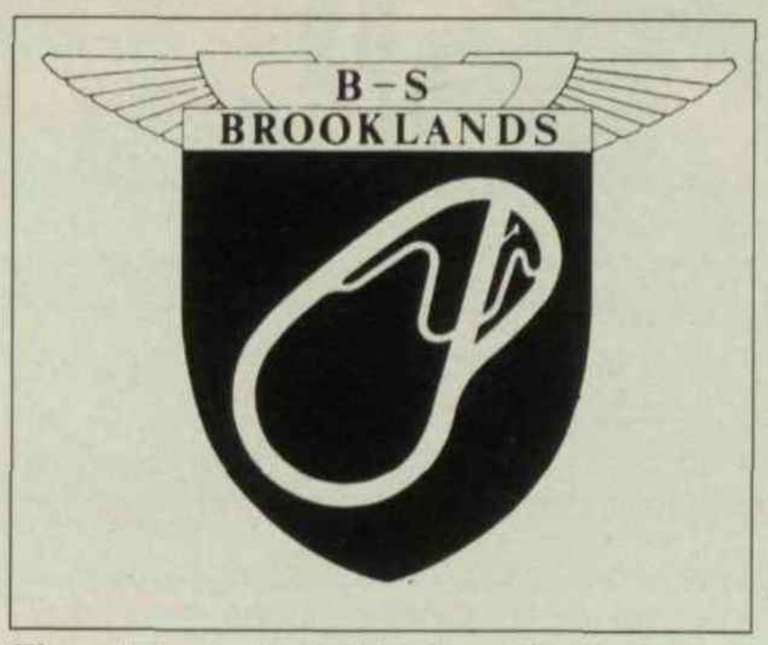
VSCC Vintage Race Meeting, May 27, 1991

John Hollan Race: 1. DD Caroline (Morgan) 69 mph; 2. FP Morley (Napier-Bentley); 3. S Harper (Morgan). **Scott-Brown Race:** 1. J Harper (Jaguar) 78 mph; 2. G Pearson (Lister-Jaguar); 3. DJ Ham (Lister-Jaguar). **Shuttleworth Trophy Race:** 1. AJS Mayman (ERA) 80 mph; 2. PML Hannen (Maserati); 3. D Ricketts (ERA). **Allcomers' Race;** 1. J Harper (Cooper) 83 mph; 2. AJS Mayman (Lotus); 3. R MacPherson (Cooper). **Nuffield Trophy:** 1. D Ricketts, 76 mph; 2. JW Ure (ERA); 3. JR Pattinson (ERA). **First 5-lap Scratch Race:** 1. J Freeman (Aston Martin) 64 mph. **Second 5-lap Scratch Race (John Goddard Trophy):** 1. PL Jaye (Alta) 74 mph; 2. AJS Mayman (Maserati); 3. M Grist (Alfa Romeo). **Third 5-lap Scratch Race:** 1. M Grist (Alfa Romeo), 71 mph. **First 5-lap Handicap:** 1. LA Thompson (Lagonda) 60 mph. **Second 5-lap Handicap:** 1. RA Palmer (Squire) 54 mph. **Third 5-lap Handicap:** 1. IA Rowe (Riley) 56 mph. **Fastest lap of the Day:** Mayman (Lotus) 83.0 sec.

Leaders to date in the MOTOR SPORT **Brooklands Memorial Contest (Pre-war cars):** Mayman, 67 points; Grist, 44 points; Morley, 31 points; Hannen, Jaye, Caroline, Ricketts and JT Mason, 26 points each.



The badge of the BARC from 1931 onwards.



The existing badge of the Brooklands Society.



The badge of the new Brooklands Club.

New Badge

When we referred to the new Brooklands Club last month it was inferred that members applying to join, at £500 a year plus VAT, had to be proposed and seconded. This is apparently not required, as it was in the perhaps more autocratic days of the pre-war Brooklands Automobile Racing Club.

We also said that the new Club has a BARC car badge. In fact, this badge differs from that of the former BARC, as the illustrations show. For instance, it depicts an aeroplane and a more prominent view of the Members' bridge (a new version of which has been reinstated over the banking) and a single racing car, which is obviously practising, because it lacks a racing number. This we regard as a good thing, if it avoids confusion between those who join the new Club and those who were members of the BARC before the war and who may still wish to display the BARC badge on their cars, or who own cars entitled to wear the BARC badge. When the Brooklands Society came into being in 1967 some members of the Committee thought that, if permission could be obtained, it would be nice to use the former BARC as the car emblem of the new Society, the Brooklands Automobile Racing Club having become the British Automobile Racing Club, operating at Goodwood.

I was against this, because I thought it would be unfair to those, as explained above, who had a right to display the other badge on their cars, which applied only to those who had belonged to the BARC prior to the war. Having founded the Society my view had some clout and it was agreed that a separate Brooklands Society car badge be designed, as shown above. WB

Brooklands terrain is being changed. Last March the Mayor of Elmbridge officiated at the opening of the first office building to be completed by Trafalgar House Brooklands at the Brooklands Business Park, preparatory to residential development off the Brooklands Road, Weybridge. To help mark the occasion the Brooklands Museum sent their replica 1909 Bleriot monoplane, a 1937 MG and a 1922 Zenith-Bradshaw motorcycle, although it is difficult to appreciate the link between new houses on the old site and the machines which used to fly and race there. WB

James Fack of the STD Register is organising a rally of all Talbot cars in the UK at Ingestre Hall, near Stafford, on July 13th, with Sunbeams and Darracqs also welcome, this house having been the seat of the Chetwynds, who later took the name Chetwynd-Talbot and became Earls of Shrewsbury, from 1604. The 20th Earl was founder of Clement Talbot Ltd, and he built the great Ladbroke Hall motor works in London, called after his wife's childhood home in Warwickshire. Ill health and the death of a son in the war, in 1915, caused him to sell out to A Darracq & Co late in 1919. The rally is to include a picnic, tea at the Hall, a treasure hunt and dinner, with the 22nd Earl as guest of honour, in Uttoxeter. Details from J Fack, 071-581-0650 or the local organiser, J Naylor (0782-318-247)

It seems that we were wrong when we said that the historic hotel, *The Hand & Spear* by Weybridge Station, is to be demolished; it is the interior that is being modernised. We also hear that improvements are in hand at the Beach Hotel at Pendine, where many famous record-breaking drivers used to stay. There is even talk of hoping to house Babs there!

750 MC National Austin 7 Day

On July 7th hundreds of Austin 7s of all kinds will be making their way along the pleasant highways and byways that lead to the National Motor Museum at Beaulieu for the great assembly of these famous little cars. There will be a full afternoon of entertainment. Details from Ken Cooke, 26, Woomersley Road, Stevenage, Herts, SG1 1SR. (0438-354001).

The big VSCC fixtures this month are the



The changing face of Brooklands – the Ideal House, opened recently on the site of the famous racing track, with accompanying museum vehicles at the opening to underline these changes.

Shelsley Walsh speed hillclimb near Worcester, in conjunction with the MAC, on July 6th, public admission to which is £7 per head, accompanied children under 15 free, and the Mallory Park race meeting, near Leicester, a good circuit, new to vintage racing cars and with an interesting hairpin bend, which has good spectator viewing. The programme will include a repeat of the Edwardian Race which was so greatly enjoyed at Oulton Park last year. Entries have closed. Spectator admission £5 per person, including Paddock transfer.

We regret to have to report the death, at the age of 97, in a Littlestone-on-Sea nursing-home, of George Took, who raced AC and Lea-Francis cars at Brooklands, finishing in the 1930 JCC Double Twelve-Hour race in his second Lea-Francis, with Arthur Bradwell as his riding mechanic, Palmer's of Dover having installed a 25-gallon petrol tank in the body. Mr Took also took part in many other competition events and his mind was keen to the end; in fact not long before he died he was recalling Brooklands' events and personalities, and of working with Prof AM Low at Southern Command during the war. Our condolences to his son James and family. A reader who has a fine silver cup awarded by JC Archer of the BMCRC to MD Whitworth for an aggregate award at Brooklands in 1936, riding it is thought the Rex-Acme in the Brooklands Museum, also possesses the plinth of another cup, awarded to Hailwood for 114.23 mph in an MG Midget, probably during the 1931 BRDC 500 Mile Race and would like the cup to unite with it. Letters can be forwarded. Coincidentally with mention in the May issue of a Leyland clock, the current Friends of The National Motor Museum Newsletter contains a most interesting article by Michael Ware on them, their unusual mechanism, how they were made and wound, etc, listing details about nine of them, including the one once to be seen at Shap. These clocks are on display at the NMM, Cobham Bus Centre, and the Kendall Brewery Art Centre. A correspondent also recalls the Shap clock and also Swan, an Edinburgh contractor, who used Rolls-Royce chassis turned into trucks, one a 40/50 hp converted into a six-wheeler, and an uncle who had a big racing Austin (one of the 1908 GP cars?) with touring bodywork, formerly owned by Sir Ian Colquhoun of Luss.

A Bit of a Record!

Derek Edwards of Aston Martin and AMOC fame has driven, the AMOC informs us, in 3000 races, and has won 650 awards in his 40 years of racing, 450 of them in Aston Martins. For the Club's Silverstone Meeting on June 22nd he flew back from driving in the 4000-mile Great American Race — in an Aston Martin of course, co-driven with Yasuhiko Shimazaki, to take part in his 40th St John Horsfall Trophy race that afternoon. He rushed away in the hope of remaking contact with his co-driver somewhere in N Carolina — no rules about resting between races in Club events! At Silverstone Derek was presented with a painting by the AMOC President Viscount Downe and Club founder Mort Morris-Goodall, to commemorate his drive in 40 out of 42 St John Horsfall races. Edwards began in 1952 on bikes, graduating to Aston Martins and F2 Coopers, Jaguars and Connaughts. He has won the Morris-Goodall Trophy 18 times and the VSCC Peter Simms Trophy 10 times.

His June feat should encourage those of us who are approaching Octo-status because Derek's age is 75. And to think that he was once banned from driving in a VSCC race because he had forgotten his medical certificate. WB

VSCC Racing Drivers Challenge Trophy

The VSCC's 1991 Championship has a prize fund of £10,000 and is divided into classes for vintage, pre-war and post-war Historic cars, the last-named including rear-engined F1 and F2 single-seaters from the pre-1961 period of racing. Last year 38 drivers entered and more should be competing for points this season, with ERA, Bentley, Cooper-Bristol, Lotus, Maserati and Bugatti historic racing cars. Already points will have been scored at Silverstone (two meetings) and Donington Park and the remaining meetings at which this Championship will be contested will be those at Mallory Park on July 7th and Donington Park on September 21st. WB

VSCC Scottish Trial

The VSCC moved its activities to Scotland on May 19th, when 54 competitors took part in a trial with a dozen sections to tackle, there being but two non-starters, an Alvis and a Singer Nine. The Campbell Trophy was won by R Thwaites's A7, the Sammy Davis Cup by W Gordon's A7, and as well as these First Class Award winners those who also took firsts were P Blakeney-Edwards (Frazer Nash), G Toms (Fiat), M Holt (Ford), and D Hallam (A7). Second Class Awards were obtained by W Parker (A7), J Evans (A7), P Longhurst (Riley 9) and D Hescroff (AC), Third Class Awards by J Diffey (A7), R Winder (A7), A Jones (A7), H Spence (Lea-Francis), Miss Winder (A7), P Roberts (Riley) and P Harris (3-litre Bentley). WB

A reader is hoping that someone will be able to tell him what became of a 1935 Riley Kestrel four-light saloon, Reg No JU 6479, which his father purchased from a Mr Ted Fogg of Bexley Heath in March 1956 (for £122) and sold in March 1960 to a lady in Wilmington, Kent, who used it as a second car to take her children to and from school. Letters can be forwarded.WB

Castrol Progress

Things seldom stagnate, they either fade or go forwards. The affairs of Castrol (UK) Ltd are very much in the going forward category, which is good news to the editor who, for longer than he cares to remember, has made a point of using Castrol oil in his engines.

For instance, the world-renowned Castrol GTX has developed into GTX2, with all the additives essential for effective lubrication of modern engines and that means an oil which is catalyst-friendly and able to cope properly with turbocharged power units in which the turbo rotates at up to 110,000 rpm and oil temperature may reach 300° deg C when the engine has just been shut down, which will bake inferior oils and cause solidified ash to block turbocharger oilways, with resultant bearing failure. Castrol GTX2 was developed and extensively tested on turbo installations to obviate this problem, as well as being well suited to other engines in which oil temperatures can reach 280° deg C on piston and cylinder walls and gudgeon pins, with more than 450° deg C transmitted from exhaust-valve heads. The additives in GTX2 prevent oil-frothing, oxidation which thickens oil into gums and laquers, and they also look after hydraulic tappets in which compressible oil is detrimental, and they chemically coat high-pressure parts such as cams and cam followers. Castrol 10 x 40 GTX2 mineral oil is now sold in 5-litre plastic packs.

Another Castrol development is semi-synthetic 10 x 40 TAT oil, for today's high-output engines, often of the twin-cam multi-valve type, operating under extremely varied road conditions from Motorway cruising to town crawling, with oil changes at 12,000 miles instead of the former 6000 miles.

Castrol's great achievements in the fields of motor racing, motor cycle racing and aviation go back to long before the First World War and they continue unabated. In fact, so long is the list of successful cars which scored in 1990 using Castrol lubricants that it is impossible to include it here. It runs through not only all kinds of motor racing but rallying, drag racing, motorcycle sport, rallycross, karting, hill climbs, and even the World Microlight Team Championship, with Mercedes-Benz and Jaguar, in World Sports Car Championship races, among the many famous teams which rely on Castrol. Castrol developments are well portrayed in a new video *The Future Starts Here.* WB

Out of the Past

Christopher Mann, of London N1, who is associated with *Bodyshop Magazine*, a journal for the paint trade which recently issued a supplement on refinish paint, of interest to those restoring cars and showing the changes which have taken place over the past few years, has sent us some interesting information about cars owned by his father-in-law, youngest son of



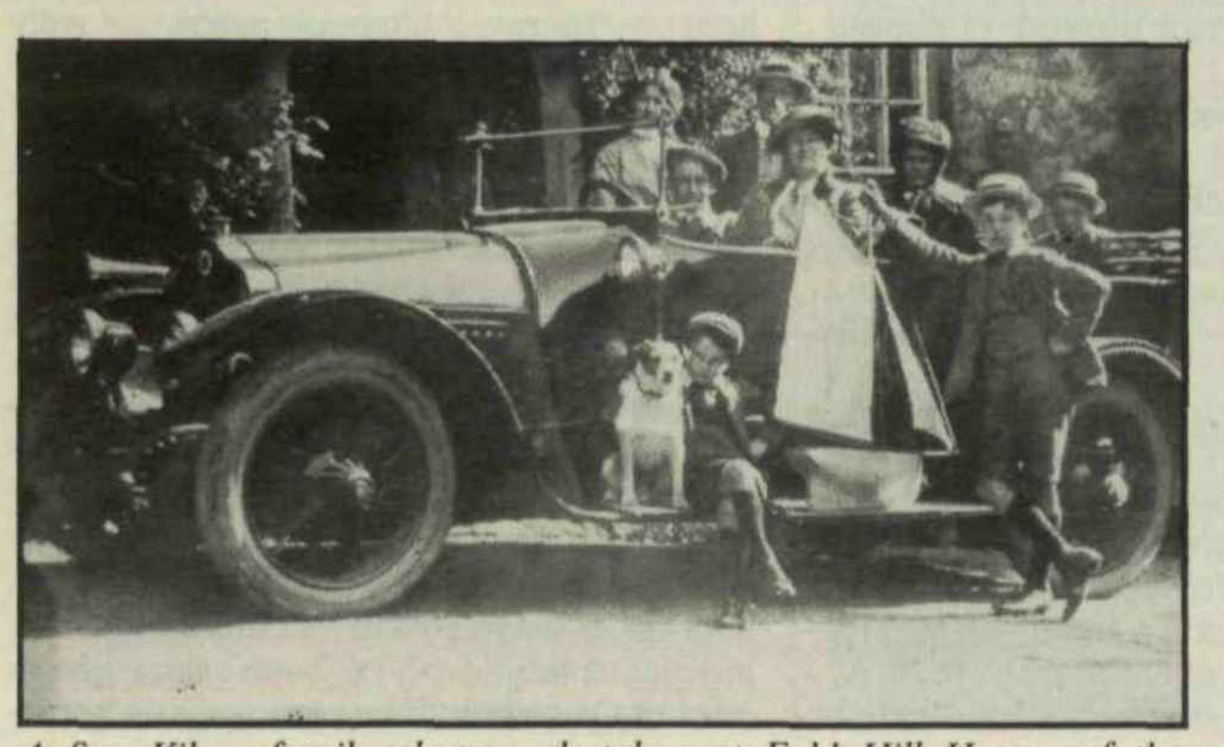
Albert Kilner's wife driving what is thought to be a Fafnir, with Albert Kilner and their three sons as passengers.

Albert Edward Kilner of Huddersfield (1876-1952).

