

# STARS & CARS

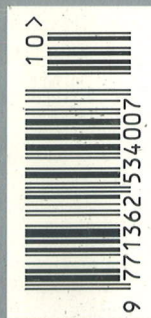
Powered by Mercedes-Benz



## TEAMWORK

Why pitstops are the key to victory

- RETRO THE DAY THE SILVER ARROWS WERE BORN 65 YEARS AGO
- FORMULA 3000 NICK HEIDFELD: CHAMPION IN THE MAKING





# STARS & CARS

The magazine of Mercedes-Benz Motorsport

**EDITOR** Jaimes Baker  
**ASSOCIATE EDITOR** Egon Zeimers  
**ART EDITOR** Frances Kiernan  
**CO-ORDINATOR** Wolfgang Schattling  
**CONTRIBUTORS** Elmar Brümmer, Adam Cooper, Christel Flexney, Peter Nygaard, Steve Matchett, Sean Klein, Hartmut Lehbrink, Peter Liddiard, Jonathan Noble.  
**PHOTOGRAPHY** Mercedes-Benz – Wolfgang Wilhelm; LAT Photographic – Steven Tee, Charles Coates, Gavin Lawrence; Laurence Baker, Sutton Motorsport Images, Hoch Zwei, Achim Kröpsch, Michael Levitt, Barry Hathaway, Gaukler Studios, DaimlerChrysler Archives, Ludvigsen Library, Auto Motor und Sport, Matthias Schneider.  
**PRODUCTION** Jim Turner  
**GROUP EDITOR** Andy Hallbery  
**PUBLISHER** Paul Clifton  
**COMMERCIAL MANAGER** Joseph Wheeler  
**PUBLISHING MANAGER** Julian Daniels  
**PUBLISHING ASSISTANTS** Neil Godwin-Stubbart, Ed Marr

STARS & CARS is published by Mercedes-Benz Motorsport four times a year. Printed by Cooper Clegg, England. Covers printed by Hubbard Print, Dronfield, England. Colour reproduction by F1 Colour, London, England. Reprinting in whole or part is forbidden, except with prior permission from the publisher. © Haymarket Specialist Magazines Ltd.

Produced by Haymarket Specialist Magazines Ltd  
38-42 Hampton Road  
Teddington, Middlesex  
TW11 0JE, England  
Tel: +44 (0) 181 943 5000  
Fax: +44 (0) 181 943 5872

For subscription details apply to:  
STARS & CARS  
PO Box 280  
Sittingbourne  
Kent, ME9 8FB  
England  
OR  
phone the Subscription Credit Card Hotline  
Tel: +44(0)1795 414800  
Fax +44(0)1795 414555

Cover photo: Wolfgang Wilhelm  
Contents photo: Steven Tee LAT

# CONTENTS

<b>GALLERY</b> Memorable images of Mercedes-Benz Motorsport	4
<b>STRATEGY: THE ULTIMATE GAME</b> Having the right race strategy in Formula One can be the key to success, but how is it worked out?	14
<b>PITSTOP HEROES</b> Every weekend the pit crews refuel and change wheels on the Formula One and ChampCars, but it's often their teamwork that wins races	22
<b>MEMORIES ARE MADE OF THIS</b> Photographer Matthias Schneider is renowned for his beautiful black & white images. We asked eight of the West McLaren Mercedes team to pick their favourites	32
<b>BIRTH OF THE SILVER ARROWS</b> It was 65 years ago that the name 'Silver Arrows' was used for the first time at the German Grand Prix at the Nurburgring	40
<b>EAT TO WIN</b> To be a winner in motorsport now the right diet is as important as fitness, car set-up and engine power	50
<b>POSTCARD</b> Every picture tells a story from the Mercedes Motorsport family around the world	58
<b>NICK HEIDFELD</b> The young German has risen from karting to the brink of F1 under the Mercedes Young driver policy	60
<b>FEEL PART OF THE TEAM</b> Official merchandise from the Mercedes-Benz Motorsport racing catalogue	67
<b>SUBSCRIBE TO STARS &amp; CARS</b> Don't miss a copy of the Mercedes-Benz Motorsport magazine	71
<b>RACE OF CHAMPIONS</b> In 1984 Mercedes gathered a remarkable group of motorsport greats together for the opening of the new Nurburgring	72
<b>RETURN TO THE THUNDER</b> The DTM2000 is an ambitious new saloon car series, Mercedes intends to be part of it	78
<b>A RACEDAY IN THE LIFE</b> Mercedes F1 bus driver Uwe Müller tells his story	82
<b>CALENDAR</b> Follow your favourite Mercedes drivers during 1999	83







GALLERY



### Stars in the eyes

The sun sets over the Hungaroring pitlane lighting up the famous Mercedes three pointed star as it frames the airbox of the West McLaren Mercedes against the evening sky.

PHOTOGRAPH BY STEVEN TEE/LAT





### Take that Mika

Mika Hakkinen gets an unexpected victory champagne shower from David Coulthard after their one-two result in Hungary.

PHOTOGRAPH BY SUTTON IMAGES





GALLERY



### Home run

Canadian full house of driver, team and circuit as Greg Moore blasts past Toronto's famous Princes' gate in his Player's Forsythe Racing Reynard.

PHOTOGRAPH BY BARRY HATHAWAY





GALLERY



### Speed king

The feeling of speed is captured perfectly as Mika Hakkinen flashes past the Hockenheim barriers at over 200mph on his way to pole position in the German Grand Prix.

PHOTOGRAPH BY GAVIN LAWRENCE/LAT





There are days  
when the ocean reminds me of her  
awesome hidden power.

In moments of tranquillity she charms me.

Then suddenly

*very suddenly*

she assumes a distinct and very definite existence.

From fathomless depths she produces that elemental sound.

That grumbling groan of pure, potential power.

As if for the first time,

I'm aware of the phenomenon that lurks beneath the surface.

All the while the current acquires a momentous velocity.

Each second adding to her speed

to her inevitable urge.

And I'm left captivated by her eternal energy.



E-class AMG





# STRATEGY

## THE ULTIMATE GAME

The right race strategy can make the difference between winning and losing. On Grand Prix morning the West McLaren Mercedes team's tactic is its most closely guarded secret, but who decides what strategy to use and on what do they base their decision?

WORDS ELMAR BRÜMMER PICTURES LAT





F1



Mika Hakkinen discusses his car's characteristics with his race engineer (right) and Adrian Newey. These discussions of the state of the car, track, weather and numerous other variables will all go into the final strategy calculations.

LAT/CHARLES COATES

**T**ry getting some information on the Mercedes FO 110G engine's horsepower from Mario Illien and you'll think that there is no one better at giving polite but non-committal answers. But there is. West McLaren Mercedes's technical director

Adrian Newey keeps his thoughts on race strategies just as secret - if not more so - as his Swiss counterpart does with the performance of his power unit. Very quickly the eloquent Briton becomes monosyllabic - in the true sense of the word. Most of the time he gets by with "yes" and "no" and even then he prefers the shorter construction. Everything is top secret.

Understandably so, for this kind of chess involving people and engines is all but a game. If anything it is a probability calculus. And as those interested in mathematics will know this measures the "extent to which an event is likely to

time at which a given race leader is likely to run into backmarkers and how much time it will cost him to overtake them.

There are a lot of factors that can upset the best-planned strategy if they are not taken into consideration beforehand. The big unknown is, of course, always the weather, particularly when you are at a track like Spa or the Nürburgring, where conditions can vary from one corner to the next. The weather influences track temperatures. Track temperatures play an important role when it comes to deciding which tyres to use, how they will behave and when they are likely to be worn. This estimation must be taken into consideration when deciding on the fuel loads and so on and so forth.

The weather forecast sometimes even influences minute details such as the size of the cogwheels in the gearbox. Both the tactical and the technical crews at West McLaren Mercedes are

**Meticulous preparation is as essential for the strategists as it is for the cars. Gigabyte upon gigabyte of information from preceding grands prix, from the race and from the history files need to be extracted, re-sorted and analysed.**

occur, considering the ratio of the favourable cases in relation to the whole number of cases possible". What Newey and McLaren aim to do by trying to calculate a race is - mathematically speaking - the "creation of elementary events". In an era where - for aerodynamic reasons - it is almost impossible to pass an equally-quick competitor on the track, choosing the right time for the pit stops is more than crucial. Race strategy is therefore not simply a matter of timing but also of well-functioning teamwork.

Meticulous preparation is as essential for the strategists as it is for the cars. Gigabyte upon gigabyte of information from preceding grands prix, from the race and from the history files need to be extracted, re-sorted and analysed. And this is done not only with the data from McLaren but from all the other teams as well. Taking all eventualities into account creates many possible strategies, which is why there are constant simulations and dress rehearsals going on.

A carefully prepared team of engineers will always ensure that two thirds of the strategic foundations are laid before they get to the racetrack on Thursday morning.

What remains to be done on location is the fine-tuning. After all, practice is still the best indicator. It is, for instance, important to observe what the slower teams do. This helps to calculate the point of

aware - even when preparing themselves - of the most important principle of a successful strategy: "Accuracy is nothing without flexibility," says Adrian Newey. Although reticent when it comes to public statements, he knows that multi-track planning is required when it comes to race strategy.

Newey knows that a bad start, a spell behind the safety car, a rain shower or just some slow and difficult-to-lap backmarkers can upset what seemed to be logical within no time. Suddenly everything changes. Fuel consumption goes up, engine and tyre temperatures rise, pre-calculated lap times bear no significance any more and subsequently the timing for the pit stops becomes irrelevant.

This is why every experienced tactician will always allow for time slices when setting up the race schedule. That way there is time and room for reacting to a slow car aiming for the pits just in front of one's own car. Time to tell Mika or David to stay out for another lap. After all, you want to gain, and not lose, time in the pitlane. If, on the other hand, a West McLaren Mercedes driver is stuck behind a slower car on the track it might be advantageous to call him into the pit earlier than scheduled.

On top of this, it is important to observe the refuelling schedule of one's immediate opponent. You might either instruct your drivers to come in at





F1

the same time as their rivals, hoping to leave them behind in the pits, or you might tell them to stay out to use the lightness of the car to do some qualifying laps while your opponents are forced to go slower due to fresh tyres and a heavy fuel load. One objective - an infinite number of solutions.

All these imponderables make one thing more than clear: Your basic tactics can change from lap to lap, if necessary. Tacticians have their own race going on. When setting-up their strategy they even consider the length of the pit lane, which can sometimes be shorter than the corresponding stretch of track. They try to anticipate everything and make a note of every eventuality that might have foiled their meticulous planning - not only in their minds but also in their hearts, because strategic planning has a lot to do with intuition. The number of factors which lead into a decision on a certain action plan is almost limitless, and

misleading to the outside crowd unless you know who is on an empty and who is on a full tank, or who is using fresh and who is using old tyres. All this information is for insiders only and giving it away is a punishable offence.

Before and after each practice session two harmless sounding words are keeping team bosses, engineers and drivers occupied: briefing and de-briefing - nothing less and nothing more than highly-concentrated talkshows. "At the end of our meetings somebody has to make a decision, but in general we find a solution with which we can all live," says Newey, aware that after qualifying, any jointly-taken decision can be nothing but some scribbles on a piece of paper. He adds: "Grid position is a decisive factor with regard to planning."

Thinking through the alternatives is, of course, also on the agenda within the confines of the silver

motorhome. "Apart from the main strategy, the drivers need to know what the alternatives are, at least on a basic level," Newey explains. "But their main field of interest is always plan number one. It would be too confusing to discuss all the variables in detail." What's more, besides the substitutional strategies which Newey has in his head there could be plenty of spontaneous changes during the race.

While the race is going on there is division of labour between Adrian Newey and Ron Dennis. As well as being responsible for the basic tactics, each of them has responsibility for one of the drivers and his strategy: Newey for Coulthard and Dennis for Hakkinen. Besides that, Dennis also keeps Mercedes Motorsport chief Norbert Haug informed of what's going on. "When we look for the right decisions it's quite a democratic process," explains Newey. "On top of talking to the drivers, Ron and I also discuss everything between us. Each one

**"Apart from the main strategy, the drivers need to know what the alternatives are, at least on a basic level. But their main field of interest is always plan number one. It would be too confusing to discuss all the variables in detail."**

ADRIAN NEWEY



LAT/STEVEN TEE

occasionally even the perfectionist tactician will admit that a bit of luck is involved.

But it would be too easy to say that the strategist thinks and the driver steers. "If the drivers do not support the strategy we have chosen then we must rethink it - after all, it is them who have to carry it out," says Newey. Which leads us neatly to the heart of the weekend job of Formula One's most acknowledged designer, often also reverently referred to as a genius. From the first free practice session on Friday right through to the warm-up on Sunday morning, Newey and his team will ceaselessly plan, improve, rethink or modify race strategy.

