no means a front-line outfit, struggled through 1977 and finally withdrew in May 1978. After the cars had been hired by such as Derek Daly, Rupert Keegan, Harald Ertl, and Eddie Cheever, they gradually disappeared from the scene, to be used in minor or even national championship events.

**HILL (UK)**

Twice World F1 Champion Graham Hill had already enjoyed a long career before he decided to set up his own team in the 1970s. Originally a ‘works’ driver with BRM, Lotus and Brabham, Hill then set out with his own-brand team in 1973, originally by racing DFV-powered Shadows, then following up with Lola T370-DFVs in 1974 and 1975.

Even so, with generous sponsorship assured from Embassy (cigarettes), he set out to develop his own cars in 1974-75. It was at Monaco in 1975 that the Hill F1 car made its first appearance, and Graham Hill himself made his last personal racing appearance.

More famous as a skier, Divina Galica started a handful of F1 races, this time in a Hesketh 308E in the 1978 Argentine GP.

Lord Hesketh made a brave attempt to race against the ‘Big Boys’ in F1 in the 1970s, but lack of finance was always a problem. This was Derek Daly’s 308E at Monaco in 1978, but the team soon folded thereafter.
Ligier of France was a thrusting concern with great ambition, and with generous sponsorship from the French national lottery. Ligier changed engine supplier several times during its existence. In 1989 the cars were JS33s, partly engineered by Richard Divila (ex-Fittipaldi), and powered by DFR engines. This was René Arnoux in the Spanish GP.

The second result, therefore, was that Ligier once again decided to move, reluctantly, away from DFV power, and built new cars around the turbocharged Renault V6. They would not come back to Ford, and Cosworth, for six years.

**JS33 AND JS33B**

By 1989 Ligier had suffered all the costly dramas of using turbocharged engines – first Renault, then BMW, then an unfulfilled courtship with Alfa Romeo – then, after the turbo era came to an enforced era, followed Williams’ example by choosing to run normally-aspirated 3.5-litre Judd CV V8s in 1988.

For 1989, it was decided to make a clean restart, but it is an indication of how far Ligier had slid down the F1’s greasy pole of success that they searched around for a star engineer, before settling for Richard Divila (ex-Fittipaldi, and other teams) to do the job for them. Divila, who could never be described as a visionary, produced a wholly conventional car, which was competent but by no means a front-runner, and was to run with the Hart-developed DFR engine.

Thus equipped, at least the company could begin to resume points-scoring once again, for René Arnoux and Olivier Grouillard were the drivers. Even so, this duo only finished 11 times between
low and sharp-profiled nose. Because the traumas of the rising rate suspension had eventually been solved in 1972, the basic front and rear suspensions of the ultimate M19C was carried forward to the M23.

The M23 was the sort of Formula 1 car which every designer, and every team boss, would like to see in use, for it lasted longer than expected, it was always competitive, it was reliable, easy to set up for a whole variety of events, and the drivers seemed to enjoy it too. Yardley-liveried cars were used in 1972 and 1973, with distinctive Marlboro (cigarette) liveried cars used thereafter, though one Yardley car carried on in 1974 for Mike Hailwood to drive.

Changes and improvements were made, gradually but progressively, throughout. For 1974 the team cars were modified to have longer wheelbases and wider wheel tracks, aerodynamic changes were made from time to time too, while in 1975 there was more than one suspension layout, and different wheelbases to be considered. For 1976 there was to be yet another derivative of the engine air-box style, Alastair Caldwell also devised a six-speed version of the Hewland FGA transmission, changes were made to the rear suspension, and some weight was trimmed off the cars.

Outright wins were recorded in each of the five years – 1973, 1974, 1975, 1976 and 1977 – that the M23 was in use (in 1977, the...
James Hunt was already World Champion when he drove this McLaren M26 throughout the 1977 season, and won three events outright. This, however, was the Austrian GP when, in a rare display of temperament, his DFV engine let him down.

1977. By that time, the style had changed because the engine oil cooling radiator had been relocated in the nose, which rather spoilt the original lines.

Although Hunt was first to race the car, his team-mate Jochen Mass joined in from the British GP of July 1977, after which there were always two M26s on the grids. Hunt himself won three races during the year – Great Britain, USA (Watkins Glen) and Japan – and was ably backed up by Mass, though he then left the team at the end of the season.

The M26 then carried on as McLaren’s choice for the whole of 1978, but as Hunt seemed to have lost some of his commitment, and Patrick Tambay did not seem to be as successful as Mass had

Difficult to recognise at first, this is a McLaren M26 with unfamiliar livery, as driven by Brett Lunger in the 1978 Monaco GP.
By mid-1969 the company’s very restricted ‘float’ of engines had become four-valve (48 valves in all) units, which produced up to 450bhp if they were ‘factory-fresh’. This heralded a short period when the Type P142 48-valve BRM vee-12s were fully competitive against the ever-increasing fleet of DFV-engined Formula 1 cars, for at the time Cosworth was claiming just 430bhp from its steadily-improving DFV.

This, however, was the height of it all, for in spite of much fiddling with shorter strokes, bigger bores, and cylinder heads with different airflow arrangements (a much-improved – or so it was claimed – package was noted as Type P192), the engines did not seem to improve through the 1970s (in any case, there were very few of them, and old age began to set in). They were eventually dropped mid-decade, when they were still no better than they had ever been in the past.

### FERRARI VEE-12

Although Ferrari was first on the scene of the new 3-litre F1 in 1966, with a smart new car, powered by a vee-12 power unit, this engine was not new, being effectively an upgrade of the existing 24-valve four-cam engine as used in the ‘works’ 275P sports prototypes, and was merely the latest along the line of famous vee-12s from Ferrari. The team also used old-type 2.4-litre vee-6 ‘Dino’ engines in 1966, but by 1967 the vee-12 had become its favoured power unit. Because Ferrari claims for power outputs were often derided by media pundits as ‘over-optimistic,’ those quoted for this vee-12 must be treated with caution. By late 1966 they had 3-valve twin-cam heads for which 370bhp was claimed, and in 1967 a new ‘reversed-flow’ type of cylinder head was installed (with the exhaust pipes flowing out of the high centre of the engine ...) for which 390bhp was the advertised figure. By 1968, the F1 rumour...