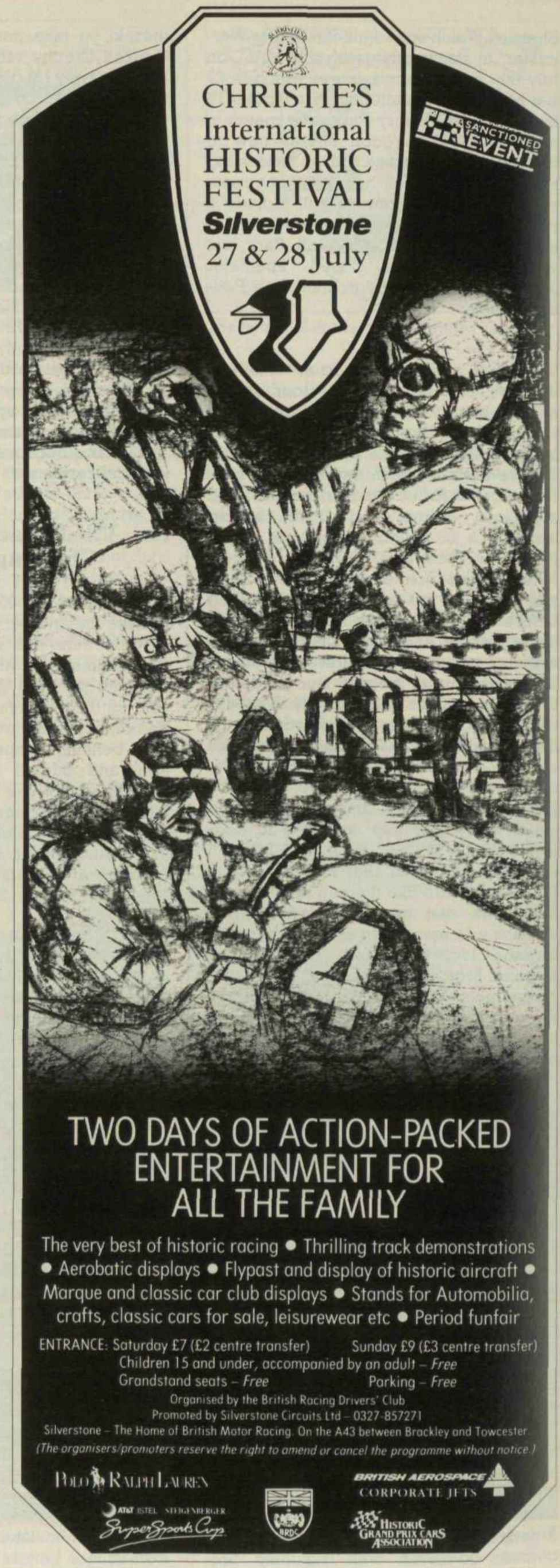
He was MD of the family firm of Yorkshire woollen yarn spinners and a great motoring enthusiast. One of his first cars was thought to be a Fafnir. Later came a whole series of Minervas, one of which is seen outside the family home, Roe Head, Mirfield, which had been the school where the Bronte sisters were pupils. This Minerva was converted into a motor caravan, which did nothing for its roadholding, and was eventually given to the owner of a Filey caravan site, later a Butlins Holiday Camp. Mr Mann's father-in-law and six of his brothers went to Oundle School and a fine open Minerva appears at the *White Hart*, Thrapston, not far from there. One of the best pictures, however, is of an Edwardian Minerva at Fold Head House, Mirfield (the family seat prior to buying Roe Head) with all the family aboard, dog and a model yacht included and a nursemaid in the background, taken around 1914. In the 1920s Mr Albert Kilner had two Isotta-Fraschinis, one with an imposing coupé-de-ville body.

The father-in-law's brother is seen photographed with a D8 Delage at the aforesaid Primrose Valley caravan site; his father gave him a Lagonda on his 21st birthday. The Delage was superseded by two Ballots, one with black fabric body and prone to catching fire, after which came a black 540K Mercedes-Benz which Albert Kilner sold for a song to Appleyards of Harrogate after being stopped three times in a week for speeding — he felt that this might have been due to the unpopularity of German cars, with war approaching. Alastair Kilner inherited his father's love of cars and for many years used a 25/30hp Rolls-Royce as family transport. Mr Mann's wife recalls hiding on the floor when being driven to school in it because it was not a normal car — as did my daughters when in vintage cars and Roger Collings' girls when taken to school in the 1903 Mercedes. This Rolls-Royce was replaced by a Phantom III which was kept until the early 1970s. Roe House was sold in the 1960s and apparently became a monastery. Which reminds me of a friend who went to Mitfield to take Holy Orders and came home with a fellow student one winters day to London in the latter's open sports Salmson, both wearing their cassocks to keep out the cold.

WB



A fine Kilner family photograph taken at Fold Hill House, of the Edwardian Minerva.



Stuart Turner, who needs no introduction, and former professional jockey John Taylor, who became European Rallycross Champion and then Tarmac Rally Champion, have written jointly a book useful to those who aspire to drive in competitions. Published by Patrick Stephens/Haynes, at £15.95, *How to reach Top* covers all that such aspiring competitors need to know before hopefully embarking on their chosen careers. Racing is covered as well as rallying and as the chapters unfold over the 208 9¼in x 6in pages one feels the starting grids fast approaching! There is even a rather improbable questionnaire for anyone trying to find a driver for his precious car, advice on obtaining sponsorship, how to speak in public, and a morbid Appendix on First Aid. And an equally off-putting one on the conditions appertaining to renting a hire car! But don't be put off; there is much of value and a great deal of helpful information as well. WB

The Rolls-Royce Heritage Trust has published another book in its truly excellent *Historical Series*, as reviewed previously in this column. No 17 covers *Charlie Rolls — pioneer aviator*, by Gordon Bruce, and is a fascinating account about the aviation aspect of the short life of the Hon CS Rolls, the first R of Rolls-Royce. The family tree, Rolls's ballooning, his links with the Wright brothers, how he tried unsuccessfully to embark Rolls-Royce Ltd on an aviation policy in the pioneer days, the aeroplanes he owned, and his army aviation associations, all are dealt with in meticulous style by this knowledgeable author. Rolls died when his aeroplane crashed at Bournemouth in 1910 while attempting a spot-landing contest, and the book reveals new facts about the accident, including photographs and diagrams, and a detailed look at how the flying-ground was laid out, in reference to the crash. Bruce who was Company Secretary to Short Bros, who built many of Rolls's aeroplanes, even pinpoints the exact place of impact of the machine in which Rolls crashed.

The book has many other historic illustrations; it refers to Silver Ghost (or 40/50hp) R-R cars used by Rolls, and is altogether a very readable and valuable work, in the usual format of these very creditable historic publications. Moreover, with the present rising price of books, the value is outstanding, the price being £6 to non-members of the Trust, including postage and packing. Make cheques payable to Rolls-Royce Heritage Trust, PO Box 31, Derby.

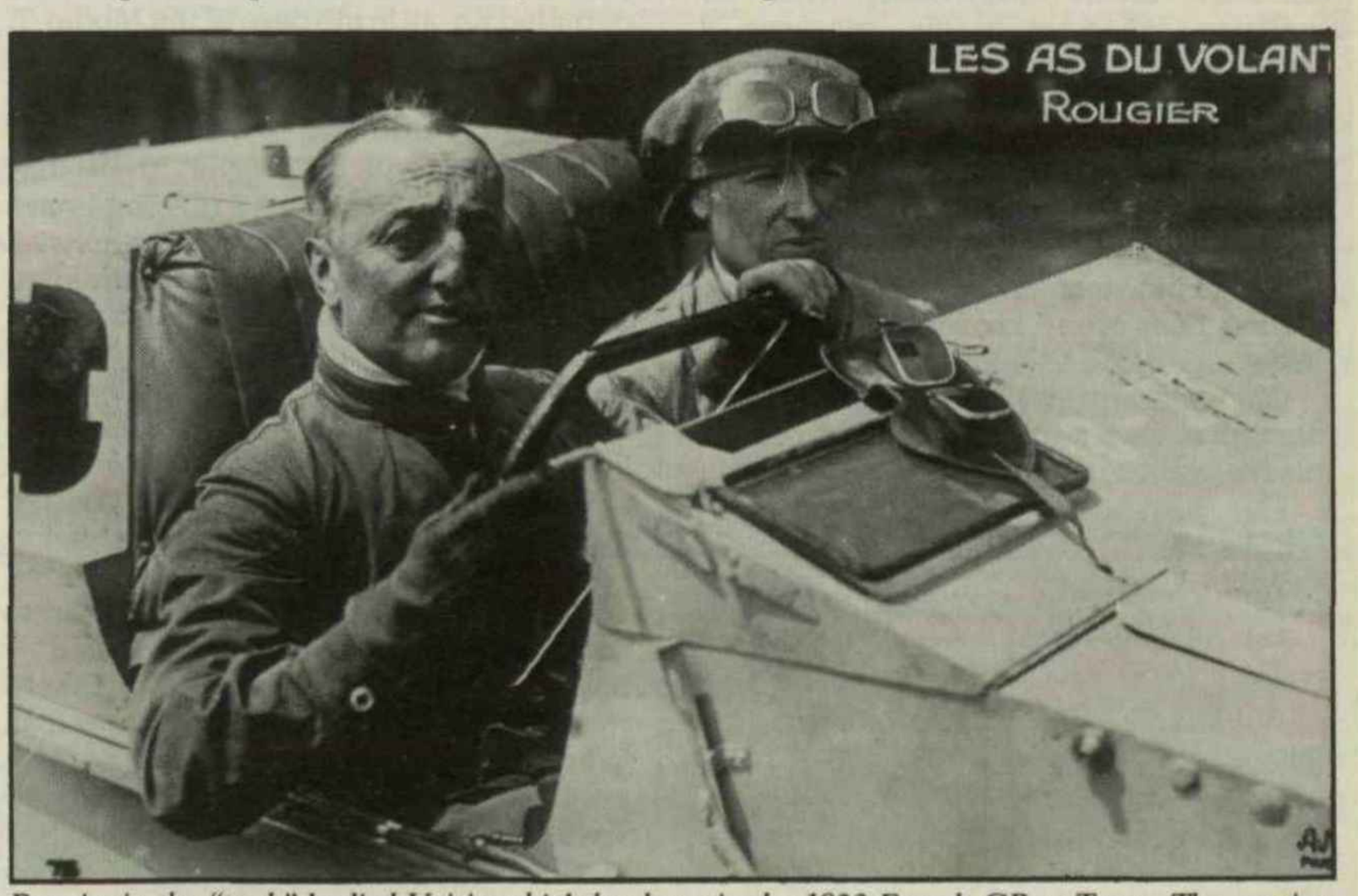
Last month we reviewed the new book *Automobiles Voisin — 1919-1958* by Pascal Courteault, published by New Cavendish Books at £100. Such an ambitious publication merits further comment, after another flick through its 374 pages. The elegant drawings of Voisin cars and Gabriel Voisin's pertinent comments on many aspects of motoring and selling his cars in the vintage years are of much appeal, including his poetic description of a track record bid, as are the book's references and pictures of the lesser Voisin products, the cyclecars and the motorised bicycle of 1919. Not to overlook much illustrated material on the Voisin inflatable and other portable houses, complete with garage, of course. Show stands give an inkling of what Voisin offered to the visitors and one is reminded that he even offered a simple camion. Some of the cars are very sporting, like the C1 *superlegere*, and many of the open models which followed. The clean layout of many of the engines is clearly apparent. Three of the 12 cars owned by the Royal Court of Yugoslavia are illustrated, with their coupé-de-ville bodies, Royal crowns on radiator caps, and gas-searchlights, a contrast to the racing Voisins, of which the 18hp model racing in the 1922 *Concours de Consommation du Mans* had four up in its boat-like body.

Very low and long-tailed is the Strasbourg sports-racing Voisin with the Eifel Tower in the background, and one meets again some of the lesser known drivers who raced these cars, like Ohlsson Kiriloff, Gulotta, de Presale, van Doorninck etc. The many illustrations of the 1923 GP cars with their revolutionary streamlined "tank" bodies repay long study, engine internals included, likewise their sports-racing counterparts. Of production models, there is a very Bentley-like Voisin with bodywork by Jarvis of Wimbledon. One unusual picture shows one of the six chassis which were used for eight days and nine nights non-stop to drive pumps during the floods at Issy-les-Moulineaux in 1924. But it is the many Voisin record-breaking cars that get some of the most interesting and frequent photographs and descriptions. It must be recognised that Voisin preceded Citroën's wheel-tracks in going for records of stupendously long duration, for instance up to 17 days at an average of over 119 kph. All alloy engines with aluminium con roads and magnesium pistons were used, but the V12 record car had a crankcase of welded sheet metal.

Altogether a splendid book, full of wonderful pictures and drawings. The 1924 sports-car race run in conjunction with the French GP at Lyons was preceded by a night reliability run, from midnight to 4am, in which the starters had to be used, hoods erected for three laps and in which there was a petrol consumption rule. After which the drivers faced the race proper at midday! The book tells us that Rougier had changed his Solex carburettor for one of another make in a secret commission and was delayed for 18 minutes in getting his engine going, then crashed and broke his arm, Gabriel Voisin being furious when he heard of the carburettor change. There was also a comment that the Voisins had no proper chassis and should have been disqualified. In the end Peugeot was the winner. More lesser-known drivers are listed — Dauvergne, Gauderman, Piccioni, Bisson.

One very interesting reference is to Rolls-Royce asking Voisin for information on their V12 engines, including that in the record-breaker, when planning the Phantom III, and of how honoured Voisin felt, and how in recognition he was allowed to try a PIII later on. A book you shouldn't miss. It should be known that Peter Hull did the English translation without taking a fee, in order to benefit the Michael Sedgwick Memorial Trust which assists with worthwhile motoring books that publishers might otherwise not feel inclined to finance. WB

A reader, Paul Shabsachs of Manchester, after reading the review of *Automobiles Voisin* last month, reminds us that the correct title of Gabriel Voisin's book about his life with aeroplanes was *Men, Women and 10,000 Kites*, an English language edition of which was published by Putnam in 1963. He also sent us the photograph of Rougier's GP Voisin. WB



Rougier in the "tank"-bodied Voisin which he drove in the 1923 French GP at Tours. The steering wheel outdoes that on MG EX179 or an early Austin Allegro!

Opinions expressed are those of correspondents and not necessarily those of MOTOR SPORT

Gopsall Park

Sir
With reference to "Gopsall Park — Out of the Past" (April 1991), is the statement that Sunbeam found a speed-trial course on Lord Waring's estate – Gopsall Park was one of the estates of Earl Howe. I saw a motorcycle grass track meeting there in 1950. The house had apparently been demolished and there was evidence of army (or some service) occupation. The local pub (in Twycross) is still called *The Curzon Arms*.

Since writing the above, however, I have found from *Portrait of the Shires* (Bernard Newman, 1968) that Gopsall Hall has now disappeared, and with it the connection with the Howe family. During the war it was occupied by the Army and its occupants made such a mess of the place that it was not worthwhile to repair it.

Some years ago there was a notice board indicating occupancy by a Govt Dept but on a recent visit I noticed this has disappeared. I enquired at the local post office (Twycross) and was told that the land is now used for farming.

L Talliss,
Coundon, Coventry.

Collector's Defence

Sir
I have been a regular reader of MOTOR SPORT for many years and over recent months have entirely agreed with DSJ's comments regarding the hype that is very evident in the motor trade about older cars.

I would, however, take issue with him in his latest article (May 1991) when he includes collectors in his criticisms. I myself am a small collector (4 cars) which I have acquired over the past nine years. They are all MOT'd, taxed, insured and driven regularly by myself and my family ensuring that they do not deteriorate. They give me great pleasure, each in its own way, and I have no intention of selling any. To the best of my knowledge, none are fakes.

On behalf of myself and others lucky enough to have more than one car, please, please, do not upset us again.

GE Turner,
Penylan, Gwent.

Out of Touch

Sir
I feel your contributor WPK was a little too condescending, and perhaps a trifle out of touch, in his global comments about diesel engined cars in the May edition.

Would we not all prefer to spend every waking hour behind the wheel of a 911 or Type 35, wearing out our local bit of Shelsley or exhausting the *Autostrada del sol?* The reality is somewhat different. When paying for day to day motoring out of taxed income, the modern small diesel engine is cheap to run, reliable, and user-friendly, and these days a serious alternative to the petrol engine. Many readers would consider nothing else.

That is, of course, for day to day motoring. Now motoring for serious pleasure, that is another matter entirely!

Fyrth Crosse,
Redland, Bristol.

How to Motor Trade

Sir
The article on Motor Trading after the 1914/18 war by WB rather reminded me of similar activities in our own family when my father came home from France where he had been Workshops Officer with the ASC, repairing everything from Despatch Rider's bikes to tanks. Home again, he kept in touch with a fellow officer who attended the auctions of ex-Govt vehicles at Grove Park, buying suitable vehicles and railing them up to our local goods yard just outside Leeds. By this time I was 14 and my job was to sit in them and steer, while father towed them through the streets with whatever car we happened to have at the moment, to our home, where they had to sit outside in the back street, as the shed contained our Bradbury-and-sidecar.

Father would check a car over and if it was better than the one we had, he kept it and sold the one we already had. On the other hand, if it was not so good he did it up and sold it and, as WB says, anything that would run under its own power went very quickly.

Having got used to starting handles that you either swung in a clockwise direction or pulled up, as in the case of the Model-T, it was disconcerting to be faced with an engine that had to be cranked in the opposite direction, namely anti-clockwise, as with the Napier. There may be others *(Yes Humber — ED)* but I have not come across them and I have no wish to as it is a very awkward procedure, though it may be OK if you are left-handed.

The main snag about working outside, apart from the weather, was *small boys* but father had a way with them. He could put up with a lot but when they became a nuisance he would form them in a line, tell them to join hands, and one at the end to hold a door handle, then he would give the one at the other end a spark plug lead to hold. Then he would start the engine — disappearance of small boys! Or if there was the usual clever clogs who knew it all father would nonchalantly get hold of a plug top while the engine was running and then seize the offender by an ear, and that usually had the desired effect.

Father was a pioneer motorist, having started in New Zealand in 1897 by looking after the cars of neighbours and then came to Rover in England. In 1914 he went to join up at the age of 37 but the recruiting sergeant sent him away saying: "Go home Grandpa this is a young man's war," but they were glad enough to have him later.

Jack Stewart White,
Leeds.