Friday practice is usually used to find the perfect set-up for the race on Sunday. Lap times are irrelevant and Friday classifications are often

**Above: The Formula One world revolves around the de-briefing room. David Coulthard, Mika Hakkinen and their engineers discuss everything that affects the car's performance as Newey sits in the background and makes notes to base his strategy around. Right and far right: Hakkinen, Newey, Coulthard, Norbert Haug and Ron Dennis, the five men on whom the McLaren strategy depends.**

knows what the other one is doing. Sometimes we apply different strategies, but that does not mean we drive against each other."

Newey has never regarded himself as being a single warrior but always as a team player. He has a unique way of dealing with problems and finding solutions, be it to build a Silver Arrow or to look for the missing pieces in the strategy puzzle. "You have to question everything. That's how I look at the world," he admits.

And then, for the second time during the interview, he refers to an expression which marks the real challenge for the West McLaren Mercedes thought centre: "Flexibility". Action and reaction.

During the race, both Newey and Dennis are fed with all sorts of data and confronted with ever-changing situations. At least a 10 on the stress

scale. More and more often it's the pitwall crew that wins the decisive tenths of a second. But rarely will you see Newey in any other than a pensive mood. Not for nothing is he considered as the mastermind of Formula One.

Now, during the race, he finds all the answers to the questions which the team discussed on the previous days. Now he can judge clearly whether, for instance, it is possible to gain some time by doing an additional pitstop, thus having an easier car. According to a rule of thumb and depending on the racetrack, 10 kilograms of Super Plus petrol can make a difference of between two and a half and almost five tenths of a second per lap. But how much time is needed to do an additional stop? And the clever strategist might add: Wouldn't it be safer to make it two seconds longer? Decisions like these





HAPPY.



PURE.

It takes the Finnish midnight sun for the barley. It took the Ice Age for the pure, glacial spring water. (If we run out, please allow a million years for delivery.)

IN THE PURE SPIRIT OF PARTNERSHIP. FINLANDIA VODKA.  
www.finlandia-vodka.com

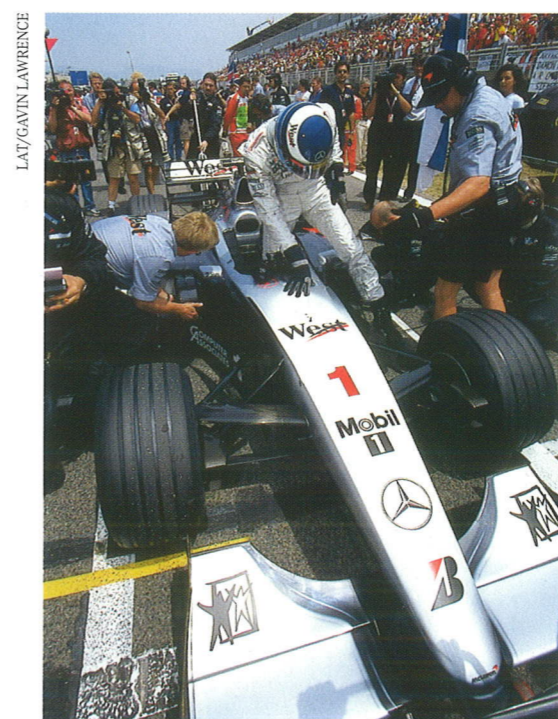


also influence the driving style of the drivers. There is a pro and a con to every situation and the dividing line is all too narrow. What's really unfortunate about it is the fact that, within a split second, a brilliant strategy can easily turn into a miserable one in the eyes of the public. But Norbert Haug warns against seeing everything in a 'black-and-whitish way', for that would be too easy. Yes, you could always copy what your opponents are doing, but what if they suddenly changed their mind? Hesitating doesn't get you anywhere. If a chance offers itself you must take it. Rarely does Formula One give you a second chance. The better idea always beats the good one - that's Newey's credo at the drawing board as well as on the pitwall. German newspaper Süddeutsche Zeitung recently commented: "It is only logical that McLaren Mercedes and Ferrari rely on their top engineers to command the troops. If you

understand the complexity of a racing car then you also comprehend the complexity of a Formula One race." This is exactly where even computers sometimes fail. Asked about computer simulation, Norbert Haug smiles: "We are only interested in software which is able to anticipate at which point during a race a car will spin..." So the real thing remains in the hands of the team, and it cannot be denied that Formula One has become more and more of a team sport. Strategy is often the decisive factor and when the strategy is right everything looks as though it's driven by magic. No wonder the choreographers behind the strategies are often looked at as masterminds by the public. But it's an attribute which Adrian Newey and his Ferrari-counterpart Ross Brawn quickly reject. For them it is just a mathematical exercise. Whether a tactical



Above: Pit boards keep drivers informed of changes in strategy. Above right: During the race Newey and Dennis monitor all the variables.



Above: Even as the drivers climb into their cars on the grid the strategy is still being amended.

**Strategy is often the decisive factor and when the strategy is right everything looks as though it's driven by magic.**

approach is successful or not always shows itself in the same manner: "The winner's strategy is always the right one," says Haug. When Newey and Brawn recently appeared together in public, the Ferrari man paid a massive compliment to the McLaren strategist: "Adrian is a very strong opponent. He has made my life difficult many times." Then the presenter asked Brawn if he was envious of his colleague at McLaren Mercedes. "No - only of his results." ☺





WORDS STEVE MATCHETT & PETER NYGAARD PICTURES LAT & MIKE LEVITT

# PITSTOP HEROES



F1/CART

Pitstops for fuel and tyres have always been a part of ChampCar racing, but only since 1994 have fuel stops been an integral part of Formula One. In the last five years the crews in both series have been scrutinised by television week in week out because it is often up to them to perform the miracles that win races.

Imagine the scene: A racing car is coming towards you - fast. The natural reaction would be to run for cover, but you have to stay - it's part of your job, and millions of Dollars depend on your ability to do the job properly. So you stay, and pray that the driver will be able to stop the car a few centimetres from you. A scene from a horror movie? No - just the Sunday job of the pit crews of West McLaren Mercedes' and Mercedes' teams in ChampCar, who service the drivers with fuel and new tyres.

The pit crews are the unsung heroes of motorsport: Their work is probably more dangerous and definitely less glamorous than the high-profile jobs of Mika Hakkinen, Greg Moore and co - and they are under just as much pressure.

Certainly in Formula One, where the current chassis make overtaking very difficult, the pitstop has taken on an enormous importance. Just ask David Coulthard, who passed Eddie Irvine's Ferrari

to take the lead during the pitstops and went on to win the British Grand Prix.

"You can tell if you've had a quick pitstop," says Coulthard. "Everything just gels. When you get away smoothly and back onto the track ahead of the opposition then you know the guys in the garage have worked another miracle."

And that is what motivates such people. The will to win - the desire to be the best. Just as all racing drivers strive throughout their careers to become a world champion, so these mechanics are at the height of their profession too, the pinnacle of the engineering ladder.

However, to be the best takes practice, lots and lots of practice. "You've only got to have one little thing go wrong somewhere, and the whole weekend could be wasted", says West McLaren Mercedes' team manager Dave Ryan. "There could be any one of 20-odd people who makes that mistake, and if someone does make a cock-up, you



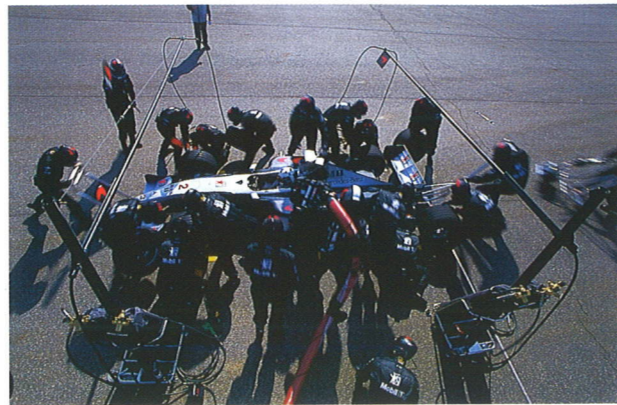


F1/CART

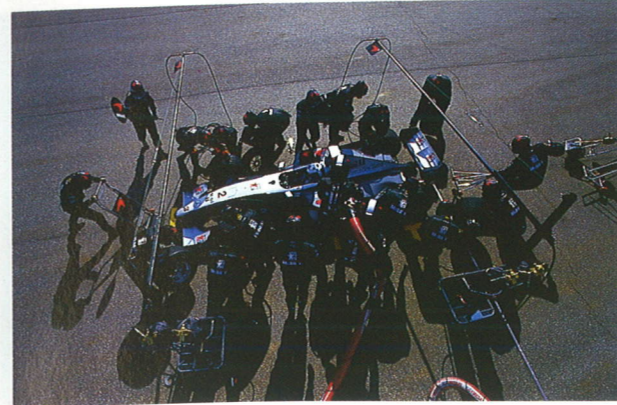
**A FORMULA ONE PITSTOP** by Dave Ryan, West McLaren Mercedes team manager:



**Minus 30 seconds** Tyres taken out of tyre warmers. Pit crew assembles in pit lane. The car arrives having slowed from the 50mph pit lane speed limit. The lollipop is placed in front of driver to show him where to stop."



**0 - 1 Seconds:** The car stops - hopefully exactly at the marks on the ground. The *jack men* front and rear position the jacks under the car, and the air hammers are on the wheel nuts 0.2 - 0.3 seconds after the car has stopped."



**1 - 2 Seconds:** The *jack men* lift the car and the air hammers go into action at each wheel as the car comes to a stop. The fuel hose is connected and fuel starts going into the car 1.5 seconds after the car has stopped."



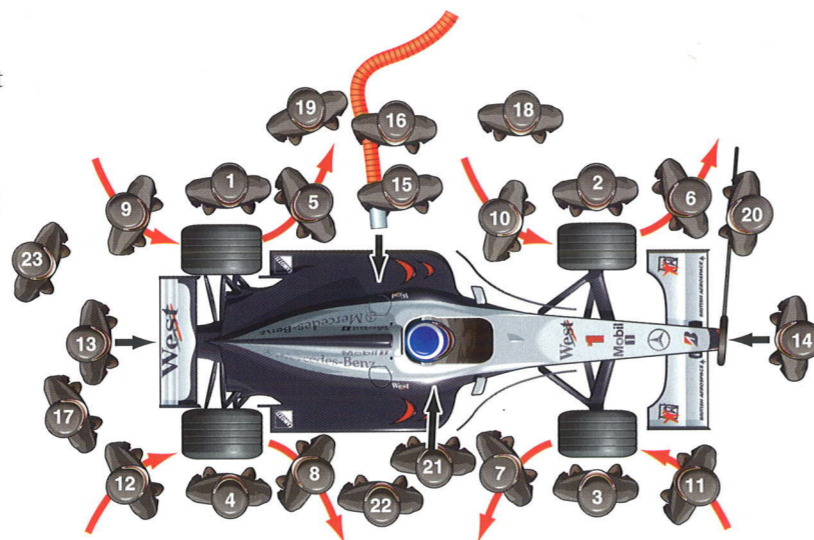
**2 - 3 Seconds:** The wheels are taken off the car. The mechanics with the air hammers have a spare wheel nut in case there are problems with the original one. A second mechanic removes the wheel from the hub. Refuelling continues."

have got to accept that we are a team. And try to get it sorted out for the next stop."

In February, before the start of the racing season, West McLaren Mercedes spent a day at a small Gloucestershire airfield perfecting the detail and choreography of their pit stop procedures.

Practice sessions are also video recorded to enable the team manager to analyse the proficiency of each team member: the mechanics trying out all the different tasks of a refuelling pit stop. It soon becomes apparent that some individuals are naturally more adept at certain positions and a natural synergy develops.

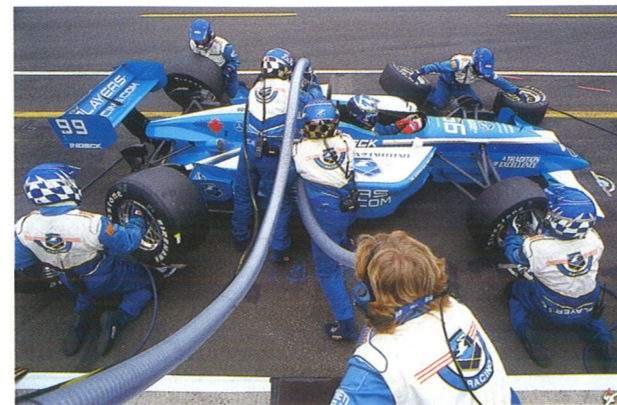
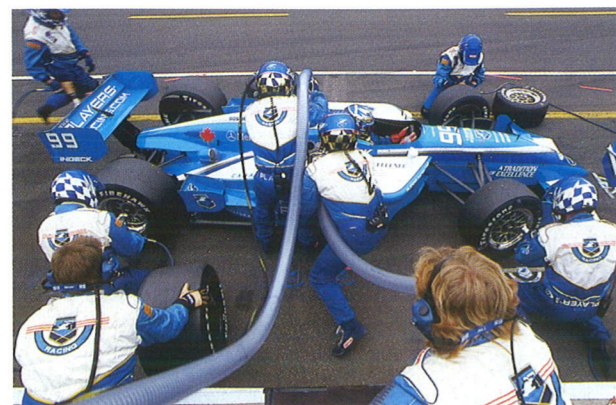
Once the definitive line-up of the crew is established then the team continue to rehearse before each Grand Prix. "Thursday evening, when we arrive at the circuit we try our first full practice: it's a full wet practice which means that we have all the kit on and that fuel actually enters the car.