Bentley History

Sir
I recently acquired a very fine, unique Bentley. I am restoring it, and would like to complete its history. The car is a MK VI Bentley drophead coupé made in 1947 by Vanden Plas to the order of Jack Barclay for HRH Prince Bernhard of the Netherlands. It was shipped to Holland in October 1947 and licensed RD 97 68. It was sold in 1948 to one H Reichmann. It appeared in Port Huron, Michigan USA with the rear number plate NHP 561M where I purchased it and brought it to Barbados. I have no knowledge of where it has been for all the intervening years, and it has never been registered in the USA. The front plate is DTW.

The man I purchased it from has very limited knowledge only, I purchased it from an Attorney from seized and bankrupt building sale with indications that it had come from New Orleans. The car is B 230 AK and is the one shown on page 234 of Brian Smith's Vanden Plas book, and also on page 51 of Rodney Steel's book *The Cars from Crewe*. I would be most grateful for any information I can get.

WP Mallalieu,
St Georges, Barbados.

Speed Sense

Sir
At the risk of being boring, may I point out that the exact equality (sic) of the speeds of Marriott's Stanley Steamer and K Lee Guinness' Darracq over the flying kilometre is not really so remarkable — ref "No Substitute for Litres," June 1991. The speed of 121.57 mph simply corresponds to a time of 18.4 seconds for a kilometre, 0.1 second presumably representing the limiting resolution of timing methods then in use. Implicity the actual times could have been anywhere between 18.35 and 18.45 seconds ignoring possible imperfections in the timing itself corresponding to a speed range from 121.24 to 121.90 mph. In other words, neither decimal place is in fact warranted and the practice of quoting early speeds to such accuracies is frankly nonsensical. Incidentally, all other speeds quoted in the article, with the sole exception of 112.2mph for 20 chains (of which I am consequently suspicious), similarly correspond to times to the nearest 0.1 second.

IG Berry,
Enfield, Middlesex.

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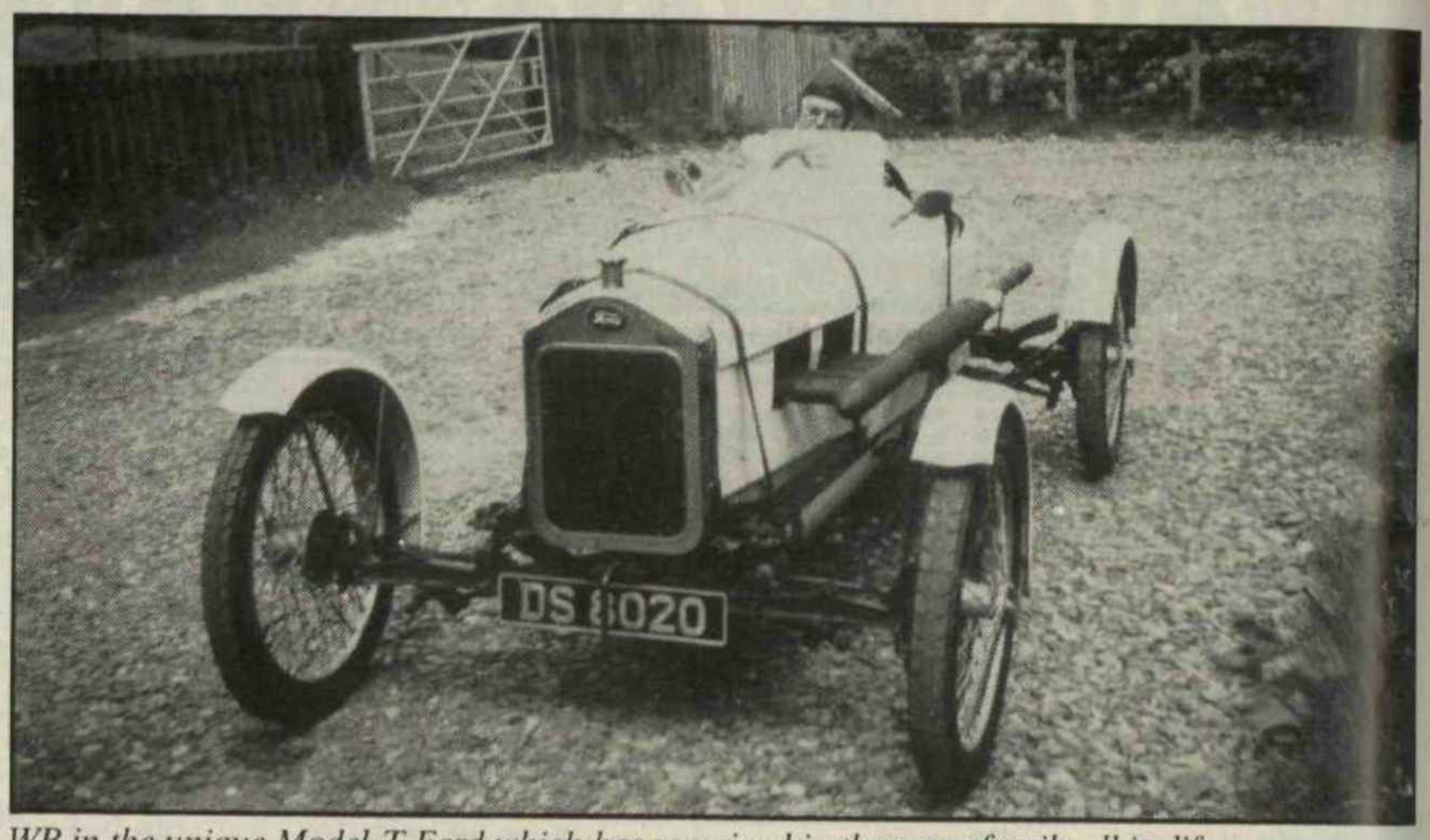
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A Unique Model-T

It is rather exceptional these days to have a visit from the owner of a pre-war racing car the history of which is undisputed, because it has remained in the possession of one family all its life. When the car also has a flavour of Brooklands about it, the pleasure from my viewpoint is further enhanced. The car I am referring to is a racing Model-T Ford which Nigel Bradshaw brought to show me after he had run it at Colerne and was on his way to West Wales.

This rather unique Model-T Ford was built by Bradshaw's grandfather around a 1917 Trafford Park chassis and very little has been altered since. This Ford Special with its decidedly racing appearance and considerable performance was laid up around 1925 and not brought out again until 1962, by the present Mr Bradshaw.

To lower the chassis the axles were inverted and the rear-axle was mounted on short arms to enable this conversion to be effected, which has increased the wheelbase by about 2½ inches. The left-hand drive steering is retained, with a normal steering-box but transverse drag-link. The body, with its slim pointed tail, is very narrow. The two-speed epicyclic transmission is normal Ford Model-T, but there is a Thornton Powerlock limited slip differential, the axle ratio being 3.0 to 1, the half-shafts of the heavier commercial vehicle size. Hartford friction shock absorbers are fitted, transversely mounted at the front.

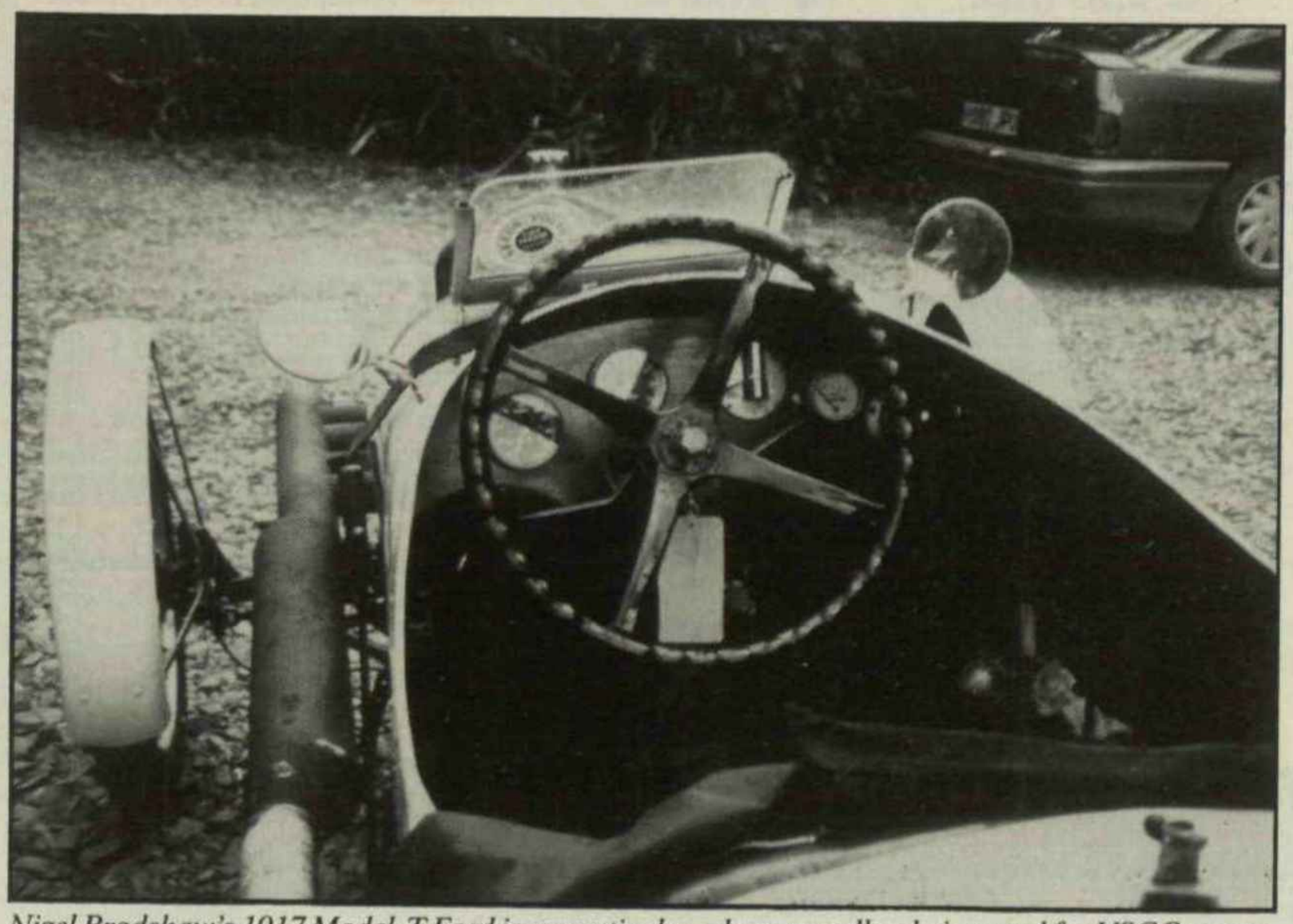
The engine is very interesting, being probably one of only two remaining examples of Craig Hunt "Speedway" overhead camshaft, 16-valve, twin-plug conversions, certainly, I would say, the only one in this country. These racing conversions were developed and sold for dirt-track and oval circuit racing in America by the Craig Hunt Speedway Engineering Company of Indianapolis. The camshaft is driven by an exposed small-diameter vertical shaft and spiral-bevel gears at the front of the engine and to enable one cam to operate a pair of valves the exposed rockers are bridged at the valve-stem ends. The valves are inclined and the head is cross-flow, the impressive copper inlet manifold being on the off-side, the large-bore four-branch exhaust manifold with streamlined nose-cone and external exhaust pipe on the near-side. The cam cover has the "Speedway" script writ large upon it. There is, of course, no gear-lever, the gear changes on a Model-T being effected by pedals, but outside the body there is a long brake lever.

Originally the carburettor was a triple-diffuser Zenith, which is now on Roger Collings' 1903 Sixty Mercedes, a less-complicated Zenith having been substituted, pending finding the correct Winfield carburettor. The Bosch twin-spark magneto is driven from the timing gear train and is mounted on the off-side. The crankshaft is balanced with bolted-on weights and is pressure fed. The con-rods are standard Model-T, lightened to wafer-thinness; the flywheel has been likewise drastically lightened and much reduced in diameter.

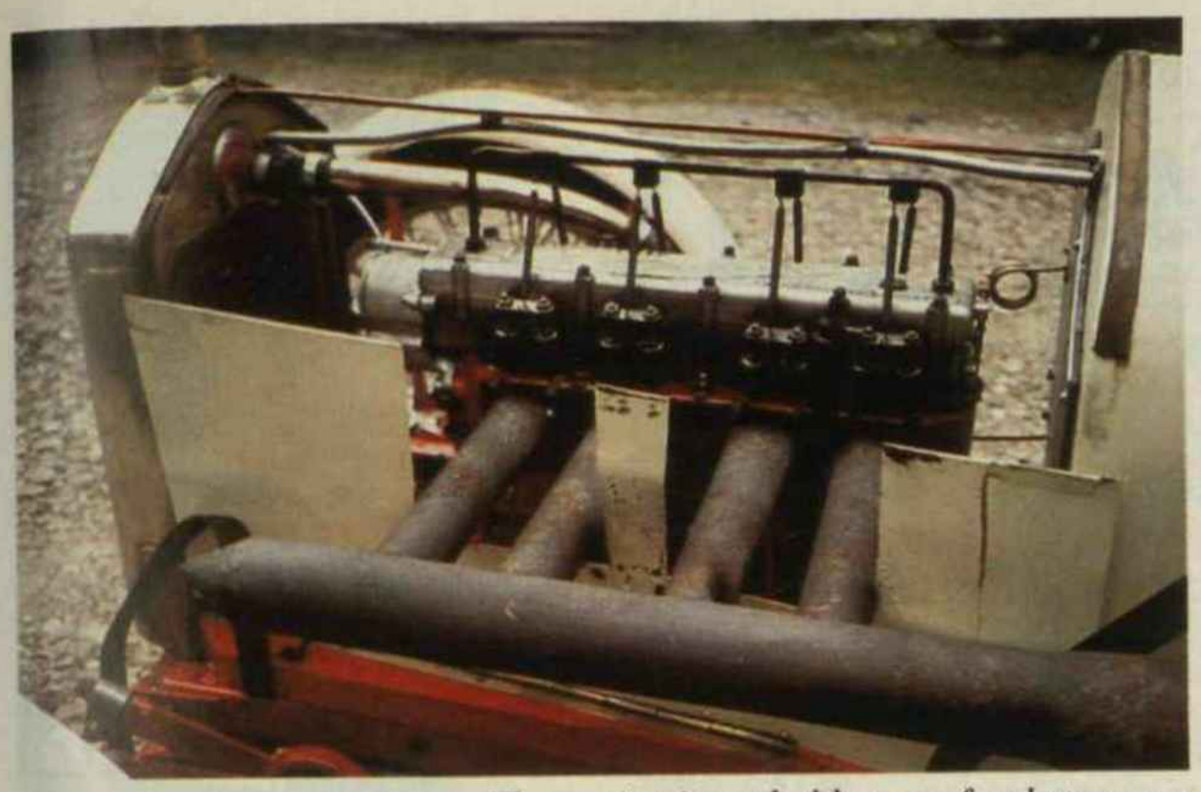
Alloy pistons are now fitted. The side-valve camshaft remains operative in the crankcase but only for the purpose of driving the oil-feed pump from its rear end. The engine is mounted further forward in the chassis than on a normal Model-T and the radiator is from a Wolseley Ten. The Dayton wire wheels are shod with 33 x 3½ tyres and Bradshaw has fitted contracting "Rocky Mountain" brakes over the normal Ford expanding drum brakes on the back wheels, to very reassuring effect.

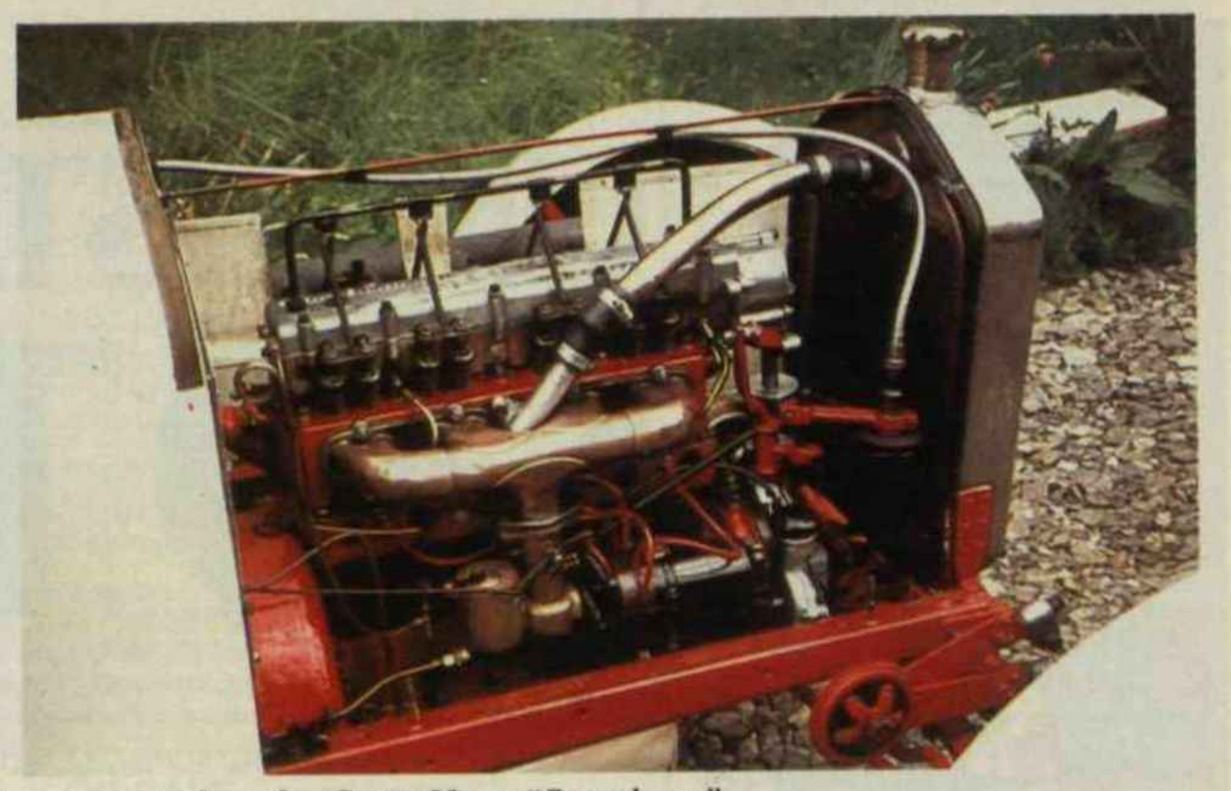
The whole car has the unmistakable lines of an exciting vintage racing car and a run in it convinced me that there is very ample performance. The doorless body may well be another Craig Hunt product. It has a full length undertray and an aero-screen for the driver. One later modification is a neat little door in the bonnet for expeditious carburettor flooding. For road use Bradshaw has fitted cycle-type mudguards. The polished wood dashboard carries, from left to right, a 100 mph Watford speedometer, a matching Watford tachometer reading to "40", ie 4000 rpm, a brass oil-gauge or indicator, an air pressure gauge from a Sunbeam for the fuel-feed from the petrol tank in the tail, maintained by a big hand-pump beside it, and on the extreme right-hand side, a domestic period tumbler ignition switch. On the floor, on the passenger's side, is a Klaxon horn. At Brooklands the body was aluminium, the wheels red, but when the present owner first used it, it was white, then it was painted blue, but is now white again.

As to performance, at Colerne Bradshaw allowed himself the luxury of 2500 rpm, which gave a speed through the time trap of 70 mph, against a headwind which the



Nigel Bradshaw's 1917 Model-T Ford is a practical road car as well as being used for VSCC events.





The engine is probably one of only two remaining examples of a Craig Hunt "Speedway" overhead camshaft 16-valve twin-plug conversion which were developed for racing in America.

Frazer Nash drivers said was dropping their top speed by some 15 mph. The maker's of the conversion apparently claimed 70 bhp at 3000 rpm from the 2.9-litre engine. Before the carburettor change, fuel-thirst was some 10 mpg, which has been improved to around 22 mpg. So here is a most interesting Ford, which has been in the Bradshaw family for three generations.

Its Brooklands association? Well, at the 1924 Easter Meeting it was entered by E Bradshaw for G Thomas to drive in the 75 mph Short and Long Handicaps. Whether it was driven, trucked or railed from Lancashire to Weybridge isn't known; it may not have been road registered at this time. Unfortunately it had a disappointing Bank Holiday because it failed to start in the first race and did not cover a full lap in its second engagement. How it would have run had it been more reliable is a matter for speculation, but the handicappers had put it on the same limit-mark as Malcolm Campbell's Star, which won the 75-Short, with a lap at 79.3 mph, and Whale's fast single-seater Calthorpe. The Ford does not appear to have gone to Brooklands again, although Model-T Fords were not unknown there, for apart from those raced before WW1 is special Model-T races, one of which was watched by Henry Ford himself, two of them lapped at over 70 mph in 1922, and in 1925 Alfred Moss's 8-valve Fronty-Ford Speed-Sport won a 75 mph Short Handicap race, with a lap at 85.13 mph.

Back to Bradshaw's car, it did much better on its home ground, for example beating three Bentleys and a Horstman at the 1924 Lancashire AC's flying-kilometre speed-trials run in conjunction with Morecambe Carnival. Prior to that, it is thought to have done well at the Blackpool Promenade speed-trials, one newspaper claiming, perhaps optimistically, that the Ford was doing 102 mph over the line. At the 1923 speed-trials at Blackpool the Ford's time over the ss ½-mile was 38.8 seconds and it was praised for its excellent acceleration, but it was disqualified from the class for standard sports cars not exceeding £1200. By the time the VSCC was formed in 1934 the Bradshaw family were well into Vintage and Edwardian motoring with this Ford, a 30/98 Vauxhall, the celebrated 1908 chain-drive 9¼-litre Daimler, a Siddeley-Decoy, and a share with Peter Wike in the famous 21.7-litre Fiat "Mephistopheles" etc.

That the Ford is still in use with the same family after 74 years is unique and its visit to my house, with a trip up and down the drive, quite an occasion! WB

VSCC at Colerne

This event is run on Air Ministry property and is not therefore open to paying spectators. However, for VSCC members it provides that prominent attraction of a speed-trial, namely the opportunity to compare the pace of individual cars, especially as at this venue drivers are timed over both a ¼-mile and a kilometre from a standing-start over a good surface, in addition to which cars are timed through a speed-trap towards the end of the course.

This year (June 1st) a strong and chilly wind was blowing up the runway, so that the Morgan 3-wheeler contingent were changing to lower-ratio sprockets. FTD was made by D Baldock's 1938/9 blown 2-litre Alta, in 24.85 sec, his terminal speed 129 mph. Craig Collings' 8.1-litre Bentley took the Colerne Trophy for fastest vintage time (26.10 sec. and 125 mph), and the quickest lady driver was Miss Jo Moss in the Invicta (35.17 sec, and 89 mph).

Class winners were Derek Edwards in the sports Aston Martin (31.95 sec) who did just the ton through the trap, best vintage car Mrs Temple's 80 mph Riley 9; R Spiers's 4.3 Alvis (29.92 sec), best vintage car the 4½-litre Bentley of P Blakeney-Edwards; E Dunn's Riley (31.83 sec), vintage winner B Beebee's Lea-Francis; and Craig Collings, whose Bentley netted the lot in Class 4, handicap, vintage and overall prizes. Of the racing cars, Bishop's 1928 A7 scored in both divisions (35.72 sec and 80 mph) Shotton's Morgan cleaned both sections up to 1500cc (31.92 sec and 96 mph) and of the pre-war big racers Baldock aforesaid scored, with fastest vintage time by Howell's Bugatti (28.99 mph and 115 mph). The post-war Historics were a wash-out, one Cooper-Bristol non-starting, the other retiring! The Edwardians brought the fun back, Harold Smith being rewarded with running the one-off 4.9-litre Indy Sunbeam again with a win in 36.42 sec, from Day's 3.9-litre Straker-Squire (37.03 sec), which clocked 83 mph to the Sunbeam's 71 mph, showing Smith's superior acceleration. STD went to Bullett's AV Monocar, in 81.95 sec, locked in combat as it were with Chris Gordon's Tamplin which with 344cc more managed 61.23 sec and was 11 mph quicker at 45 mph. Randall ran a 4½-litre Marion (58.83 sec), Bradshaw a racing Model-T Ford (46.14 sec). (See page 696) WB

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Victor Gauntlett, having purchased the Brooklands lap-record holding Napier-Railton from the late Bob Roberts a short time ago, has this famous car up for auction early this month. We are told that it will appear at the Brooklands Society Reunion at the Track on June 30th.

As part of the 70th anniversary of the Austin Seven, the North Herts Centre of the 750 Motor Club is organizing a demonstration run for pre-war Austin Sevens which will take place from August 15-29. The aim is to drive through Belgium, Luxembourg, Germany, Austria, Lichtenstein, Switzerland and France in 14 days, one country for each decade of the Austin Seven's history.

Further information can be gained from Phil Brough, 24 Oaktree Garth, Welwyn Garden City, Hertfordshire AL7 3UX.

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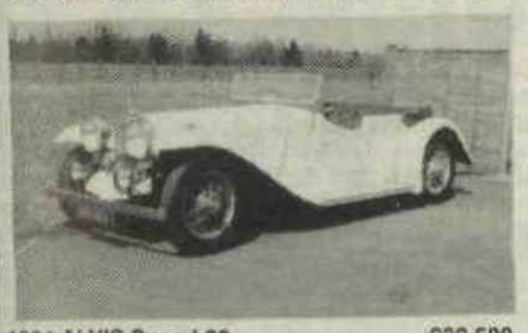
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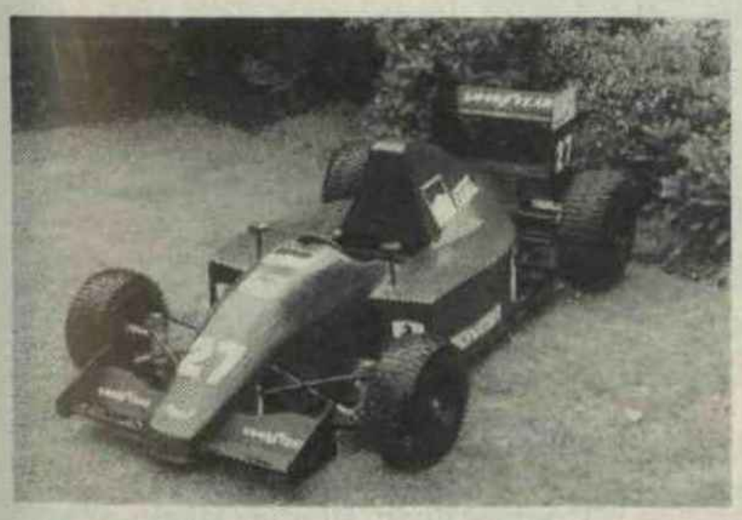
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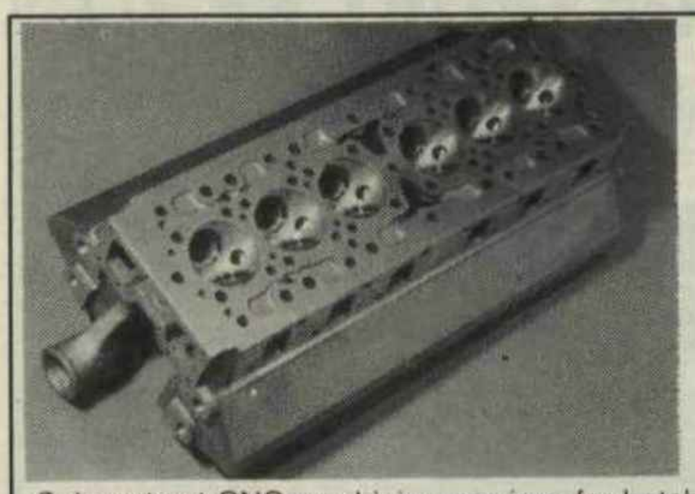
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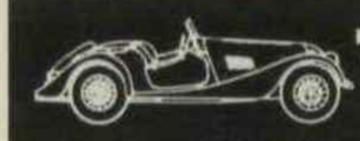
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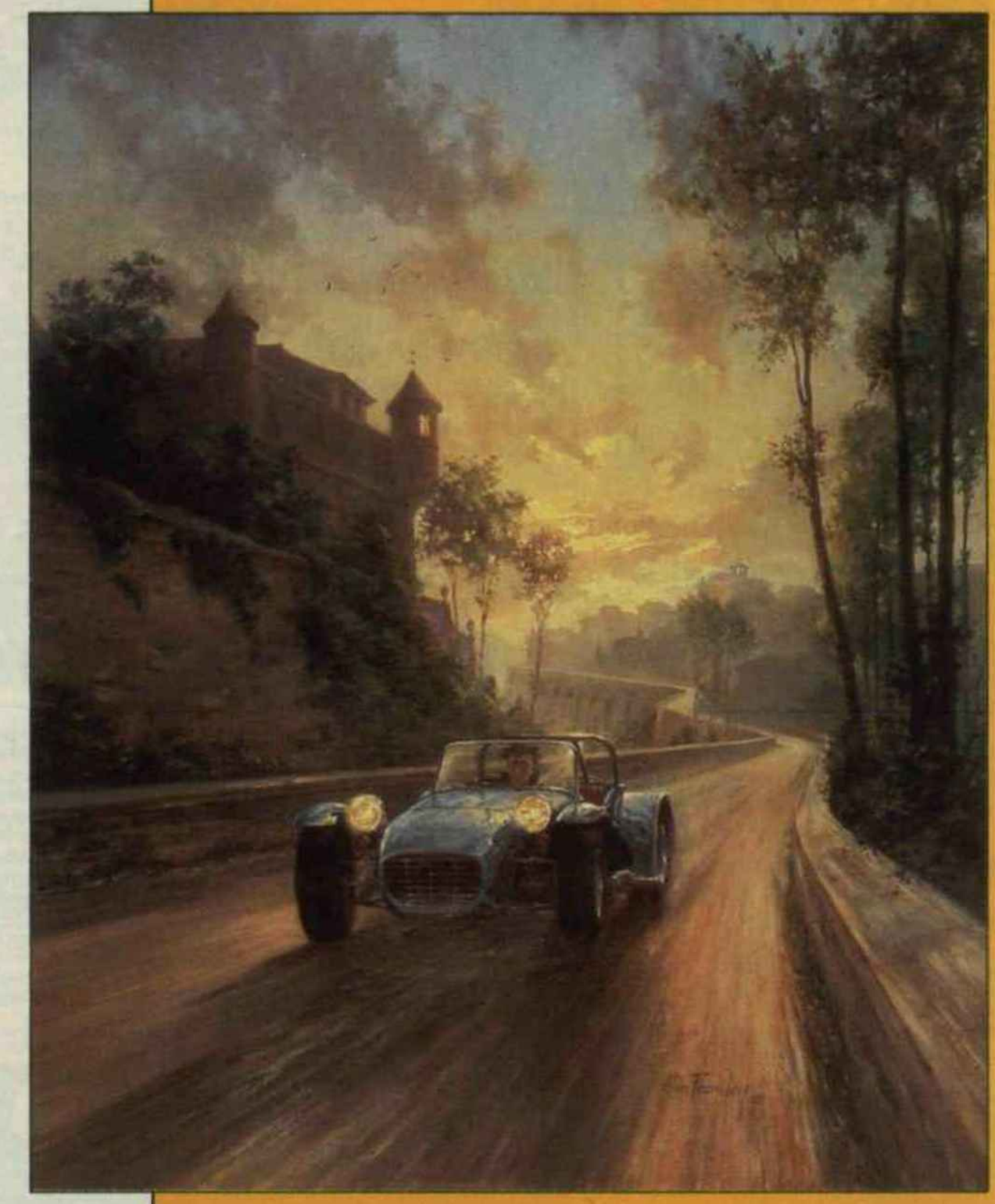
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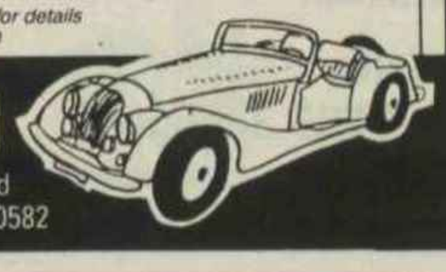
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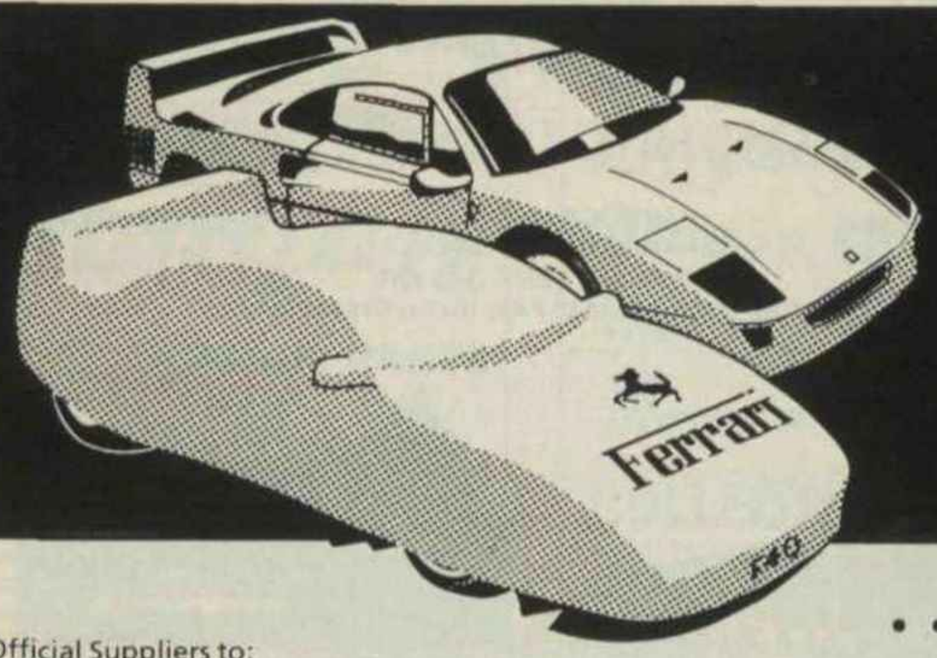