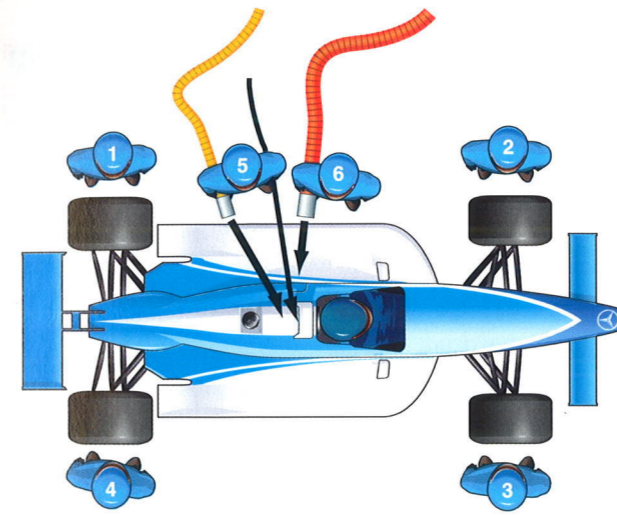
**1-4:** Wheel gun. **5-8:** Wheel off. **9-12:** Wheel on. **13:** Rear jack. **14:** Front jack. **15:** Fuel nozzle. **16:** Fuel spill wipe. **17:** Starter and spare jack. **18:** Fuel hose support. **19:** Fuel rig. **20:** Lollipop man. **21:** Visor/screen clean. **22:** Car support. **23:** Fire extinguisher

**Minus 30 seconds** The six mechanics go over the wall in preparation for the car. The car arrives in the pitlane slows to the 50mph speed limit and stops at lollipop held from behind pit wall."

**0 - 2 Seconds:** We try to plug the fuel hose in while the car is still in motion. The *vent man* connects the hose to activate the pneumatic jacks and then the fuel vent hose to let fuel vapour safely out of the tank. The outside rear tyre guy runs around the back or the car would run over the hose on its way in."



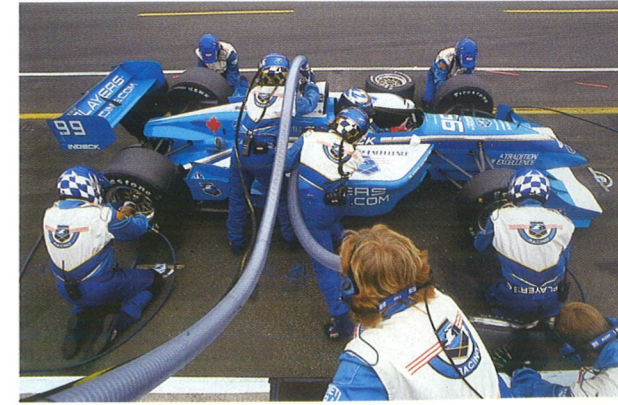
**A CHAMPCAR PITSTOP** by Buddy Lindblom, Player's Forsythe engineer:



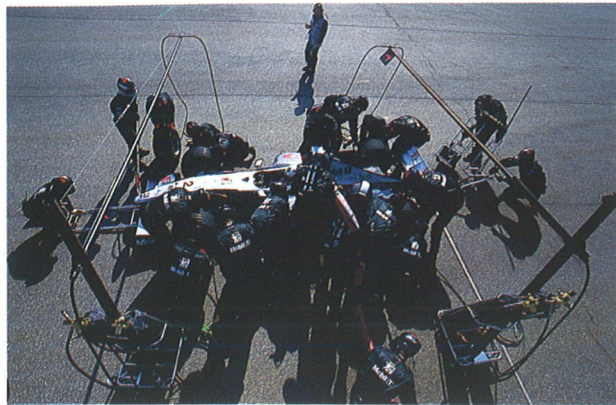
**1-4:** Wheel men. **5:** Vent & pneumatic jack man. **6:** Refueller.

**2 - 4 Seconds:** The old tyres are taken off - actually, the wheel nuts should be off within two seconds, and then the wheels are removed. The new tyres are put on and the fuelling continues. The fuel hose holds five to six gallons and is therefore quite heavy - I guess the total weight is about 45 pounds."

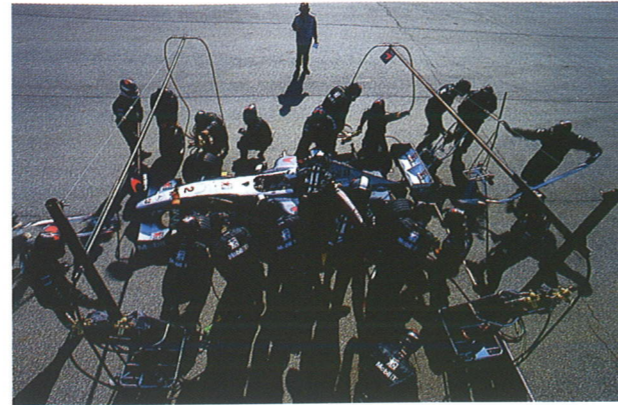
**4 - 6 Seconds:** By now the new tyres should be almost ready. The front tyres take about five seconds to change; the rear tyres a little longer. We use air hammers similar to those in Formula One, and I guess they weigh about six or seven pounds."



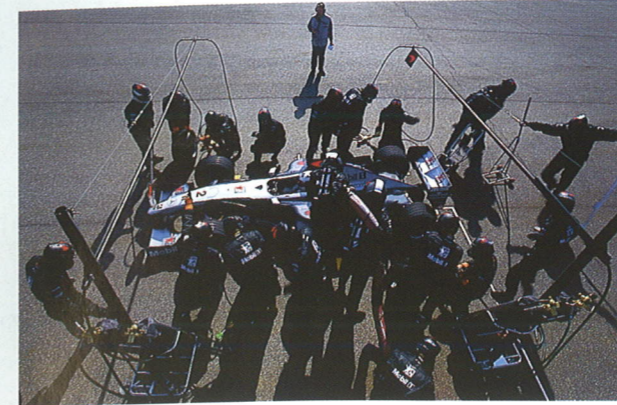




**3-4 Seconds:** The third mechanics on each corner put a new wheels on the hub, and the air hammers go into action again. It normally takes about 0.2s to loosen or fasten the wheel nuts. Each wheel man signals all-clear. Refuelling continues."



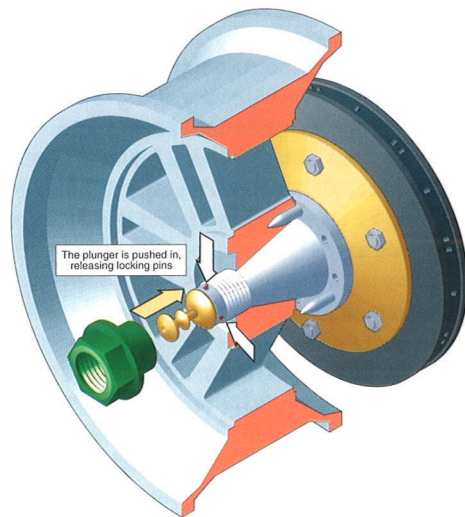
**4-5 Seconds:** The jacks front and rear are lowered and the *jack men* remove the jacks. If the driver has asked to have his visor cleaned this should be finished by now. Fuelling continues."



**5-6 Seconds:** By now, only the fuel men should be working on the car. If the radiators need to be cleaned or part of the car checked for accident damage this should be finished by now. Refuelling continues."



**6-7 Seconds:** Fuelling about to finish. The driver is shown the *1st. Gear* board, and as soon as the required amount of fuel has gone into the car, the hose is off. The driver gets the signal to exit."



**Above:** The wheel hub has an easily operated locking system which pushes pins out of the hub to ensure the wheel cannot come off.

Formula One v ChampCar – The pitstop facts		
	F1	ChampCar
Number of people working on car during pitstop	Free	6
Usual number of stops per 200 mile race	1 or 2	3
Fuel	Petrol	Methanol
Refuelling system supplied by	FIA	Team
Speed of fuel flow during pitstop	12 l/sec	Gravity
Consumption - approx miles/gallon	2.25	4.5
Length of races - approx miles	200	200 - 500
Fuel tank maximum size - litres	Free	35 gallons
Way of lifting car during pitstop	Manual jacks	Built-in pneumatic jacks
Speed limit in pit lane	50mph	50 mph
Length of optimum pitstop (fuel / tyres) - sec.	7	14

**6-8 Seconds:** By now all wheels should be OK. It should take about 6.5 seconds to change the outside rear wheel as the guy had to run around the back. Farside front wheel man throws wheel gun and air line to colleague over the wall to clear the way for the car's exit. Refuelling continues."



**8-10 seconds:** The car should be on the ground now and in gear. This is most nerve-racking time as we now only wait for the *fueller* and the *vent man*. If the front wing needs adjusting, this is by the front wheel men. Fuelling continues. Farside front wheel man takes job of holding the car until stop completed."



**10-12 Seconds:** We are still waiting to the *fueller* to finish. Some teams take the opportunity to clean the driver's visor or even hand him a drink on a long pole from behind the wall. Greg Moore has never asked for this – he makes sure to fill up before the start."



**12-14 Seconds:** When the *vent man* sees fuel in his *window* he pulls off and this signals the *fueller* to pull out. This is the most dangerous part of the stop, as it is important to get clear of the car. Rear wheel changers may push the car away and a jet of water is shot at the fuel filler on the car to clean away any residue."





Pole Position.



Warsteiner Brauerei, Tel. (0 29 02) 88 0, www.warsteiner.de

DAS EINZIG WAHRE

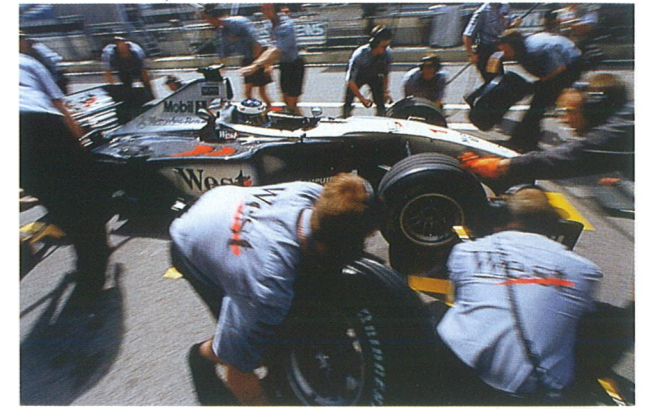


WARSTEINER

Spitzen-Pilsener der Premium-Klasse



7+ Seconds: The car heads back into the race, hopefully having gained a position or two."



The West McLaren Mercedes crew practice on race morning

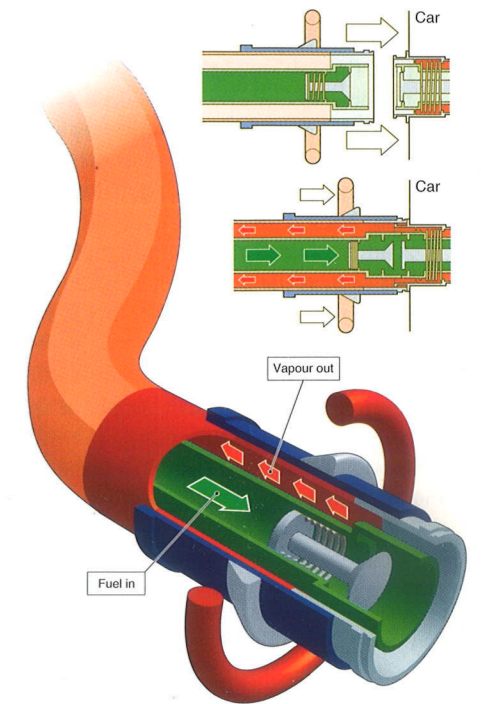
when you have to concentrate on a range of different things including not stalling the engine," says Hakkinen. "As you are coming off the track you are preparing yourself for what is going to happen next - from stopping at your garage to pulling away at the end of the stop. Every action is amplified because it all happens so quickly."

Although the physical aspects and psychological stresses of CART and F1 pitstops are almost identical, the processes are markedly different. For a start ChampCar pitstops are much more frequent due to the differences in fuel type and tank size.

Formula One rules decree that Grand Prix cars run on what is in principle unleaded petrol (but blended to optimise power, weight and consumption) and there is no restriction on the size of the fuel tank. ChampCars, however, use Methanol.

Methanol consumption is about double that of petrol and the tank content in ChampCar must not exceed 35 gallons. This means that while the McLaren Mercedes can finish any Grand Prix with

Right: The FIA supplied Formula One fuel nozzle combines both fuel in and vapour extraction functions in one via a double tube system. The fuel cannot be released until the spring loaded collar locks onto the car.



Below left: The rest of the mechanics can only watch and lean out to offer assistance as the six 'active' pit members change the wheels and refuel. Below right: The view from behind the wall as the refueller and vent man are forced to wait for the 35 gallons of fuel to flow down the pipes by gravity.



F1/CART





F1/CART



Above left: The McLaren wheel man carries a spare nut just in case of problems. Above right: The hammers are operated by compressed air

just one fuel stop, the CART cars will require three stops to finish a standard 200 mile race or up to seven for a 500 mile race. This is purely theory, of course, as ChampCar races only very rarely run without full-course yellows flags, which means the field circulates slowly - saving fuel and, possibly, a pitstop - behind the pace car.

"A few years ago, the drivers could go into the pits as soon as the yellow came on," says Lindblom, "but for safety reasons, the pits on the ovals are now closed for the first couple of laps after a yellow comes on. But at the road courses we still have almost the complete field in the pits at the same time. Then it gets kind of hectic..."

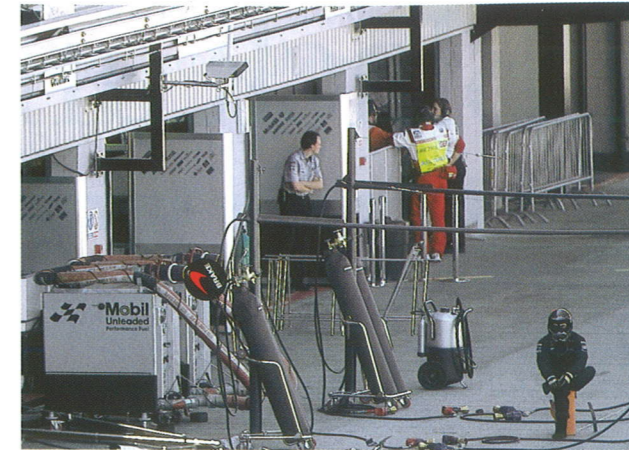
Another property of Methanol is that water is the most effective fire fighting agent, which explains why CART pits are lined with cauldrons of water.

While the pitstop strategy in Formula One - one, two or even three stops and at which time - is a

### The ChampCar crews must always be on stand-by while the F1 crews under normal conditions know before the race when they will be jumping into action.

relatively simple, mathematical calculation taking into account fuel consumption, tyre wear, length of pit entrance/exit etc., the 'yellows' make ChampCar strategy much more of an art: The same variables as in Formula One are taken into consideration, but the team management must also try to read the race and be prepared to take chances; perhaps dropping a pitstop in anticipation of a yellow - and risk needing a quick stop for just a few litres of fuel shortly before the end.

Below left: CART crews traditionally wear helmets painted in the colours of their driver. Below right: The Player's Forsythe crew is pit through it's paces during a race weekend to try and win vital tenths of a second.



Above left: The front wheel man indicates where the car has to stop during West McLaren Mercedes's exhaustive pitstop test day at an airfield in February. Above right: A solitary figure waits in the F1 pitlane. "Everyone prepares in different ways," says Dave Ryan.

few litres of fuel shortly before the end.

All this means that the ChampCar crews must always be on stand-by while the Formula One crews under normal conditions know before the race when they will be jumping into action.

"Yeah - I guess you can say we are under a lot of pressure", Lindblom says. "CART is so competitive these days, and this means that even a fraction of a second lost during a pitstop can cost you so much."

A further contrast between the two championships is the levels of pitlane access. The layout of the CART pit stipulates that there must be a wall between the team and the pit lane, while the F1 teams have access direct from the garage.

The CART crews are forced to wait behind the wall until their car is coming in, while the F1 team can stand in the pitlane at any time.

With the ChampCar crews under more constant pressure than their F1 colleagues, it is ironic that

CART rules only allow six mechanics to work on the car in the pit compared to an unlimited number (usually between 18 and 21) in F1.

This means that certain aspects of a CART stop have to be completed from behind the wall, for example passing drinks bottles to the driver and cleaning his visor.

Combined with a relatively slow gravity fed fuel flow, it is not surprising that an optimum ChampCar stop at 12 - 14 seconds takes approximately twice as long as that in F1 with the fuel pumped in from the FIA supplied equipment at a speed of 12 litres per second.

The other big difference is that in CART the pit crew alter the front wing aerodynamics during the pit stop via a screw adjacent to the front wing. Although F1 teams can do this - it was brought over from CART with the arrival of Jacques Villeneuve - it is a very rare occurrence. ☺

Below left: The fuel nozzle in the American series purely injects fuel unlike the rather more complicated F1 version. Below right: hub's eye view. The Forsythe wheel jack man has to remove the old wheel and fit the new one as well as operating the air jack.







# Black and white

F1

Formula One stirs the imagination like no other sport on the planet. Here, German photographer Matthias Schneider captures some of its most beautiful moments



**The profile of speed –  
balancing on the edge**

**Mika Hakkinen in the  
McLaren-Mercedes MP 4-14  
at the Casino Corner in  
Monte Carlo**



The dark forbidding sky seems to perfectly compliment the fluid shape of the cars

David Coulthard in the McLaren-Mercedes MP 4-14 on the circuit at Barcelona



F1







F1



**A perfect symmetry  
of function and  
design**

Engine cover of the  
**McLaren-Mercedes MP4-14**





F1

The loneliness of a driver – the next race is always the hardest

Mika Hakkinen  
on his way to the Cockpit







RETRO

THE BIRTH OF THE  
SILVER  
ARROWS





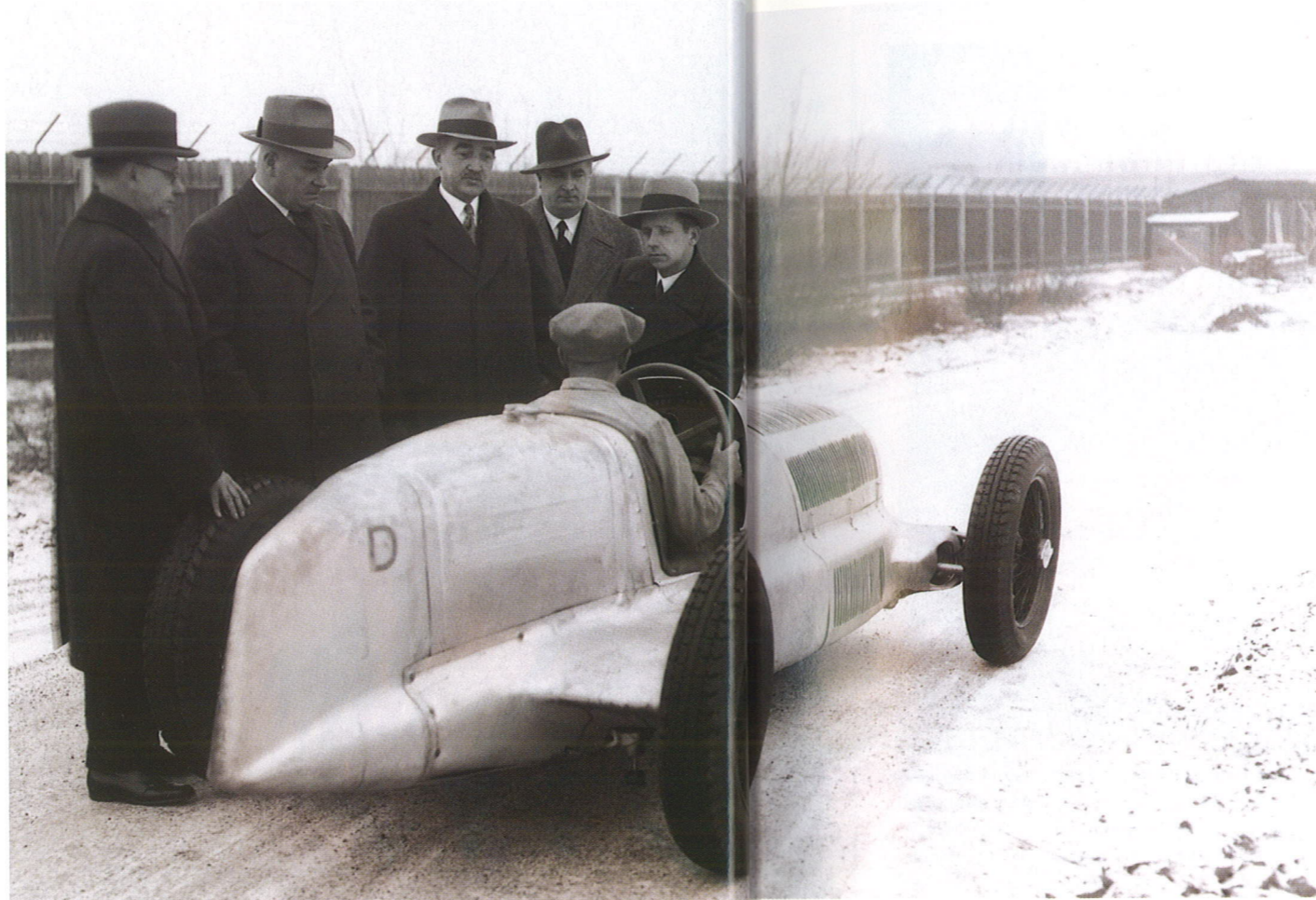
RETRO

Some of Mercedes-Benz's greatest success have been achieved with the Silver Arrows. The colour choice was the end result of clever thinking

Not every high-flyer is a whizz kid. This even applies to cars. The successful debut of the Mercedes-Benz W25 at the International Eifel Race on June 3, 1934, was preceded by a series of frustrations. In November 1933, the ambitious project - hidden behind a veil of secrecy just like its successor 65 years later - started to take shape in the Mercedes factory at Untertürkheim. At the end of February 1934, the team took off for its first test at Monza. After only a few laps the compressor failed to function. The unpleasant session was rounded off by Manfred von Brauchitsch's accident, which was probably caused by a faulty tyre.

In March, the team returned with the restored car which the experienced Luigi Fagioli thrashed around the Royal Park and along the Mailand-to-Varese motorway. Later that month, motorbike record holder Ernst Henne gave the novice a try on the Nürburgring, where he complained about a problem with the differential, which affected the handling in a negative way. In the end Henne was caught out by a sudden start of the compressor, which resulted in a spin.

By the beginning of May, the W25 had found its preliminary final shape. It featured a shorter tail which



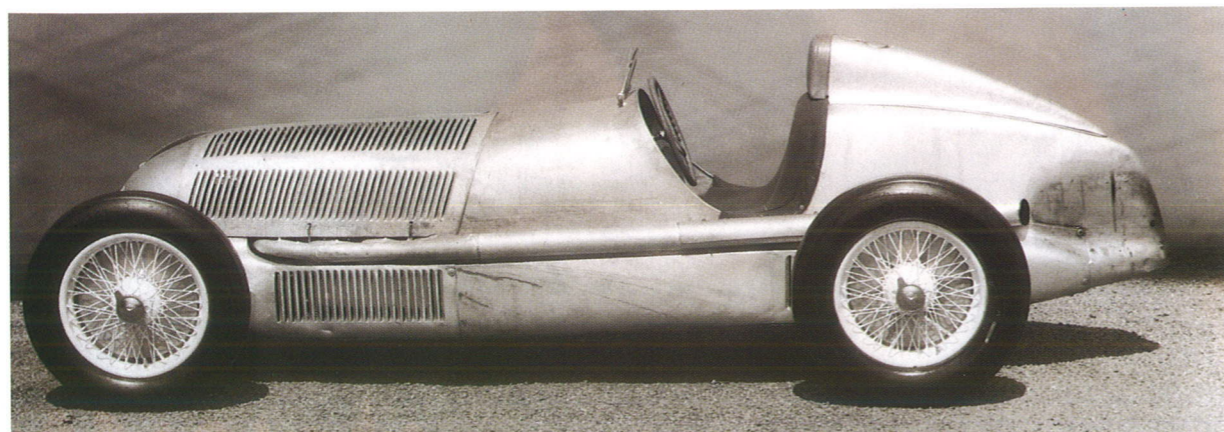
Mercedes-Benz team manager Alfred Neubauer (second from the right) watches as the first W25 rolls out of the factory.

### Mercedes-Benz W25

On 12 October 1932, in the middle of the economic recession that followed the 1929 Wall Street crash, the sport's legislative body, the A.I.A.C.R. (Association Internationale des Automobile Clubs Reconnus), introduced a new rule book. As from 1934 grand prix cars had to be no heavier than 750 kilograms without tyres and fluids and no less than 86 centimetres wide. On top of that races had to be at least 500 kilometres

long. The reason behind this racing formula was to abandon quick double-engined heavyweights such as the Alfa Romeo Tipo A and the Maserati V5 from the racetracks.