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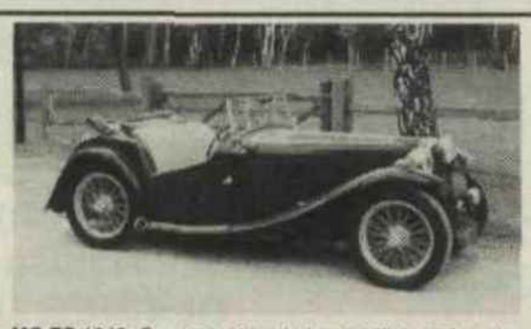
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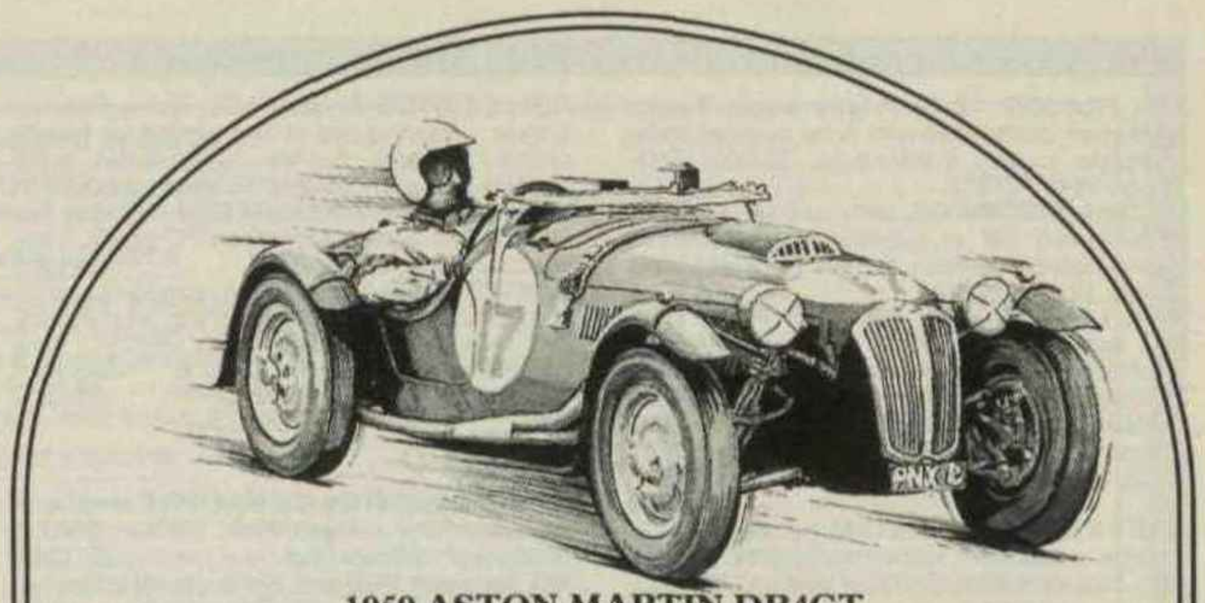
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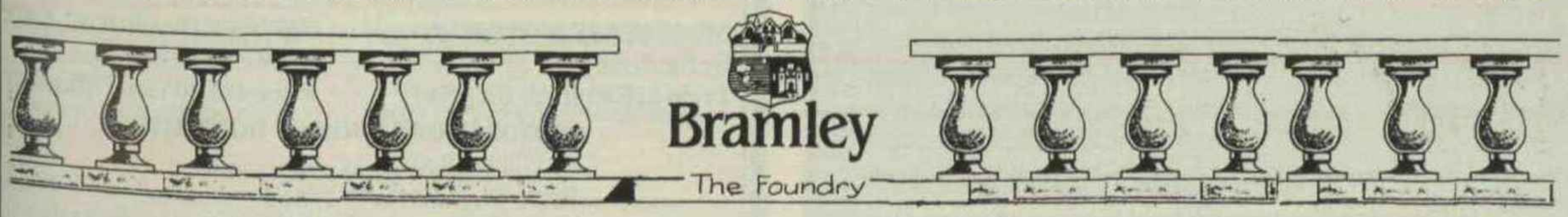
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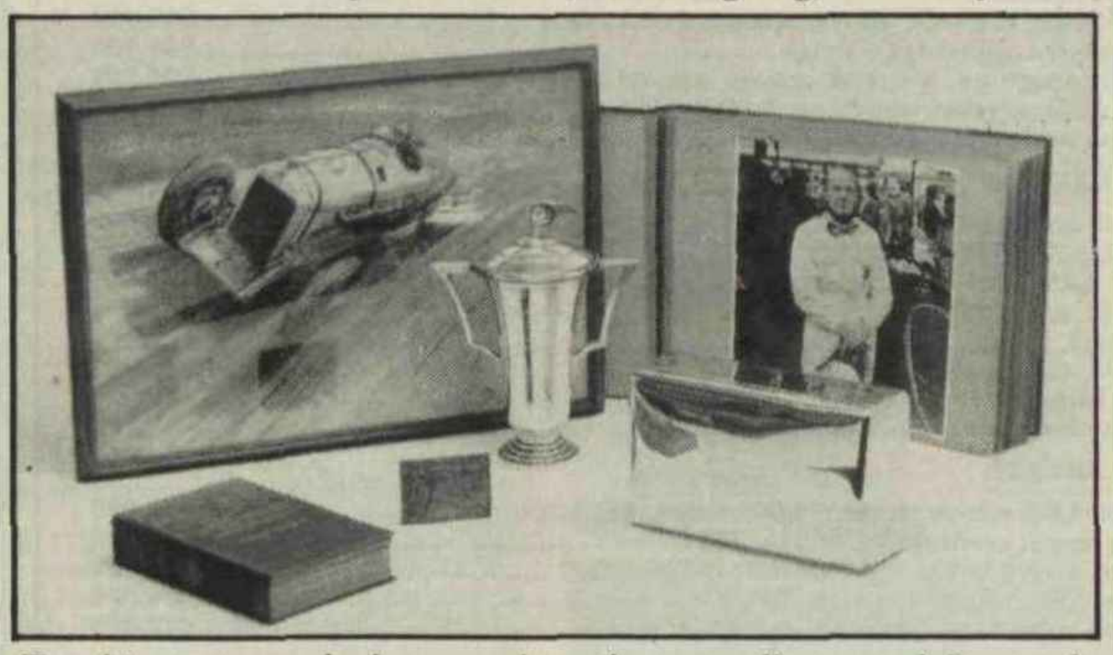
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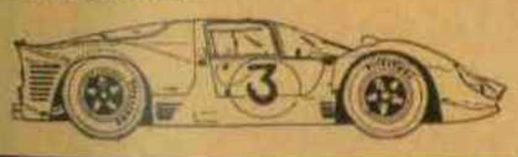
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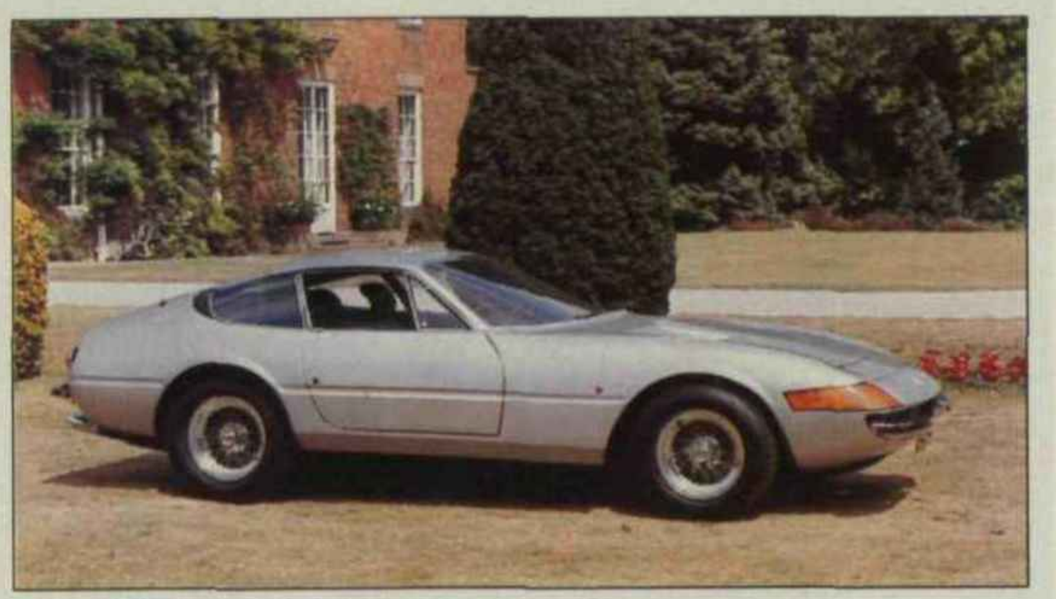
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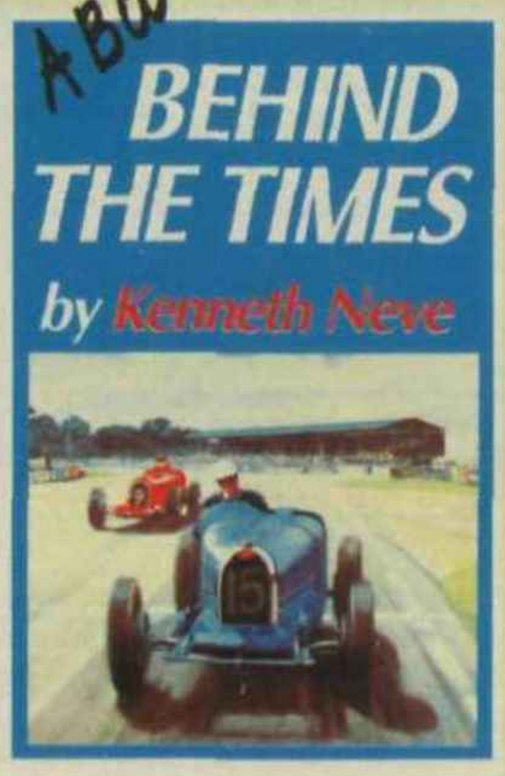
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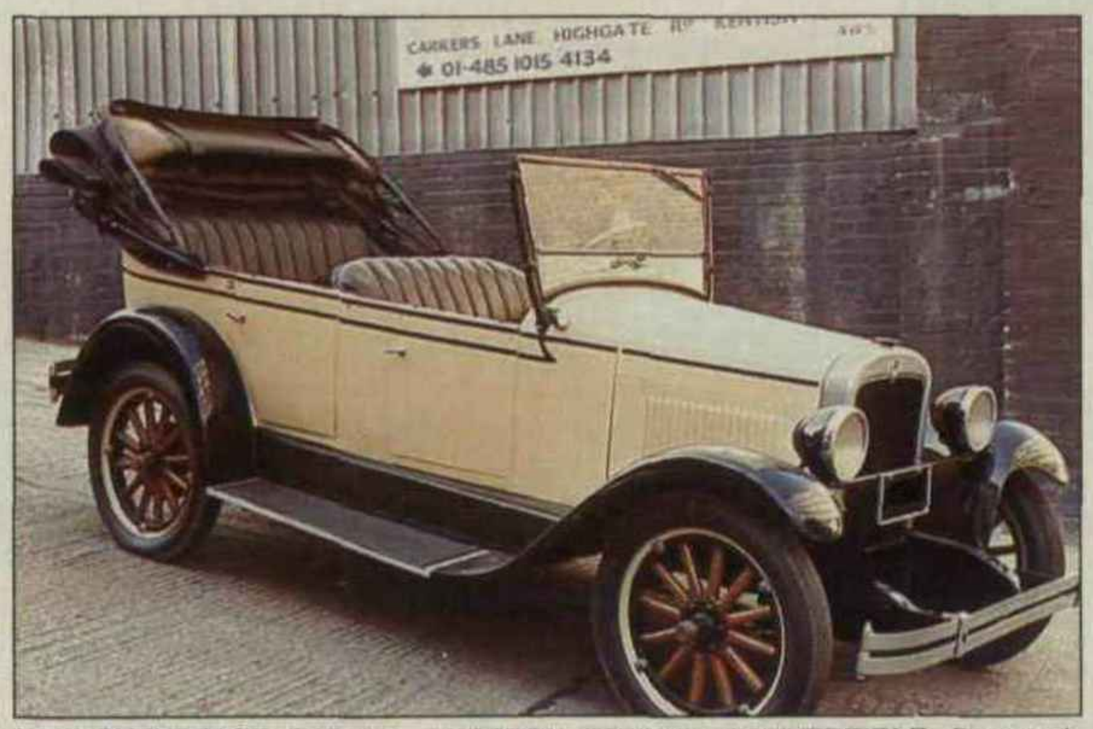
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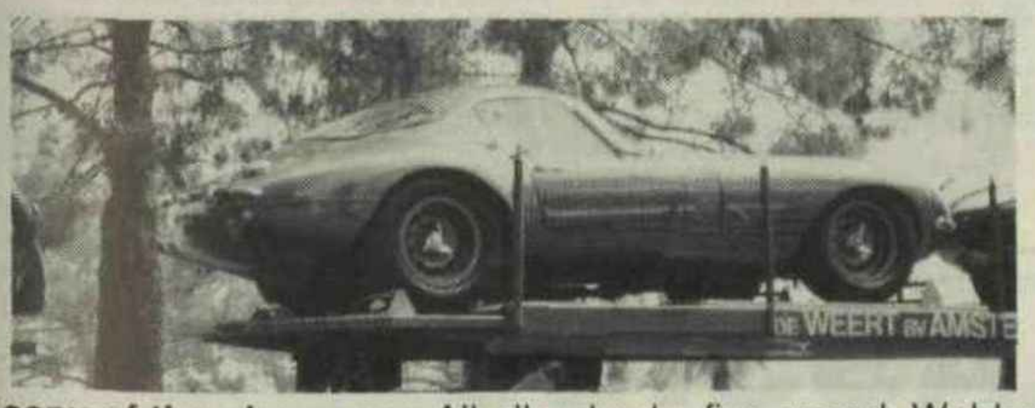
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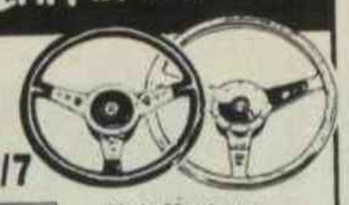
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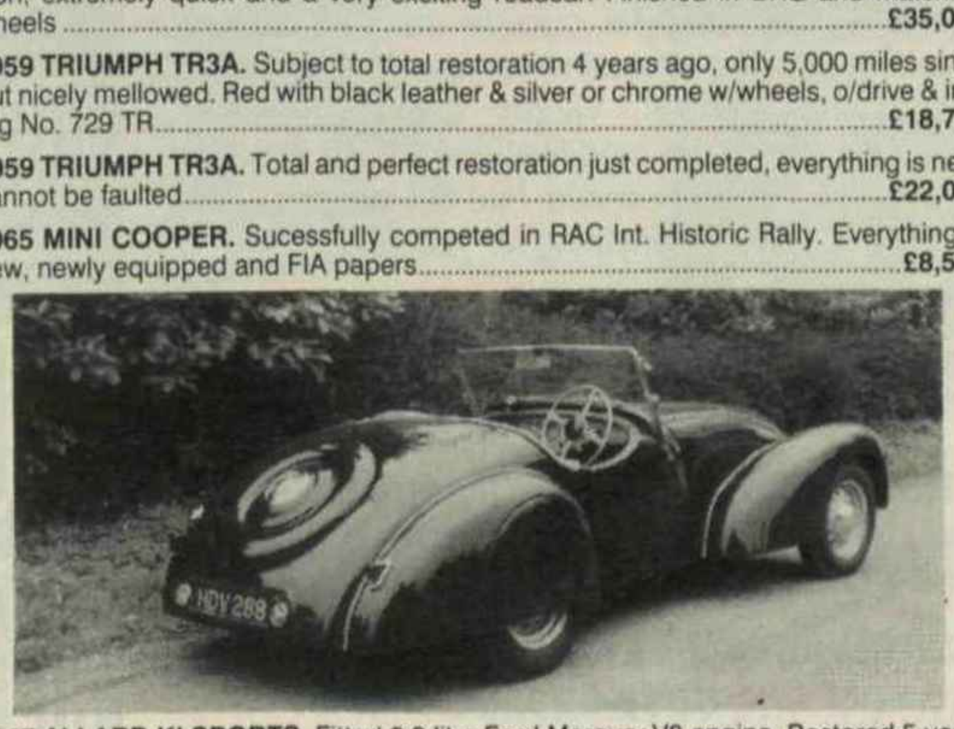