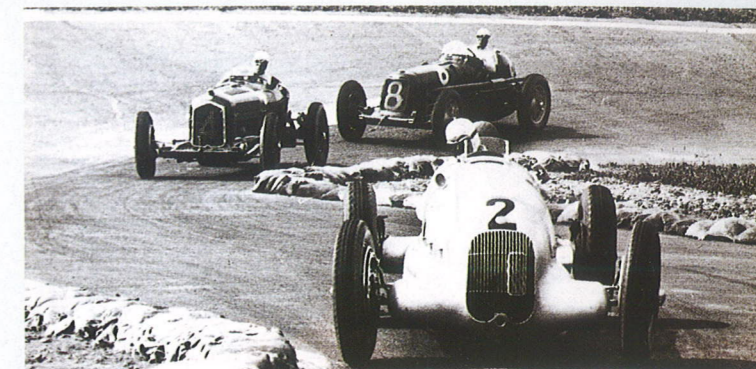
Mercedes' answer to the new rules was the W25. Its frame resembled previous construction schemes - it had U-shaped longitudinal members - whereas its suspension showed the direction in which



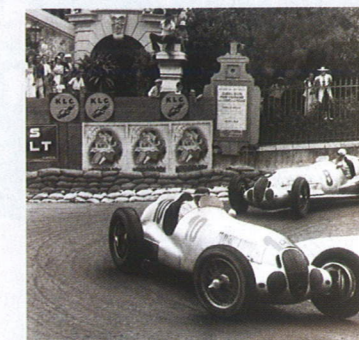
future development was going: independent suspension at the front, swing axle with leaf springs and snubbers at the back. The gearbox hid four forward and one reverse gear which could be operated from a shifting gate with a latch.

The eight-cylinder in-line engine weighed 211 kilograms. It was a four-valve power plant with two separately sealed units, each incorporating four combustion chambers and their water jackets under one cylinder head. The compressor - located at the front - supplied two pressurised carburetors. The fuel tank took 214 litres of petrol, of which it gave away 98 litres per one hundred kilometres. It was a toxic cocktail made up of 86 per cent methyl alcohol, 8.8 per cent acetone, 4.4 per cent nitrobenzene and 0.8 per cent ether that propelled and at the same time cooled the vociferous engine.

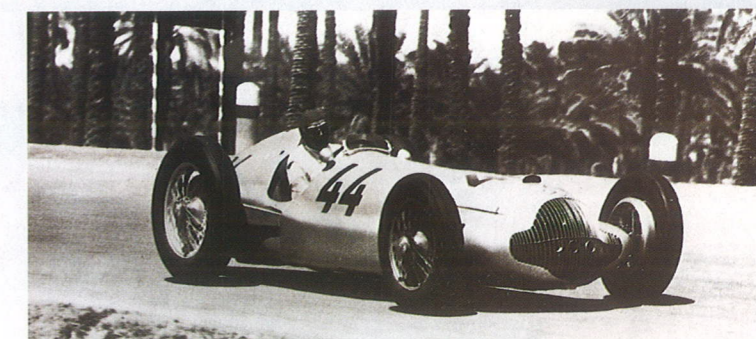
And because it was only the weight of the car that was restricted there was no stopping the expansion of the engine's cubic capacity and therefore its power. The original engine which bore the factory code M25A developed 354 bhp at 5,800 rpm from 3.36 litres. By 1936, the year of the Silver Arrow crisis, the engine - then named ME25 - had been bored to 4.740 litres from which it supplied 494 bhp at identical rpm.



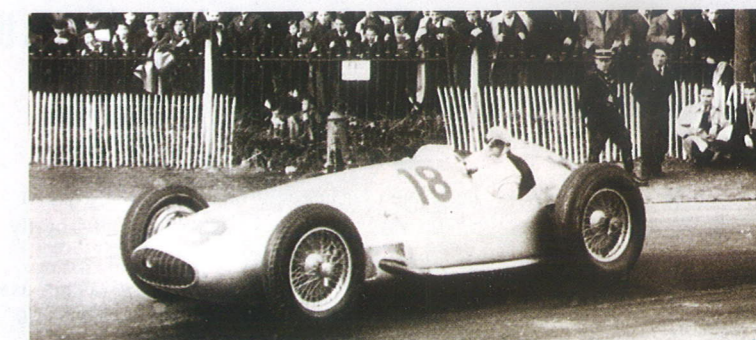
1934-36: W25 - The first Silver Arrow.



1937: W125 - An evolution of the previous car.



1938: W154 - A response to the new rules limiting engines to 3-litres.



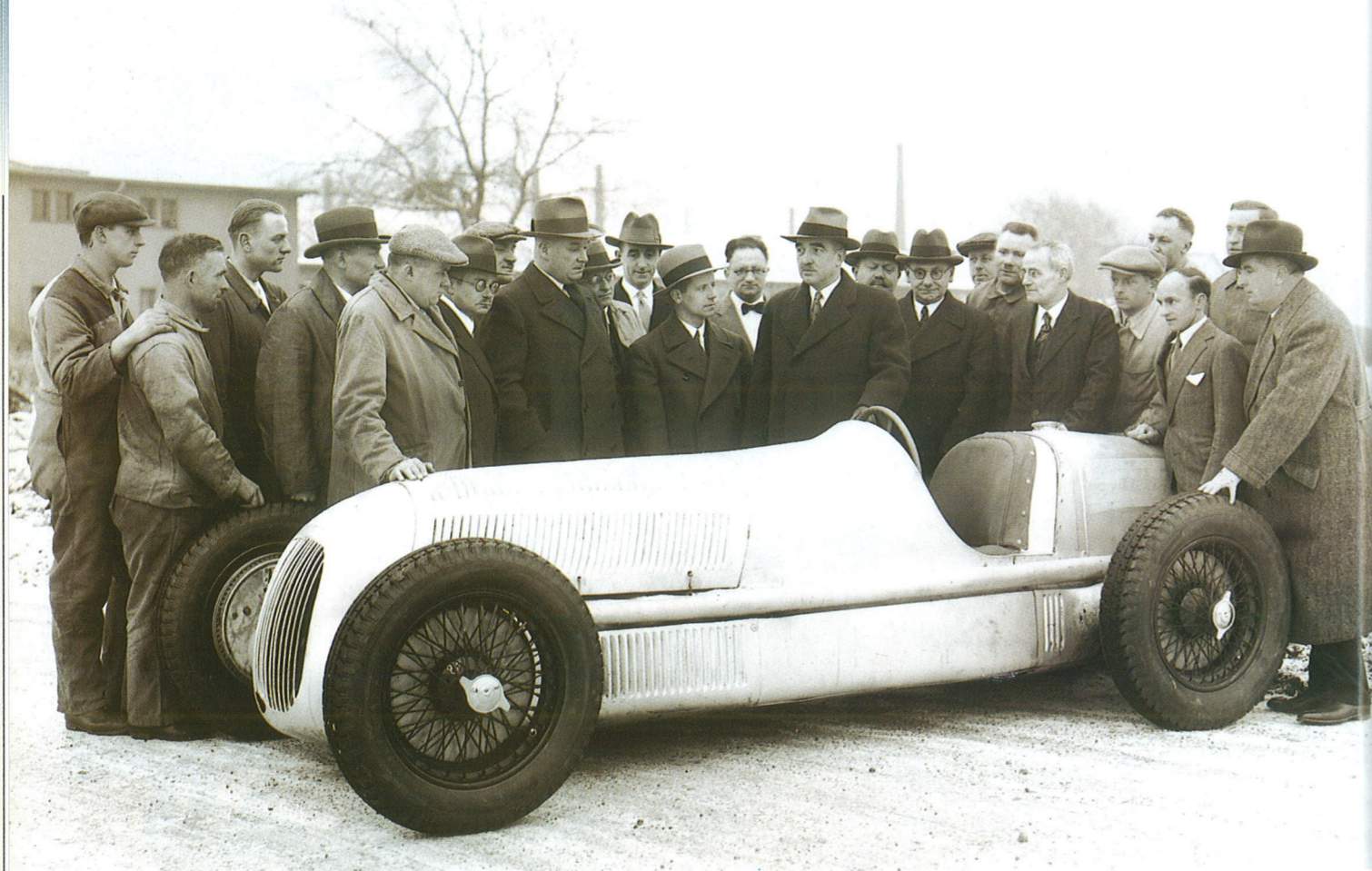
1939: W154 - A further refinement, with more protection for the driver.



1952: 300SL - The first Silver Arrow sports car.

## Sixty five years of the Silver Arrows





## Only the spoked wheels were left in white as the car weighed in at exactly 750kg

◀ completely enclosed the fuel tank and a headrest which was tapered towards the back. Only shortly before the completion of the car had the racing timetable been decided. Politics had its say in it as well. On the occasion of a meeting in Berlin on April 19, 1934, Mercedes' motorsport director Alfred Neubauer and an Auto-Union representative were joined by German government chief group leader Major Adolf Hühnlein, who was the boss of the Nationalsozialistisches Kraftfahr-Korps (NSKK), which was responsible for all motorsport activities of the Reich at home and abroad.

The first event on the agenda was the International Avus Race at Berlin on May 27. Mercedes registered three cars. On the Thursday before the race, Rudolf Caracciola sneaked in at the crack of dawn. He was still feeling the pain in his right leg, which had been severely injured in a crash at the Monaco Grand Prix the year before. However, that did not stop him putting in a few record laps, quicker than both von Brauchitsch

and Fagioli. But on Sunday morning, Daimler-Benz took a decision that was to deprive Berlin of both Caracciola's and the new car's appearance: The cars would not take part in the race. In his autobiography 'Männer, Frauen und Motoren' ['Men, Women and Engines'] Neubauer claimed a fuel supply problem.

While the race on the Avus had been a non-regulation event, the upcoming race in the Eifel would be contested according to the new rulebook for grand prix cars. It was no easy task for engineer Max Wagner to trim the weight of the W25 to the figure stipulated by the 750kg rules. He slimmed down each of the steering gear's 14 components until he had found three pounds in weight. In the end the chassis and even parts of the suspension looked as if a missile had torn innumerable holes in them. When the W25 was rolled onto the scales it was still three kilograms overweight. Trimming it down even more would be irresponsible. The only way out was to do away with the white finish which had been the traditional racing colour up to now. ▶



### Ten questions to Manfred von Brauchitsch

#### 1. What does the name Silver Arrow mean to you?

I associate all my successes as a Mercedes-Benz factory driver with the Silver Arrows.

#### 2. What was the pinnacle of your career?

My greatest success was the victory at the 1937 Monaco GP where I beat Caracciola after a 100 lap-fight and where I set up a new lap record.

#### 3. Where do you see the main differences between grand prix motorsport then and Formula One now?

You cannot compare them at all. We were pioneers with regard to the development of the automobile in general. Everything was different. A few catchwords will show you what I mean: manual gearbox versus semi-automatic gearbox, balaclava versus full-face helmet, tree-lined roads versus gravel beds, blistered hands and burnt feet, no safety harness, loss of weight of up to four kilograms, no fire-proof underwear or overalls, narrow tyres and very limited grip.

#### 4. Who was the most important motorsport personality for you personally?

Rudolf Caracciola and chief designer Rudolf Uhlenhaut who was my friend. He was also a very good racer.

#### 5. How did you become a racing driver?

In 1929 I had the opportunity to race a Mercedes-Benz S courtesy of some affluent relatives. Straight away I won the Gaisberg race near Salzburg in Austria.

#### 6. What capabilities does a racing driver need if he wants to be successful?

He has to have good reactions, physical and mental fitness and a lot of discipline. On top of that he needs to be tough, courageous and willing to take risks.

#### 7. What did you used to do to keep yourself fit and how important was fitness in your days?

During the season I refrained from drinking alcohol, smoking cigarettes and leading a dissipated life. As for fitness, I did regular exercises with my trainer, who used to be a boxer.

#### 8. How important was the team to you and how much did it contribute to your success?

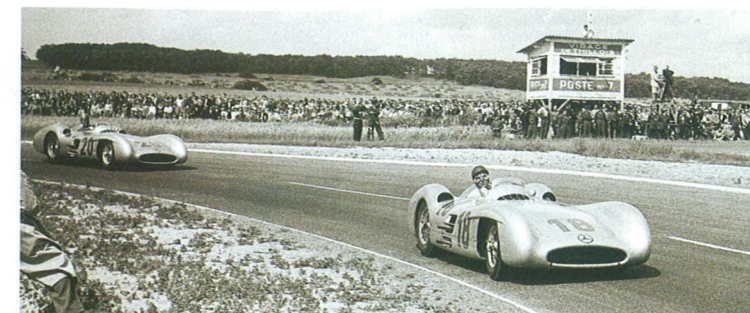
It was utterly important that you could rely on your mechanics and this was ensured at all times. For this reason, I think, there were less fatal accidents then than in the later years.

#### 9. Which was your favourite Mercedes-Benz car?

The 1924/24/100/140 PS saloon and the 1929 four-seater S model.

#### 10. What would you do differently if you could do it again?

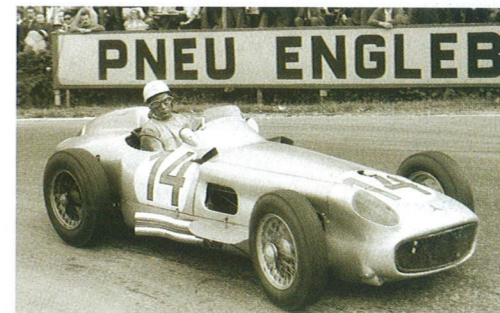
Nothing, I would do everything the same.



1954: W196 Streamliner- The car that brought Mercedes it's first World title.



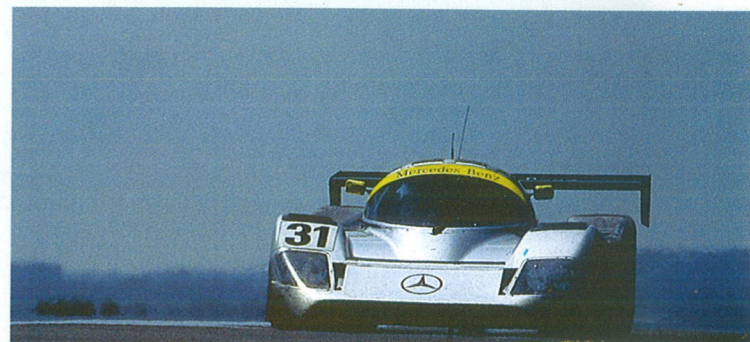
1955: 300SLR - One of the most advanced cars of the era, it won the Mille Miglia.



1955: W196 - In open wheel form the car retained it's World Championship.



1989: C9 - Scored a famous one-two at Le Mans.



1990: C11 - Won the World Sportscar Championship.





RETRO

### Manfred von Brauchitsch

The former Mercedes star is the last of a generation of racing drivers of the thirties. Born in Hamburg in 1905 as a descendant of a Prussian dynasty of army officers, von Brauchitsch joined the 100,000-man army straight after finishing grammar school. When in 1928 he had a severe motorbike accident sergeant von Brauchitsch was forced to leave the army – and also family tradition.

On 22 May 1932 he scored his first victory on the Avus street track at Berlin in a Mercedes-Benz SSKL, which aerodynamicist Reinhard Freiherr von Fachsenfeld had equipped with a clumsy-looking streamlined chassis. It was the first time that the German aristocrat hit the limelight and the headlines.

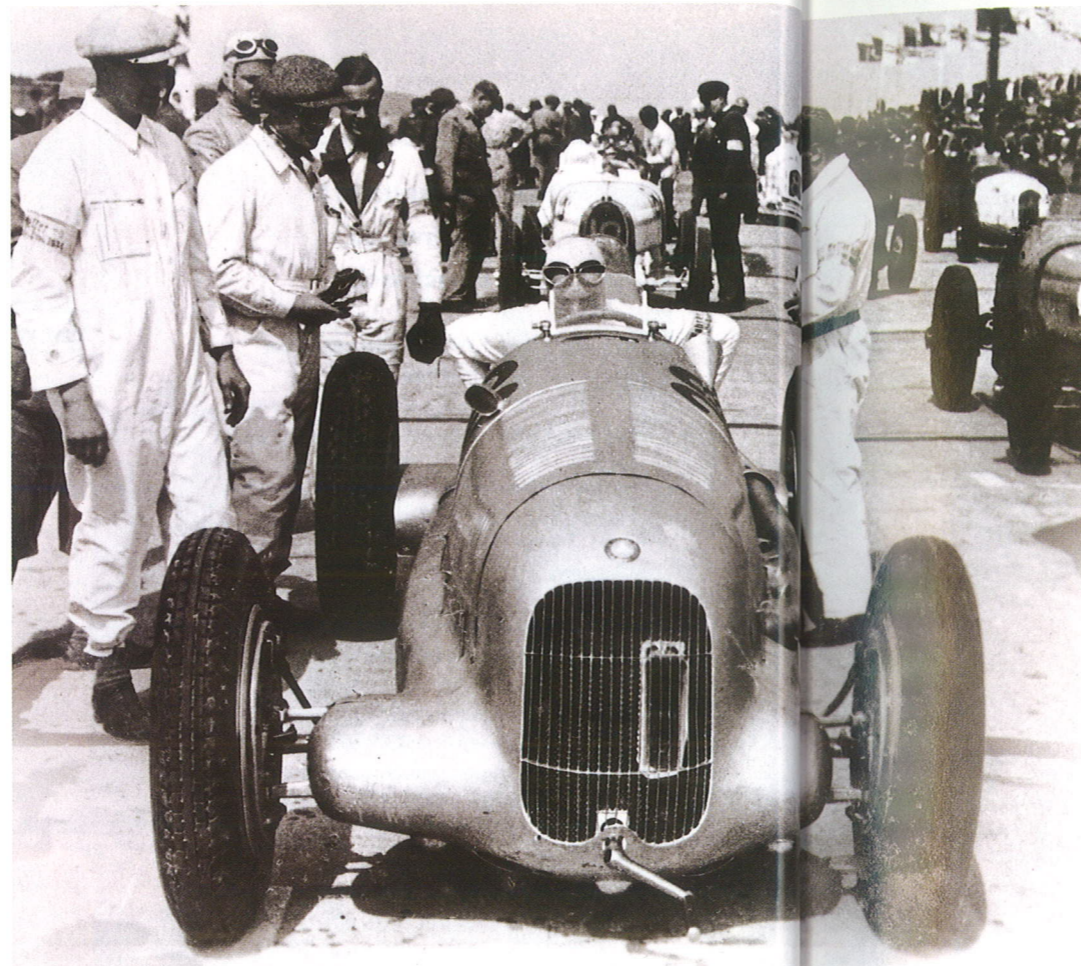
Between 1933 and 1939 he drove in the name of the three-pointed star but in those days politics and sports were tightly interwoven, a fact that even von Brauchitsch could not ignore.

Highlights of von Brauchitsch's career during the first part of his racing career were his victories at the Eifel race in 1934, at the international Avus race and the Monaco Grand Prix in 1937 as well as at the 1938 French GP at Reims.

After the war he ended an intermezzo in Argentina and returned to West Germany. In the autumn of 1948 he was elected Sports President of the Automobilclub von Deutschland which had just been established and was given the first racing driver's licence by the ONS, Germany's supreme motorsport authority. In 1954, however, von Brauchitsch moved to East Germany, where he became President of the German General Motorsport Association three years later. As from 1960 he was President of the East German Society for the Fostering of the Olympic Idea – a post which he held for 30 years.

In this position he enjoyed certain privileges such as being allowed to travel to a meeting of the old champions on the occasion of the 1974 French Grand Prix at Dijon and to several of the Monaco Grands Prix.

Today Manfred von Brauchitsch lives in a small town called Gräfenwarth in Thuringia and feels no urge to go anywhere near a grand prix. "I decided to live here a long time ago and there was no reason whatsoever after the reunion to go anywhere else," he says.

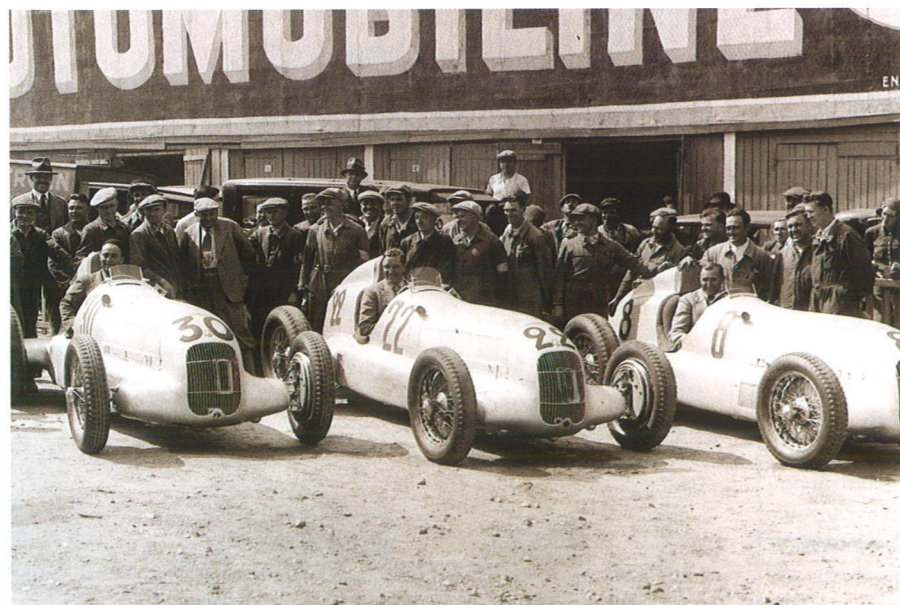


Left: Manfred von Brauchitsch lowers himself into the Mercedes-Benz W25 at the start of the 1934 Eifel race.

**"Self-assured confidence, iron willpower and extreme commitment were the winners in the relentless chase for time and space."**

KOLNER STADTANZEIGER

Left: The drivers and mechanics of the Mercedes-Benz team line up for an official photograph with their new silver cars.



Over night, at a small garage near the circuit, the team scraped off the paint and the filler used to level off the dents in the beaten aluminium chassis. Only the spoked wheels were left in white. Eventually the car weighed exactly 750 kilograms, the rulebook limit.

The truth behind the decision to remove the paint remains vague. Hermann Lang, who was Luigi Fagioli's engineer at the time, always talked about this with extreme care. A lot of people had been standing around the car and someone had suddenly come up with the idea. Alfred Neubauer, however, an ardent and cunning self-promoter, would have liked to claim it as his. Manfred von Brauchitsch supports Neubauer's claim. Both Neubauer and race engineer Willy Zimmer had said to him: "The paint has to come off." It was christened by a Berlin newspaper which boldly declared: "Brauchitsch as fast as a silver arrow."

Practice in the Eifel duly started off promisingly. It boiled down to a competition between the Mercedes cars and their rear-engined Auto-Union opponents, which had been built by Ferdinand Porsche. On June 2, a member of the editorial staff of 'Braunschweiger Allgemeiner Anzeiger' [a Brunswick newspaper] reported full of patriotism from the Nürburgring and respectfully raised Auto-Union driver Hans Stuck to aristocratic status: "Manfred von Brauchitsch was able to score fantastic times on four consecutive laps on the wet circuit. But also Hans von Stuck, the leader of the Porsche crew, managed to put in a few laps at about the same speed. So we'd better prepare ourselves for a ▶



1997 MP4-11 - A return to Silver brought victory on its debut in Australia.



1997: CLKGT - Built in record time and won FIA GT Series.



1998: MP4-12 - F1 Drivers' and Constructors' World Championship winner.



1998: CLK GTR LM - Won every round to capture the World Championship.



1999: MP4-13 - F1 World Championship leader and race winner.



**BOSS**  
HUGO BOSS

### Ten questions to Mika Hakkinen

**1. What does the name Silver Arrow mean to you?**

On the one hand the past glory of Mercedes Motorsport involvement in the 1930s and 1950s with many titles, which are to me associated to names like Manfred von Brauchitsch, Rudolf Carraciola, Juan-Manuel Fangio, whom I had the privilege to know and Stirling Moss. On the other hand Silver Arrows means today's success with the revival of the myth, of which I am proud to be a part.

**2. What was the pinnacle of your career?**

It's difficult to give only one example, but the highlight up to now was winning the World Championship title in 1998.

**3. Where do you see the main differences between grand prix motorsport in the thirties and Formula One now?**

Most significantly, safety has improved drastically in terms of cars and circuits. Also, there has been a continuous improvement of technology which makes racing today much more complex. The drivers are also more part of the marketing and media activities of sponsors.

**4. Who was the most important motorsport personality for you personally?**

Many people have positively influenced my career and it's difficult to only mention a few. If I had to I'd like to name Ron Dennis, Keke Rosberg, Adrian Newey and Norbert Haug.

**5. How did you become a racing driver?**

Since I have been a very young kid, everything I did, I did in a fast way and I was fascinated by speed early on. To focus my energy my parents helped me to start a karting career which for me was the logical first step for my following career in different racing formulae.

**6. What capabilities does a racing driver need to be successful?**

He has to be a hard worker, able to sacrifice a huge part of his private life, to dedicate all his time and energy to his racing, to communicate and motivate the team and understand his role on the marketing and media side.

**7. What do you do to keep fit and how important is fitness?**

The first is the specific training of certain muscles and parts of the body which are essential for the driving as today's F1 cars are very physically demanding. Secondly, you have to maintain a high level of a general physical condition with activities like jogging, biking, swimming, etc.

**8. How important was the team to you and how much did it contribute to your success?**

I understand my personal success to be part of the team's success. Only with the right team around you can achieve the optimum performance. F1 is considered to be an individual sport but the team work with the engine, chassis engineers and all the mechanics is key for any success.