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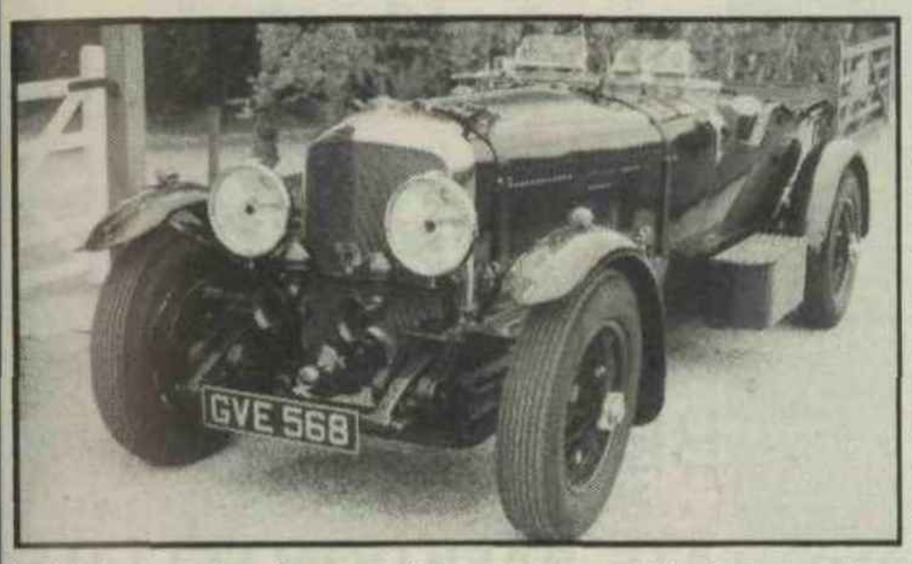
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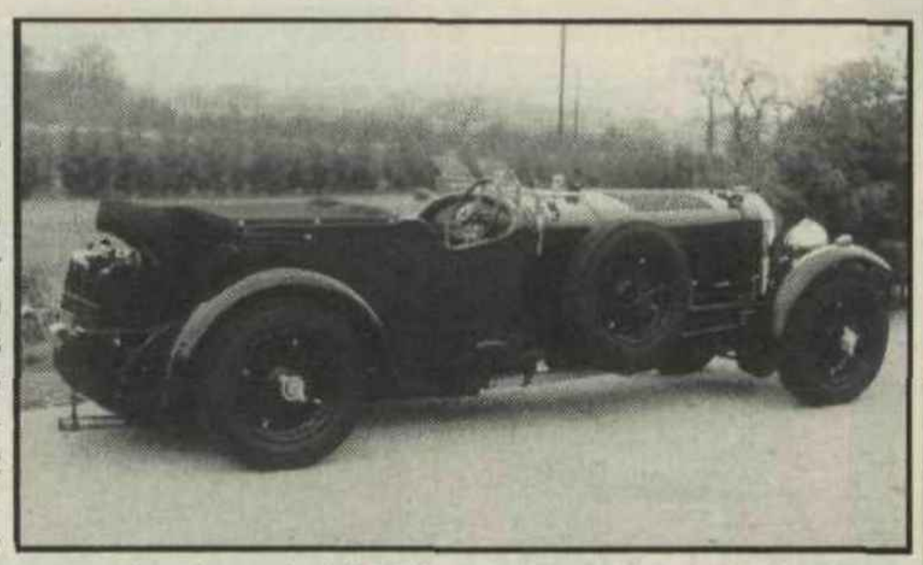
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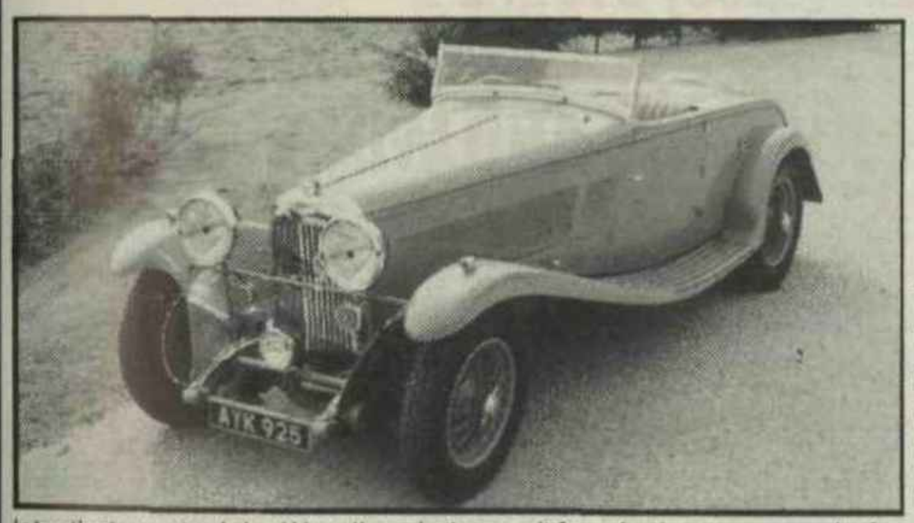
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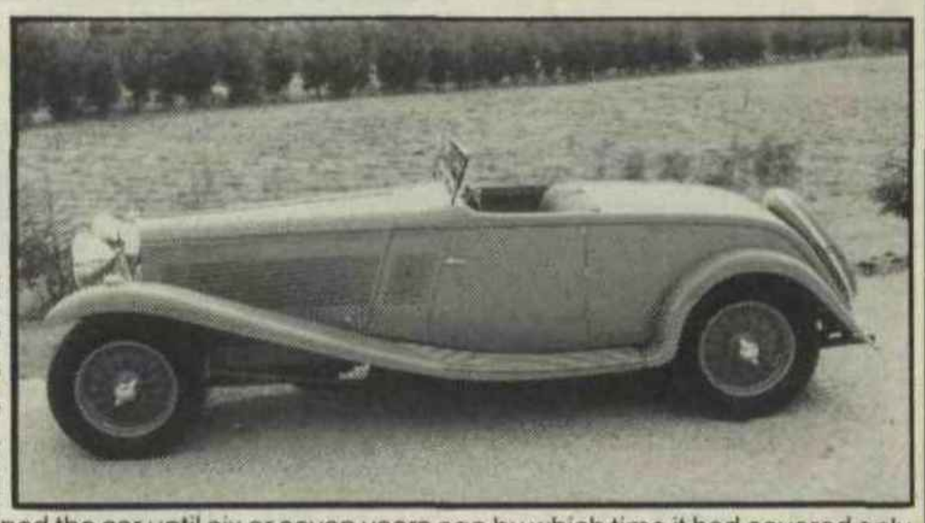
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Chassis No.HM 2857 Engine No. HM 2855



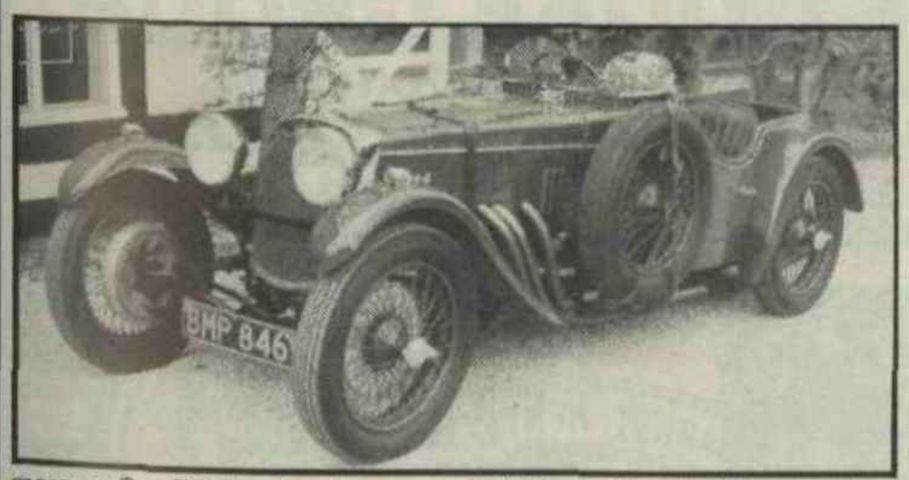
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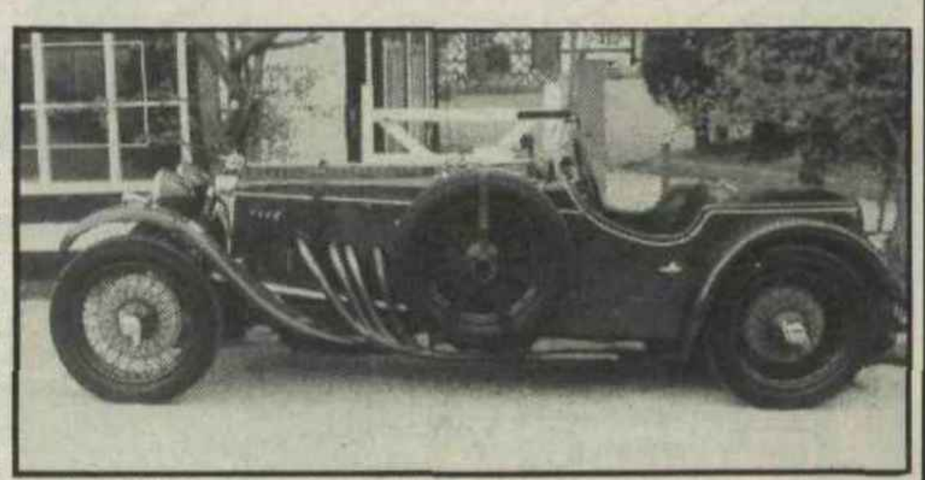
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Thought by many to be the most beautiful Lagonda every built. Totally unique, as implied, the only one ever built with this exotic bodywork. Built to the order of the Hon. Ryder Bastard Owen who only retained it for a brief period it was sold later that year to John Woodhead who ran it for a further two years before laying it up for the wartime years. He retained the car until six or seven years ago by which time it had covered only a little over 20,000 miles. At that time it was given a sympathetic restoration to bring it back into 'as new' condition again. The car will cruise at 85 mph! It is mentioned and photographed extensively in every Lagonda reference book, written and captioned in 'Aston Martin and Lagonda' by Michael Frostick "What price Mr. Esders Buggati Royale now?!



1934 FRAZER NASH TT REPLICA



The well known Ex. Michael Collier/Peter Mitchell-Thomson (later Lord Selsdon) Le Mans Car. Totally original with many very special features and very, very fast. Always owned and campaigned by enthusiasts, even in post war years by Nash stalwarts Smith & Bill May. It is featured in all the reference books on the marque. See Thirlby showing several photographs at Le Mans to diverse such an event as the Italian Corsa della Mondola Hill Climb of 1960. Collier and the cars exploits at Le Mans are also a feature article in The Vintage Sports Car Club bulletin last month. Not a concours car, but very tidy with a lovely feel. BRG with matching interior trim, fading throughout.



1957 FERRARI PININFARINA SPYDER SERIES 1



Under forty of these Series One cars wre built and the original order book was a veritable who's who of distinguished owners, amongst these being Peter Collins, The Agha Khan, Rubirosa, Count Volpi etc. This car was delivered new to M. Lacloche and it is in original yet concours condition. Considered by many to be the prettiest of open road going Ferrari's and certainly amongst the rarest. It truly exudes sexiness from its tiny bumperettes to its long SNAP exhausts!



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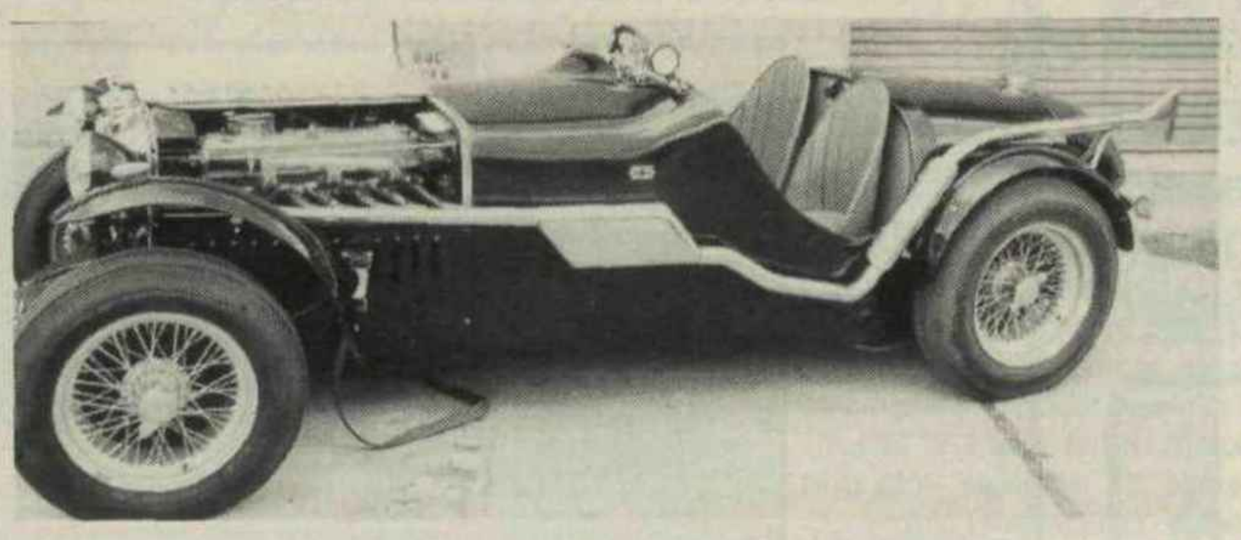
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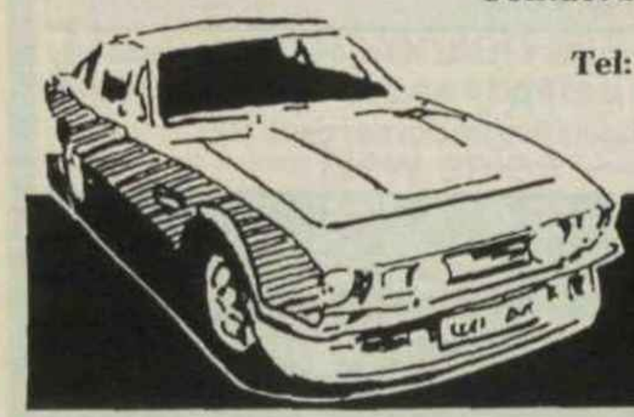
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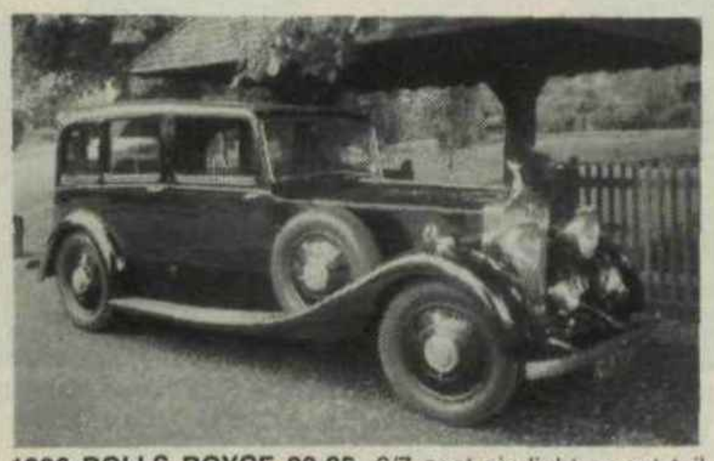
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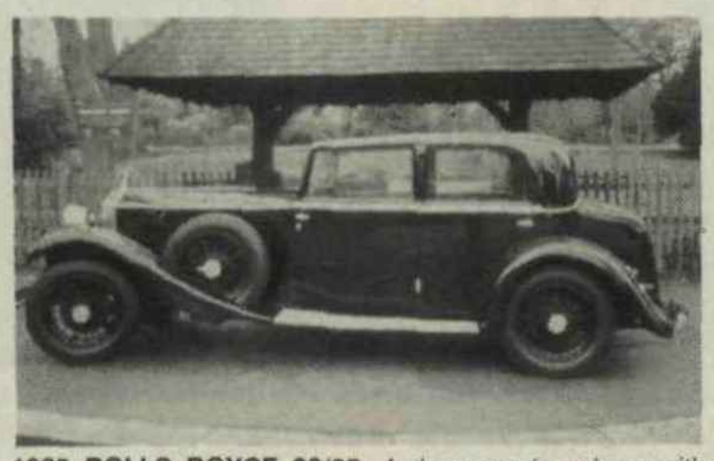
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1936 ROLLS ROYCE 20-25. 6/7 seat six light swept tail Limousine by Park Ward, an extremely nice original example with leather trim, division and occasional seating, mechanically excellent, finished in black but would benefit from painting.



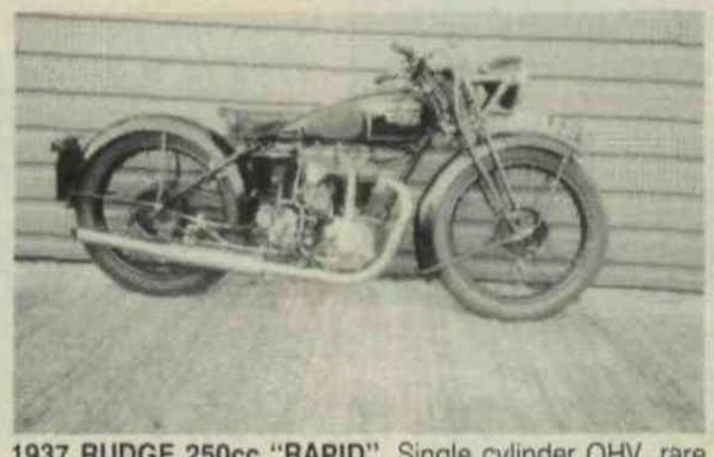
1933 ROLLS ROYCE 20/25. 4 door sports saloon with rakish coachwork by Freestone & Webb. Finished in black with brown hide trim, large projecting trunk, twin sidemounts and sunshine roof. An exceptionally sporting carriage in fine all-round condition.