**9. Which was your favourite Mercedes-Benz car?**

It is difficult to point out a single one but I'd like to mention the E55 which is so much fun, it's a real sporting limousine.

**10. If you could do it all again, would you do anything different?**

My approach would be exactly the same, which has always been based on hard work, motivation and patience.

fierce duel." Stuff like this, the newspaper rejoiced, was "fit to attract the world's attention to German courage and German technical spirit."

And even Daimler-Benz used much of the same language when it informed, "all representations and dealerships at home and abroad" in mailing no. 38, dated June 4, 1934, about its success: "The first appearance of our new racing car resulted in a victory which surpassed all our expectations. Under the enthusiastic cheering of 250,000 spectators Manfred von Brauchitsch steered the W25 in record time across the finish-line, one and a half minutes ahead of the second placed driver [Hans Stuck] thus demonstrating in the fastest race the Nürburgring has ever seen the dominance of our racing car, which has been built according to the international formula

**"The first appearance of our new car resulted in a victory which surpassed expectations."**

DAIMLER-BENZ MAILING

rules. Already the start gave a picture which had never been seen before in this form. When the flag fell Manfred von Brauchitsch shot off, closely followed by his team-mate Fagioli who had courageously worked his way up from the third row at the start. Lap after lap the two silver Mercedes-Benz led the field while von Brauchitsch consistently increased the gap between himself and the driver in third place. On lap eight, von Brauchitsch completed a quick tyre change and continued his triumphal performance. While at the pits he was overtaken by the driver in third position but regained the lead on the lap following the tyre change. Unfortunately, Fagioli had to end a promising race, which he would certainly have finished in second place, on lap 13 due to a stuck accelerator pedal."

The race was over 15 laps, exactly 213.8 miles. Manfred von Brauchitsch finished it in two hours, 47 minutes and 36 seconds at a speed 76.11 miles per hour. This marked a new record on the Eifel circuit which, two weeks later, was seven years old, one year younger than Daimler-Benz AG. An English reporter was deeply impressed by the integral sensation called the Mercedes-Benz W25: Its streamlined chassis, the terrific sound of its exhaust and the high-pitched humming of its compressor had been a real surprise to him. The evening edition of the 'Kölner Stadtanzeiger' [a Cologne newspaper] meanwhile pointed out more patriotic aspects: "Our young cars took up and passed the acid test against carefully developed and mature foreign machinery." And it closed with even more pithy wording: "Self-assured confidence, iron willpower and extreme commitment were the winners in the relentless chase for time and space."

But the trajectory of the first Silver Arrow had only just begun. It won four of the eight events that it contested to the new formula in 1934. On three out of those four occasions Fagioli was at the wheel: at the Coppa Acerbo in Pescara, as well as the Italian and Spanish Grands Prix. But the foundations of the Silver Arrow myth were really laid by Manfred von Brauchitsch at the Nürburgring on June 3, 1934.



RETRO



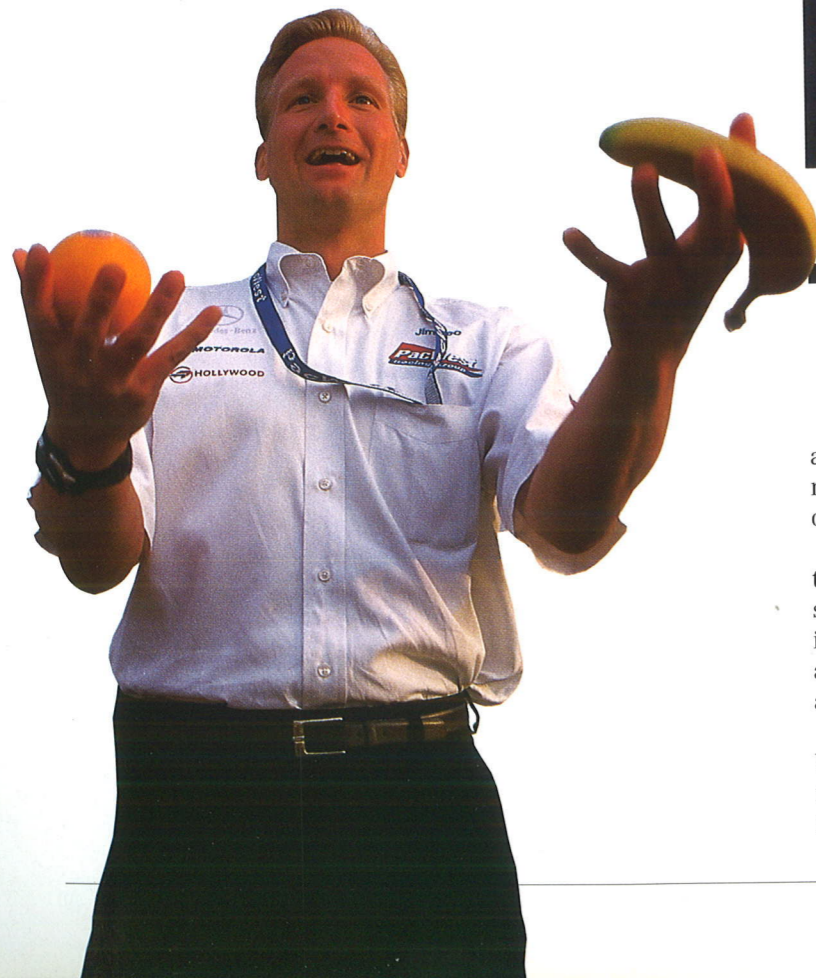


CART

To be competitive in motorsport takes more than just the right car, engine and team. More even than being super fit. Drivers now have to make sure that their bodies are in tune with their needs, and that means having the right diet.

WORDS JONATHAN NOBLE PICTURES MIKE LEVITT

# EAT TO WIN



**T**he pulse-rate quickens to nearly 200 beats per minute, body temperature rises dramatically and there is massive fluid loss through sweating. The eyes become super focused, the brain's resources are called upon to the maximum and stress levels are at an all time high thanks to the knowledge that one mistake can lead to failure. There is also no prospect of rest for more than two hours.

This is the reality of motor racing, well away from the glitz and glamour that attracts millions of spectators to tune in to the efforts of Mercedes-Benz in ChampCar Racing. It is a world where the drivers are not just pedal pushers, but some of the fittest athletes in the world.

This explains why driver nutrition and fitness has become one of the most modern sciences in motor racing. No longer can drivers ignore exercise and not worry about what they eat; they now have to be

just as disciplined off the track as they are on it.

For the Mercedes-powered PacWest ChampCar team, this modern science is taken so seriously that they have taken the initiative and become the first outfit to employ a full-time nutritionist to oversee their drivers - and other team members too.

"Driving a race car, unlike most other sports, requires mental toughness as well as the ability to handle heart rates up to 150-200 beats per minute along with dehydration and high heat levels," explains PacWest's team trainer Jim Leo.

"If a basketball player gets tired and makes a mistake, he can sit down. If a race car driver gets tired and makes a mistake, he could hit the wall and be out of the race."

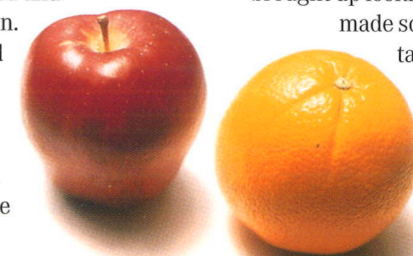
Leo, who has received a bachelor and master's degree in exercise physiology, first became

involved in motor racing when he linked up with the Penske team in 1994. Back then, the value of nutrition science in motor racing was relatively new.

"Penske were the first ChampCar team to be involved in this sort of thing," he explains. "My background is exercise physiology, cardiac analysis and corporate fitness - and I've learned a lot since joining up with Penske.

"The big thing that has helped my cause was the influx of European drivers over here. They have trained since the start of their careers and been brought up looking after their diets. I think that has made some of the Americans sit up and take notice.

"There are certainly no reasons why drivers should pay any less attention to their diets in ChampCars than they should in Grand Prix racing. ▶







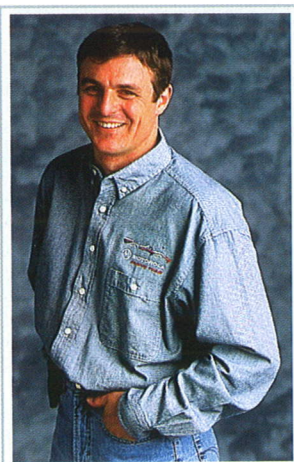
CART

**"It's not that physically difficult to drive ovals with the type of pit-stops we have, you have to be more mentally tuned-in all the time to capitalise on race situations. And, to do that, you have to eat the right food."**

JIM LEO



Above: All of the food is prepared in the PacWest kitchen by the team's



Mark Blundell

**DO YOU HAVE A VERY SET DIET WHICH YOU STICK TO?**

I have a pretty disciplined food intake for six days out of seven of a week, because one day we have what we call our "Cheat day" where we go absolutely nutty and eat what we want. It's based wholly on a proportional basis, carbo-hydrates versus proteins and when to take them through the day, which of course changes through a race weekend, because your values are of a higher need. It's based around five to six small meals a day which is a little bit extreme sometimes like when I'm travelling because I have to carry some food. It's a bit of a funny deal when I'm on an aeroplane and I have to get out my tin of tuna fish, apple sauce and cereal... Everyone thinks you're from out of Mars. But if you want to stick to it that's what you need to do. It's not a diet as such, more of a way of life. It's primarily done for energy values sustained over the course of a day, just by having the right intake of foods. It's like a car, if you put bad fuel in it, it doesn't operate properly. If

you put crap food inside yourself, you're not going to get the best out of your body. That, with a training programme has definitely been an enhancement for me. Even after my accident, and coming back pretty quickly, before that I was probably in better shape than I have been for the last four or five years.

**ARE THERE THINGS THAT ARE PART OF YOUR DIET THAT YOU REALLY DON'T LIKE, WHERE YOU HAVE TO HOLD YOUR NOSE AND GET IT DOWN?**

I'm not great at tolerating the number of supplement pills I take per day. That winds me up out of sight. And the food in general... Well after eating tuna, chicken and turkey for so long for five or six days a week, it does get a little bit mundane, so you're always trying to get some differences just to pep it up a little bit. Even that's becoming a hard task, although I am becoming a little creative on the food side as well as the car side!

**WHAT THINGS DO YOU MISS MOST?**

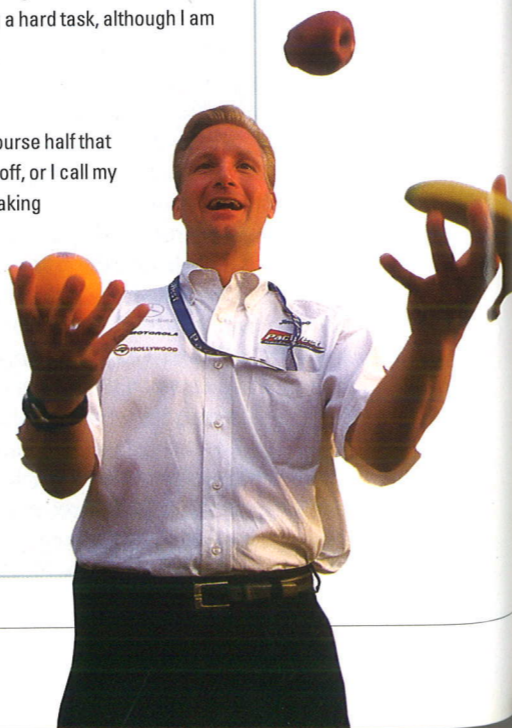
Yorkshire pudding, roast beef, sausage and mash, fish and chips, everything like that. And of course half that stuff you can't get out in the United States anyway. Sunday is race day, but if I have a weekend off, or I call my cheat day to be on that Sunday... I'm probably up at six and don't go to bed until midnight just making the most of it.

**AND IN THE OFF-SEASON YOU LET IT SLIP A BIT?**

Yeah in the off season and especially those two or three weeks up to Christmas... Just two or three weeks relaxing and letting myself go slightly. It's a tough long season, so you need that side of it just to enjoy yourself a little bit before you get back into all the disciplines of a race programme and the focus attached to that. Christmas is really where you let go.

**AND DO YOU FEEL THE DIFFERENCE?**

Oh yes! You start to feel more lethargic, you're not as alert... Generally you feel like a fat lump, which isn't what you should feel like at all!



CART

◀ "Although there are differences between Formula One and ChampCars, like the fact that they race only on more traditional race tracks, while we have the ovals, super speedways and sometimes much longer races, you need to be super-fit in both.

"A drivers' requirement in Formula One is for explosive training, and while it is not that physically difficult to drive ovals with the type of pit-stops we have, you have to be more mentally tuned-in all the time to capitalise on any race situations. And, to do that, you have to eat the right food."

Leo's advice on diet is surprisingly very simple. The key word is moderation.

"I am not a man who believes in fad diets. I think the drivers should eat a moderately high carbohydrate diet and then stick to it. I preach

consistency because the team's chef can cook anything - so there is no reason to go without good food.