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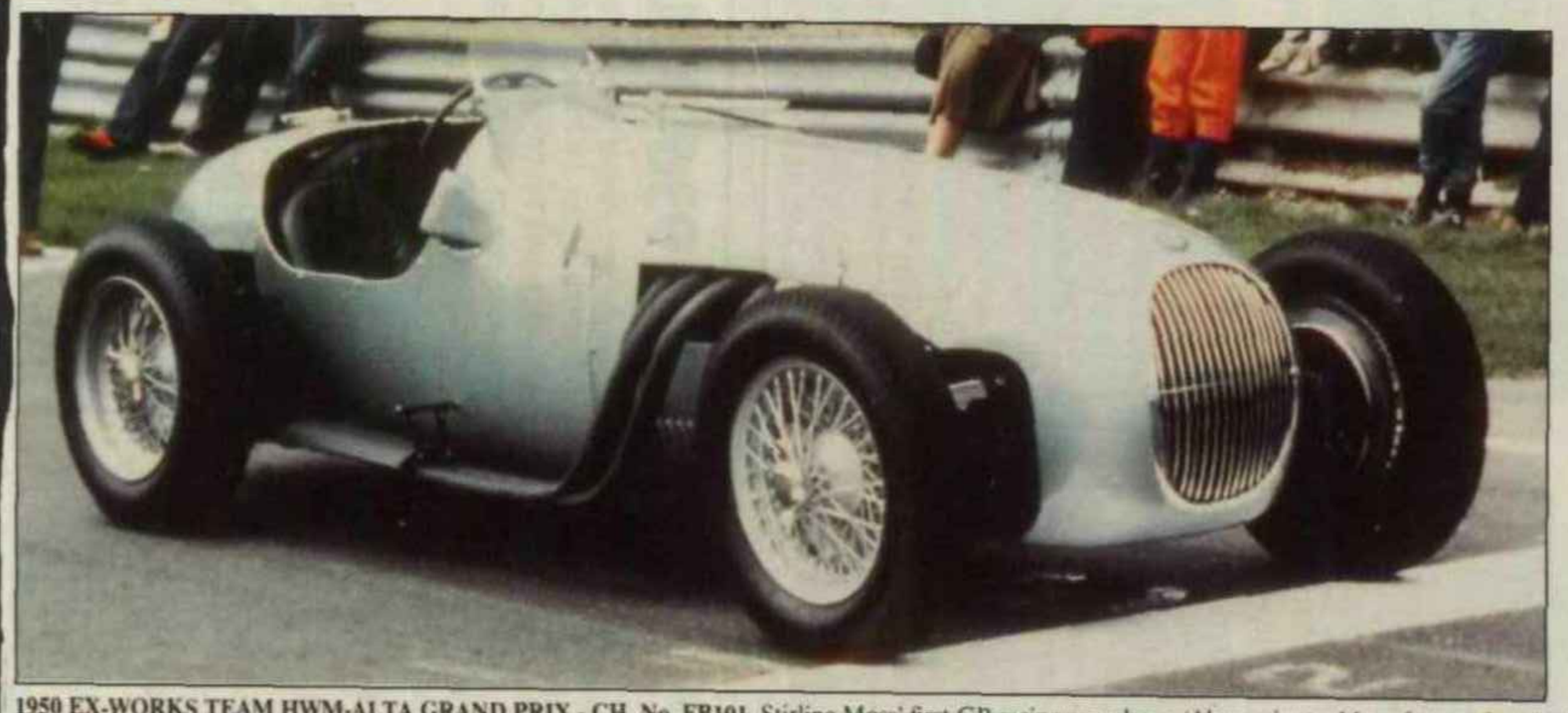
'THE EX-WORKS HWM-ALTA GP (below) IS UNCOMPETITIVE' — At the **BARI GP** (9/7/50), Moss came **3rd overall** in this car, in the Formula 1 race, behind Fangio and ahead of the two-stage Maseratis and all the Ferraris. At the **NAPLES GP** (23/7/50), Macklin came **2nd** in this car ahead of Faglioli. At the **FREIBURG MOUNTAIN CLIMB** (6/8/50), Fischer came **2nd** in this car . . . and so on throughout the season.

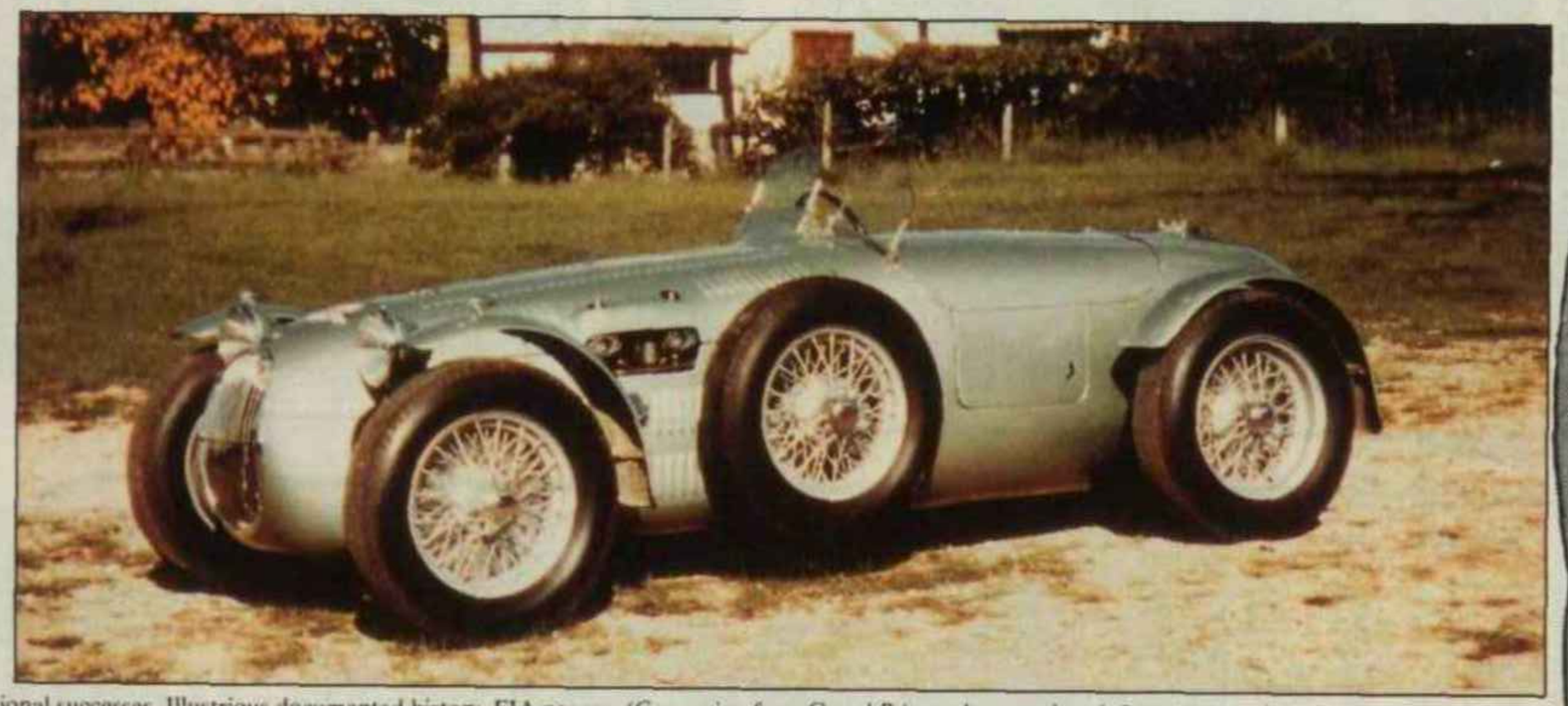
'THE HWM-ALTA IS SLOW' — At the **ROME GP** (11/6/50), Moss broke the **Lap Record** in this car. At the **RHEIMS COUPE** (2/7/50), this car attained over **135 m.p.h.**, and came **3rd overall.**

'THE HWM-ALTA IS UNRELIABLE' — In over **19** major races entered in 1950, this car finished in **15** of them, and not lower than **6th place** in **10** of these. In **7000 miles** of international racing, this car required no major overhaul, and its Alta engine showed only minimal signs of wear. *Source for the above — W. Boddy in Motor Sport — December 1950.*

'THE HWM-ALTA IS UNUSABLE' — This car is eligible for V.S.C.C., national and international historic races, hill-climbs and retrospectives (Mille Miglia etc.), both as a **Grand Prix** car, and as a (road registered) **Sports-racer** — *(see photos).*

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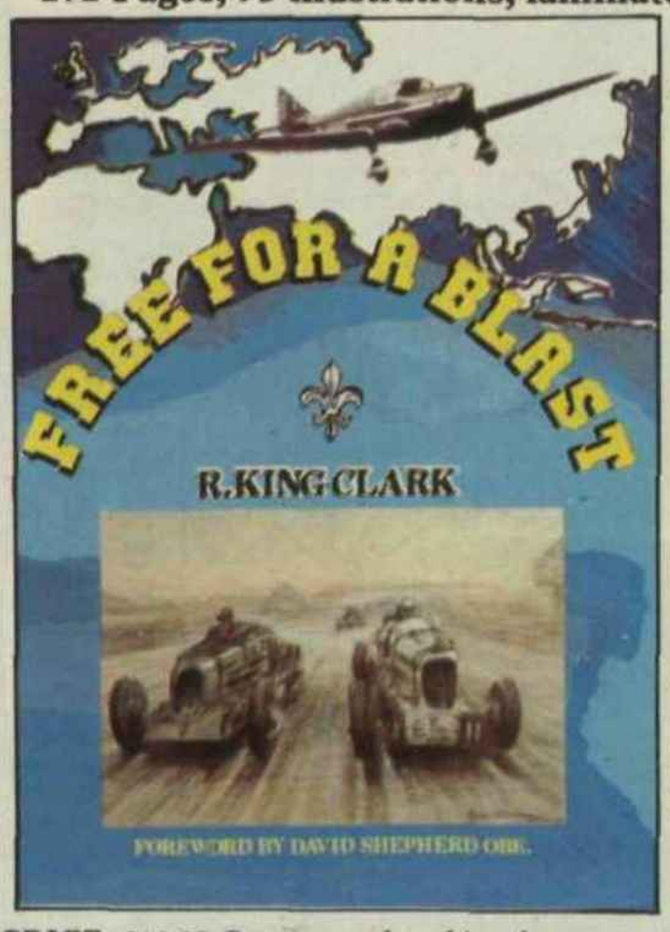
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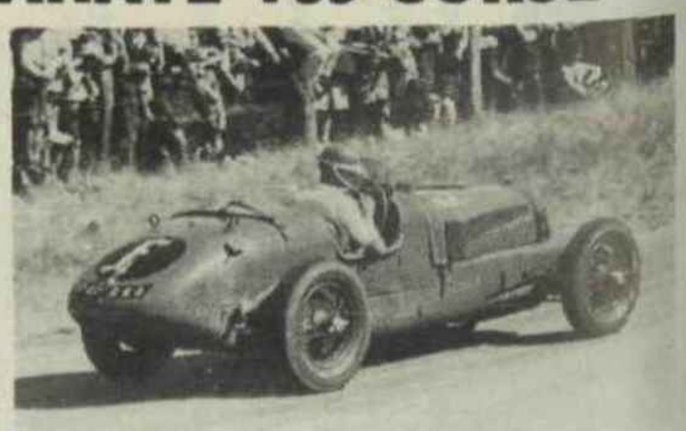
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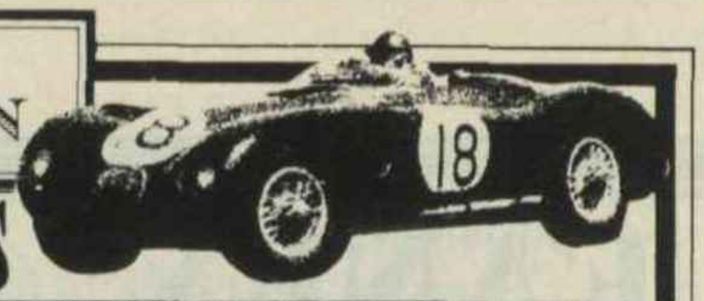
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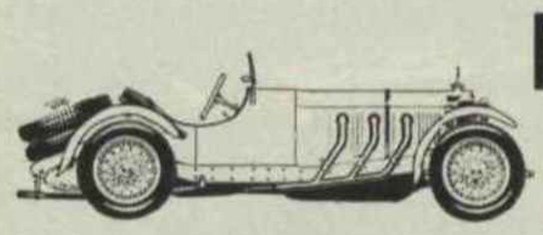
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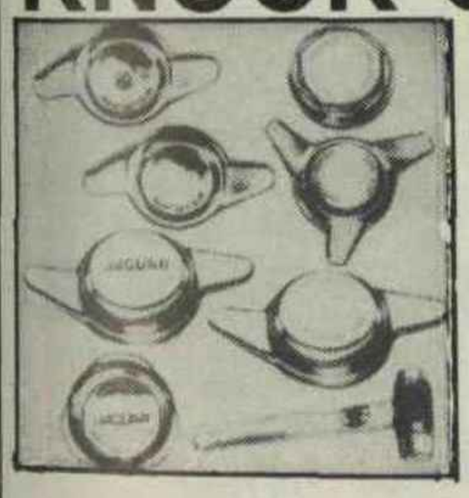
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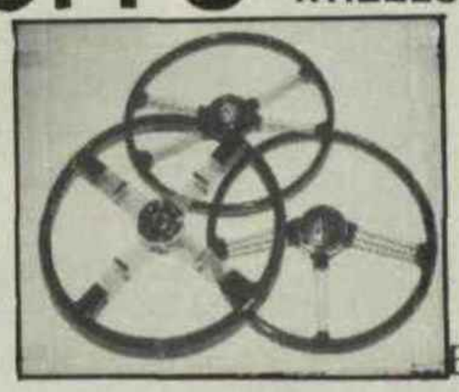
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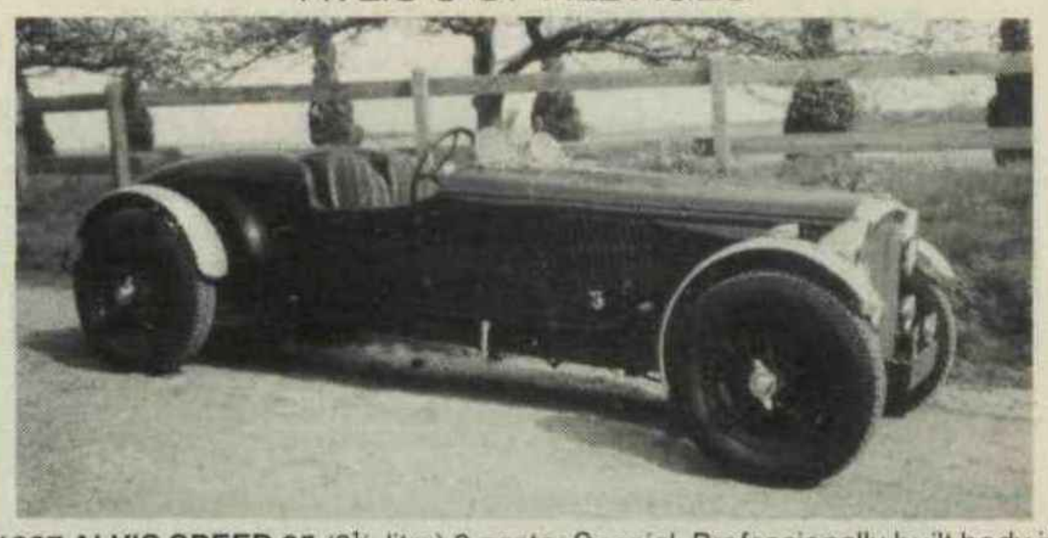
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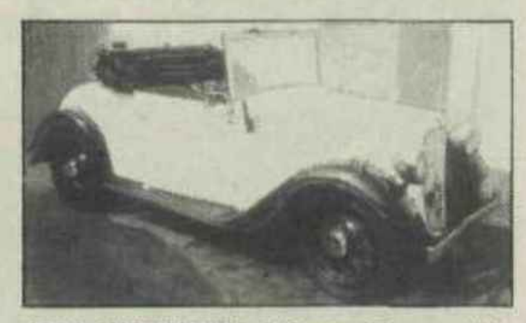
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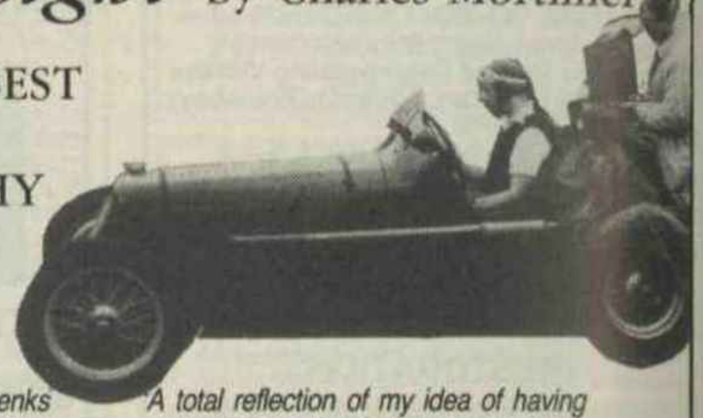
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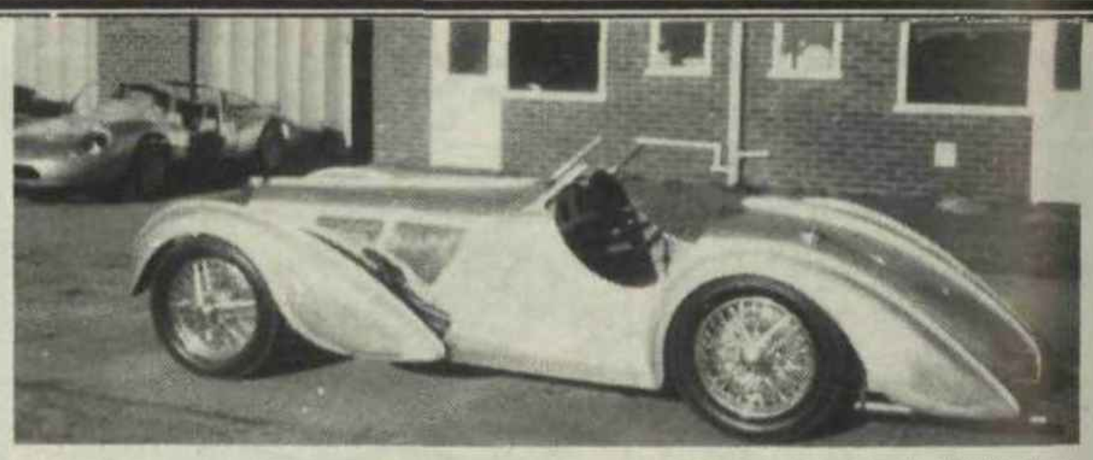
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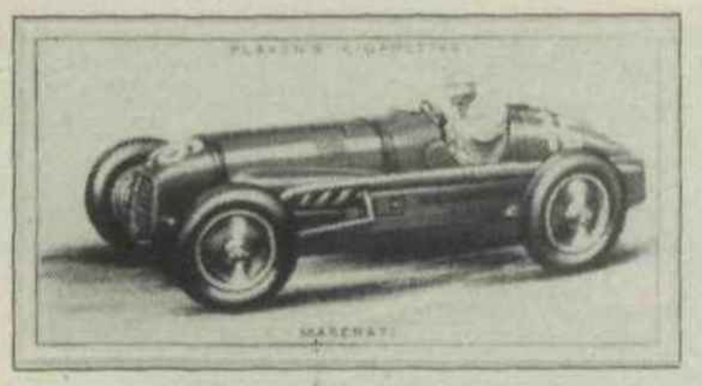


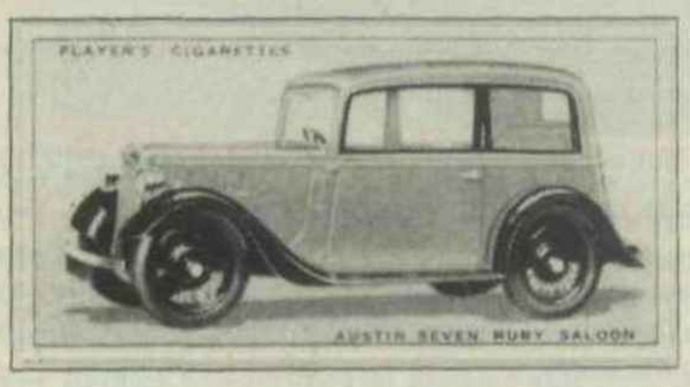
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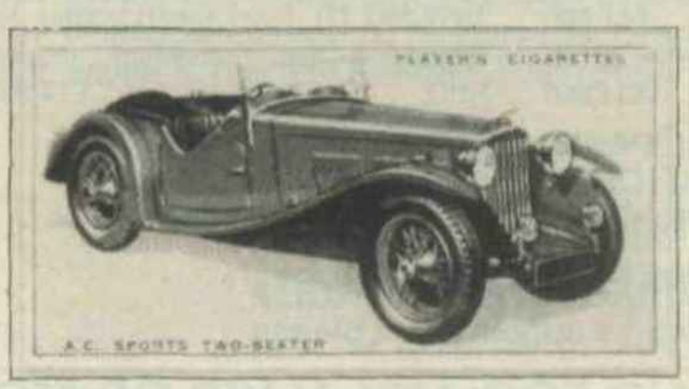
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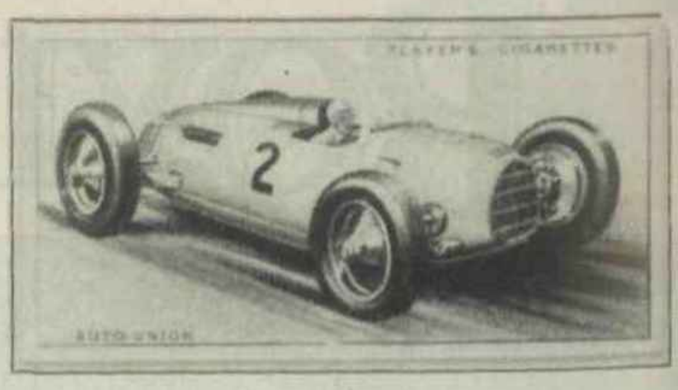
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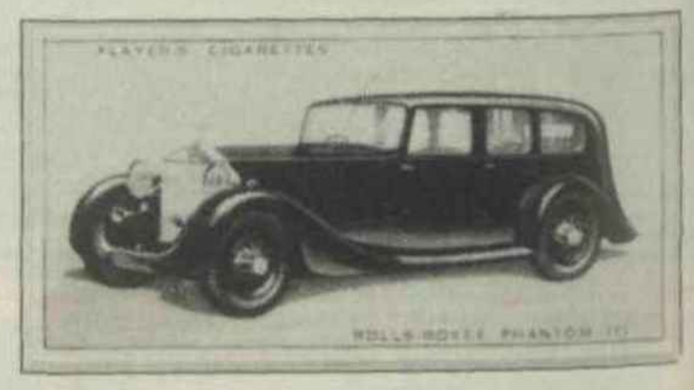
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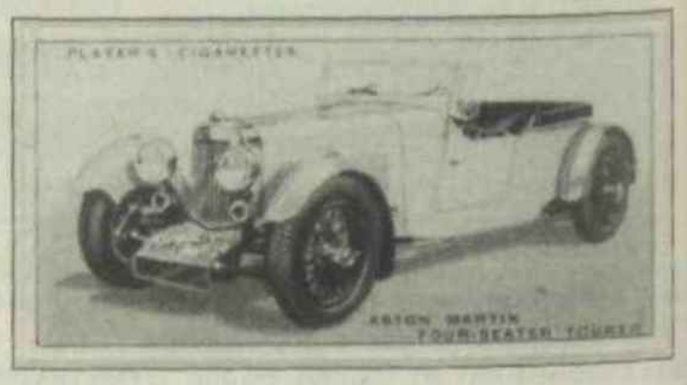
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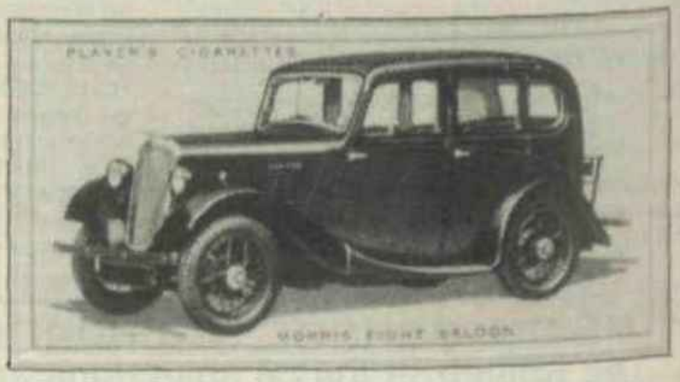
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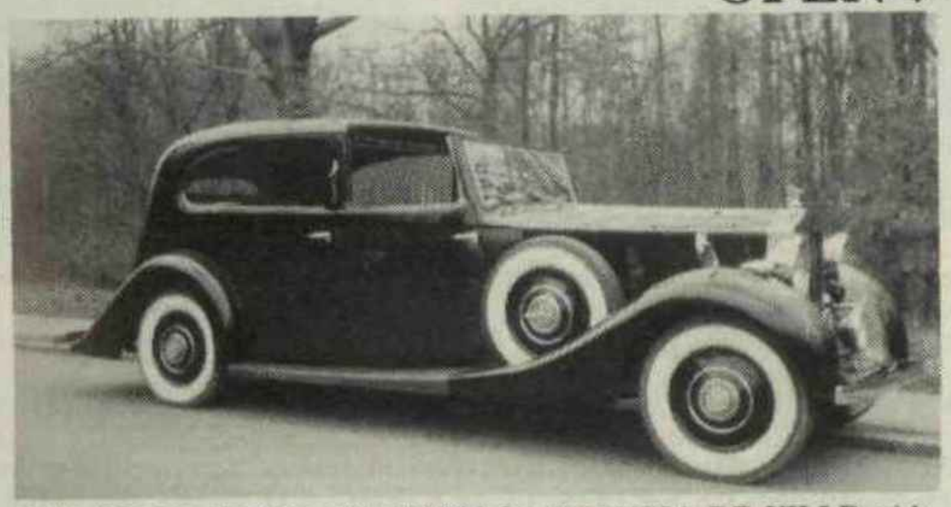




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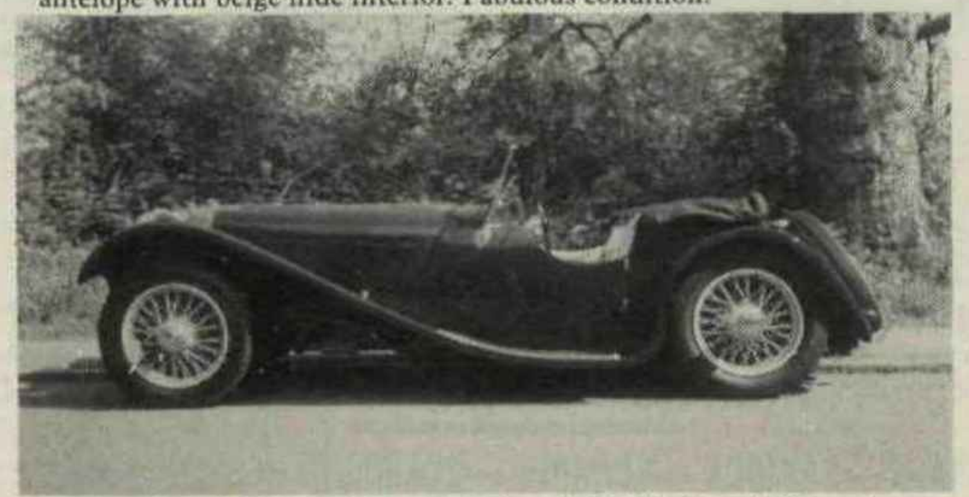
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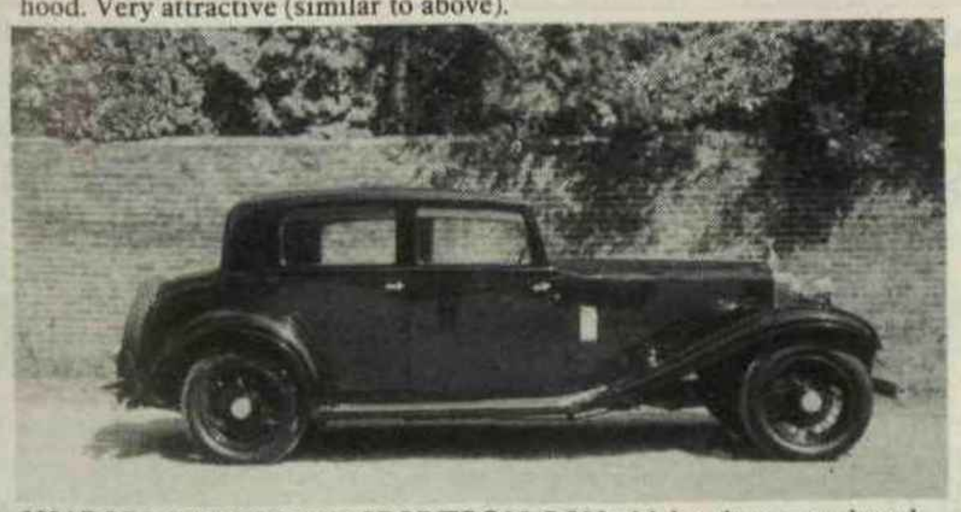
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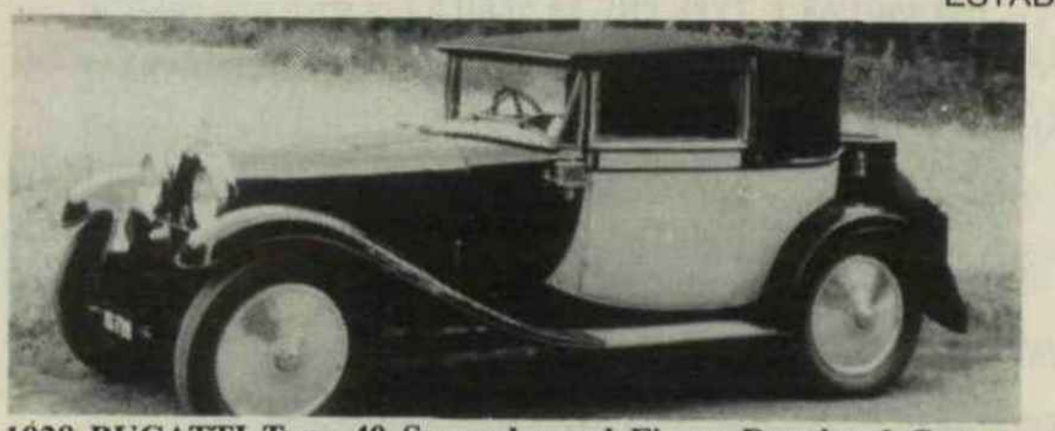
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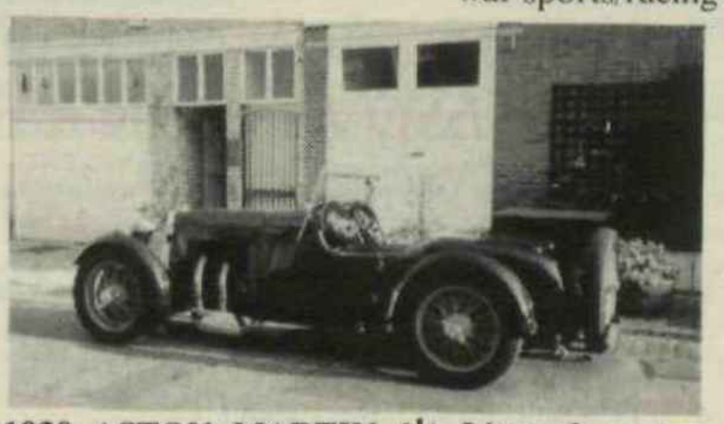
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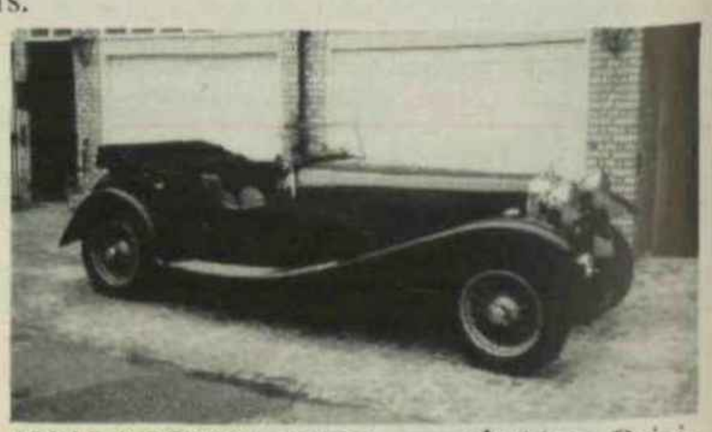
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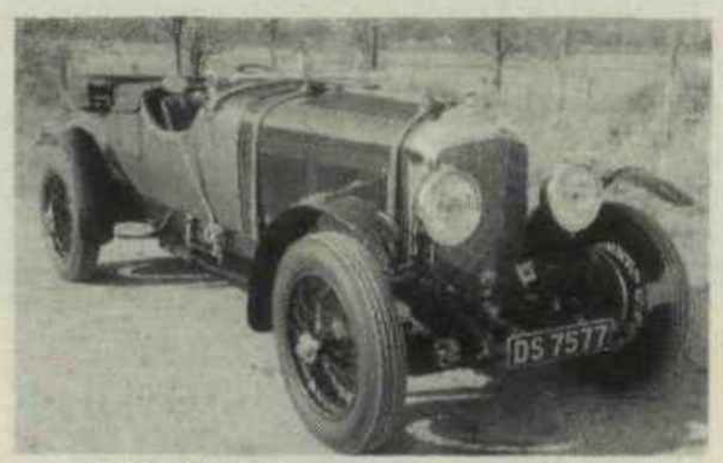
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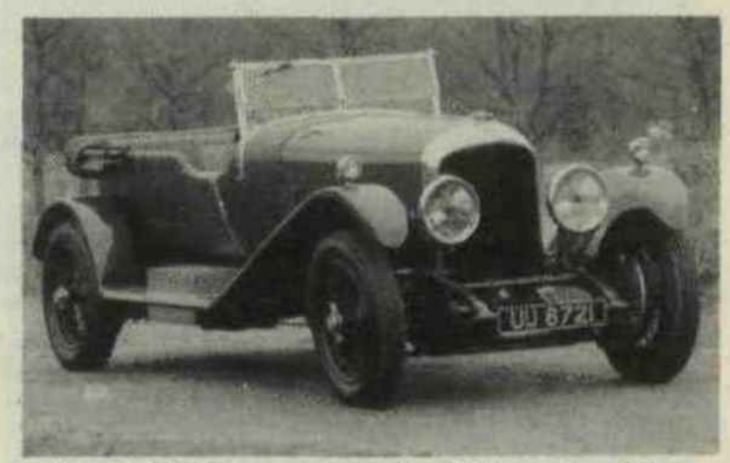
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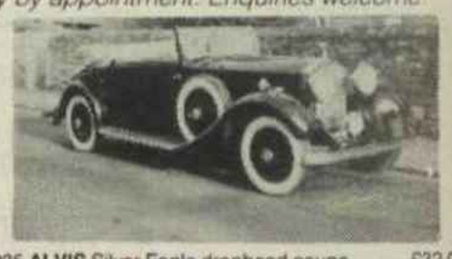
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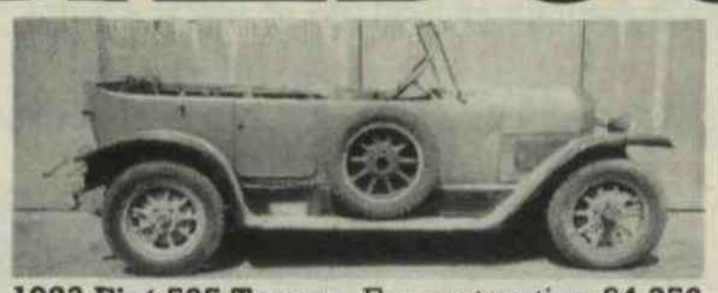
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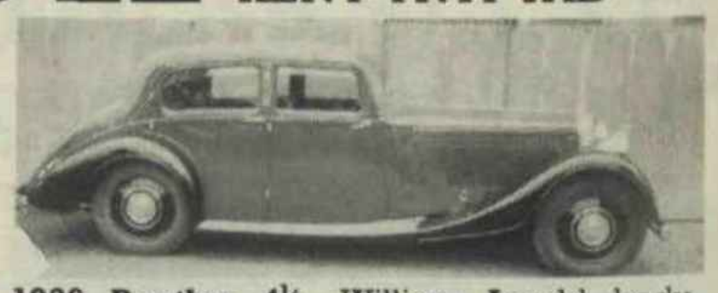
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