"From the drivers' viewpoint, you don't want to introduce anything during a race weekend that will upset their systems. That means no spices and not too much salt for example. They need to stick to that diet, and maybe when it gets to race time have a little bit more carbohydrate.

"We also want them to stay off fried food and anything too fatty. It is a poor source of energy. It is also important the drivers drink enough liquids because of the stresses and high temperatures that the drivers have to operate in."

During a race weekend, Leo wants the drivers to stick to fruit juices, high carbohydrate food like pasta with vegetables and a large quantity of liquid to prevent dehydration. In particular, Leo also advocates drinking carbohydrate-loaded energy drinks and plenty of Oxywater (oxygenated water) because it gives increased energy, improved physical stamina and substantial reduction in recovery time after physical exertion.

But with a British and a Brazilian driver on board, how does Leo manage to find a diet that sticks to his requirements while also suiting their differing tastes?

Some football players, for example, have been very reluctant to follow the kinds of healthy diets that are advocated by nutritionists. A canteen worker at London-based club Chelsea revealed ▶

**"From the drivers' viewpoint, you don't want to introduce anything during a race weekend that will upset their systems. That means no spices for example."**

JIM LEO

Below: Mauricio Gugelmin takes some carbohydrate solution during a break in practice.



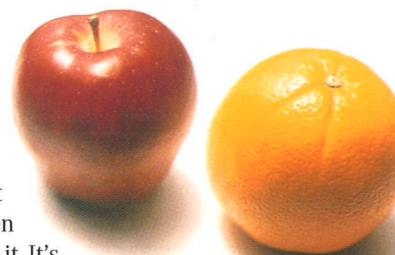




CART

recently: "The lads are very anti-health foods. We disguise them. We cook the pulses and sweet potatoes on their own, then pulverise them. They love it. It's like baby food."

Leo admits that things were not so difficult with his drivers. "There was a lot of trial and error when I first joined PacWest, as we tried to develop a menu for both drivers.



with high fibre foods and my aim is to give a driver what he wants to eat.

"Mauricio also eats a lot of food native to Brazil, like fruits and grain. That is good in itself, but things do become more difficult when the drivers are away from home. Getting the right meal in a hotel is actually quite difficult.

"My advice to the drivers is just to do the best they can. I am not there to watch them eat the right foods 24 hours a day, seven days a week and I think

## But the importance of diets is not just limited to the drivers. Just as the star men need to be at the top of the game, so too do the men who work on the cars.

"At the end of the previous season I asked the drivers to give me some idea of their preferences. I told them to give me a list of food they deplored and a list of foods they really liked.

"Mauricio Gugelmin didn't like pepper and spices - because he prefers very bland food. Mark Blundell has a sensitive stomach and that means we try and put a little more protein in his diet. He has trouble

they understand how important it is to stick to their diets."

But the importance of diets is not just limited to the drivers. Motor racing is very much a team effort and, just as the star men need to be at the top of the game, so too do the men who work on the cars and complete the crucial pit-stops.

"Getting the right diet for the mechanics is quite

Below: A constant rehydration is necessary throughout the afternoon of the race to combat fatigue



Above: PacWest nutritionist Jim Leo keeps his drivers to a very strict diet of carbohydrates on raceday via a simple pasta dish with little other than olive oil and tomatoes and definitely no added spices

### JIM LEO'S IDEAL MENU FOR RACEDAY



#### BREAKFAST

- 1 cup orange juice
- 1 cup oatmeal with water
- 1 piece wheat toast with one tablespoon low-fat peanut butter

#### SNACK

- Sports Drink (12 oz)

#### LUNCH

- (ABOUT THREE HOURS BEFORE RACE)
- 2 cups plain pasta with tomatoes, mushrooms and oil
- 1 cup fruit

#### THROUGH RACE PERIOD

- Sip 6-8% carbohydrate solution up to the start and during pit stops

difficult because of the very long hours they work," adds Leo. "They often eat breakfast at 6am before they get to the track, then they work flat out during the day, wolfing down some food at lunchtime, and then sometimes they won't eat again until 8pm.

"That is clearly not ideal because it affects their performance. What I've done is staggered their eating times, to ensure they have a proper breakfast, lunch and dinner, as well as healthy snacks when they need them.

"They've taken this all on board quite well and some will regularly eat apples and drink fruit juice. But to resist them from temptation, I've made sure that all kinds of junk food are kept away from the mechanics - although that's not to say I am banning them from eating them.

"If, for example, one of their mums brings some cookies to the race track, I am not going to stop them from eating them. What I am saying is that they should only eat food like that in moderation."

It is a lesson that everyone at PacWest Racing, from the drivers to the mechanics, is willing to listen to.





**Stunning performance**

**West**



**West McLaren Mercedes**  
FORMULA ONE WORLD CHAMPIONS 1998



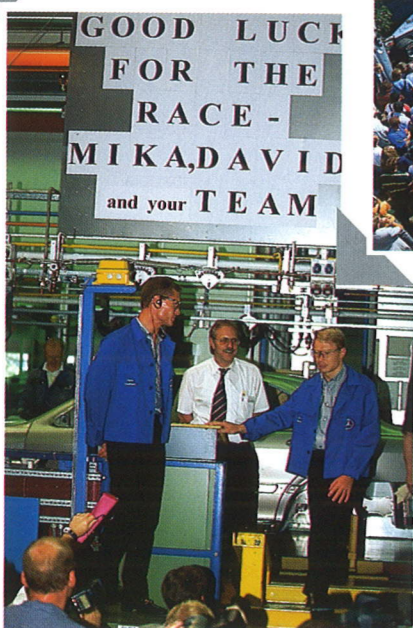


POSTCARD



Left: The Mercedes SLR and the 300SLR sports racer of the 1950s took pride of place on the startline at the Austrian Grand Prix in front of the Mercedes safety car.

WITHELM



Left: In the week before the German Grand Prix Mika Hakkinen and David Coulthard paid a visit to the Mercedes S Class production line at Sindelfingen. They stayed on (above) to answer questions from over 5000 workers, who gave up their lunch break to see the West McLaren-Mercedes drivers.

WITHELM

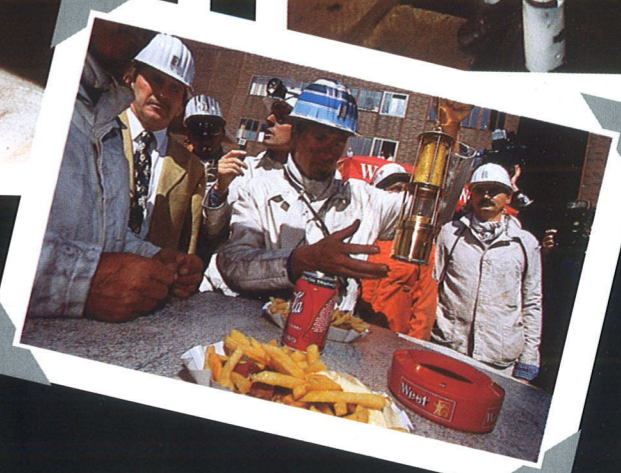


Left: ChampCar racer Helio Castro Neves has some fun in the paddock at Mid-Ohio with a scale model of one of the fleet of trucks belonging to his Hogan Racing team boss Carl Hogan.

SALPH HARDWICK



Mika Hakkinen paid a visit to the Ewald-Hugo coal mine in Germany's Ruhr during August, and was presented with a miner's hat painted in the same colours as his crash helmet. The World Champion watched the cutting process at the coal face and likened the experience to being in a sauna.

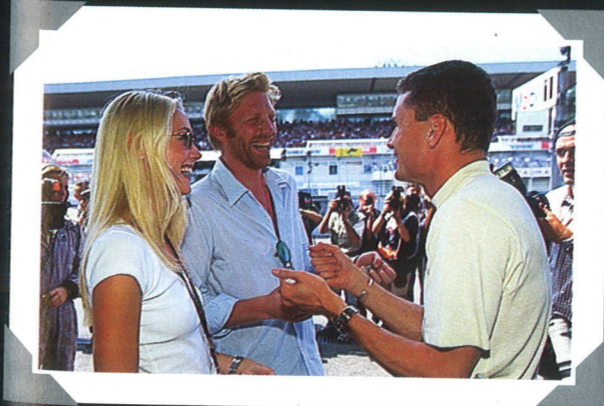


KUNNE/HOCHZWEI



POSTCARD

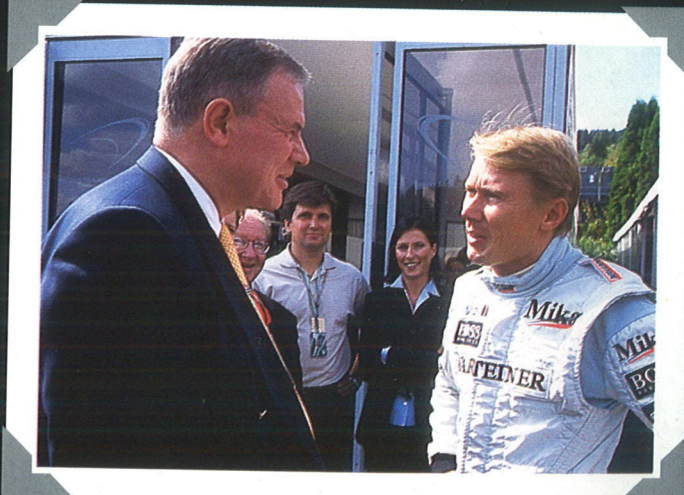
# Every picture tells a story



Above: David Coulthard and his girlfriend Heidi Wichlinski entertained tennis legend Boris Becker during his popular visitor to the West McLaren Mercedes team in Hockenheim.

WITHELM

Finnish Prime Minister Paavo Lipponen honoured Mika Hakkinen with a good luck visit at Spa-Francorchamps.



SITTON/IMAGES





WORDS EGON ZEIMERS. PICTURES LAT/WOLFGANG WILHELM

# A Nick faster

Nick Heidfeld, newly-crowned European Formula 3000 Champion, will be in Formula One next year. His success is the result of a young drivers support programme which Mercedes-Benz and McLaren established in 1997. Stars & Cars describes the Mercedes Junior's rapid rise from the kart to Formula One.

Nick, so the reporter said, was right. It had been the carburettor that had forced him into retirement. The camera is on his father, who is busy replacing the broken item and getting the kart ready for the next run. The following shot shows a caring mother holding up young Nick and pressing him lovingly against her. A smile has returned to the young boy's face and he confesses to the interviewer that he is always a little nervous before the start. Confronted with the inevitable question about what he would like to do when he grows up, the tiny tot with the blond hair cheekily replies: "Formula One driver."

A few weeks ago Nick Heidfeld sat down to watch the video again. It is a half-hour recording of the German television channel WDR from 1989 about the hustle and bustle in the German karting scene, or rather within North-Rhine Westphalia's Junior Cup, to be more precise, and Nick, just 12-years old and considerably smaller than the rest of the pack, features rather strongly in it. Okay, so he prophesied 10 years ago that he would be a Formula One driver, "but," Heidfeld clarifies, "it was only a dream then, like other kids wanting to become a railway engine driver or a policeman."

The year 2000 marks Nick Heidfeld's debut in ▶





F3000



Left: Heidfeld was an immediate hit in Formula 3000 and has become the most successful driver in the category's history. Here he leads the field away at Barcelona.

Formula One. What preceded his leap into motorsport's premier league was a textbook career that saw him succeed in every single junior formula. This year the young man from Mönchengladbach won the European Formula 3000 Championship in style and after only eight of the 10 rounds.

At the end of August, on the eve of the Belgian Grand Prix at Spa-Francorchamps, 22-year old Heidfeld signed a contract with Alain Prost to race for the four-time Formula One World Champion's Prost Grand Prix team.

However, he doesn't want those childhood words to be seen as a definition of the final destination of a well-planned motorsport career. To him that future job description from 1989 clearly remains a naive, childlike dream.

Now, 10 years later, he is in a position to analyse how he has achieved his goal. "You can only talk about Formula One in a serious way," Heidfeld says, "if you understand what is necessary to get there."

When at the beginning of the 1997 season Mercedes-Benz and McLaren initiated their junior drivers

programme with Nick Heidfeld as the supreme talent of their training scheme. The young German was delighted about "the giant chance" that he had been given.

Finally, he thought, he could concentrate on doing what he always wanted to do: be a racing driver. After all, McLaren boss Ron Dennis had promised: "We remove the obstacles for our young drivers." But Heidfeld quickly realised that his promoters expected a whole lot more than putting his foot down on the track and outbraking his opponents. "We made clear to him that talent and a fighting spirit were not enough to become a successful Formula One driver," explains Mercedes Motorsport chief Norbert Haug. What Mercedes-Benz and McLaren expected from their young driver was an extremely professional approach inside as well as outside the cockpit. "At the beginning," Haug remembers, "Nick wasn't so sure whether he could meet our expectations."

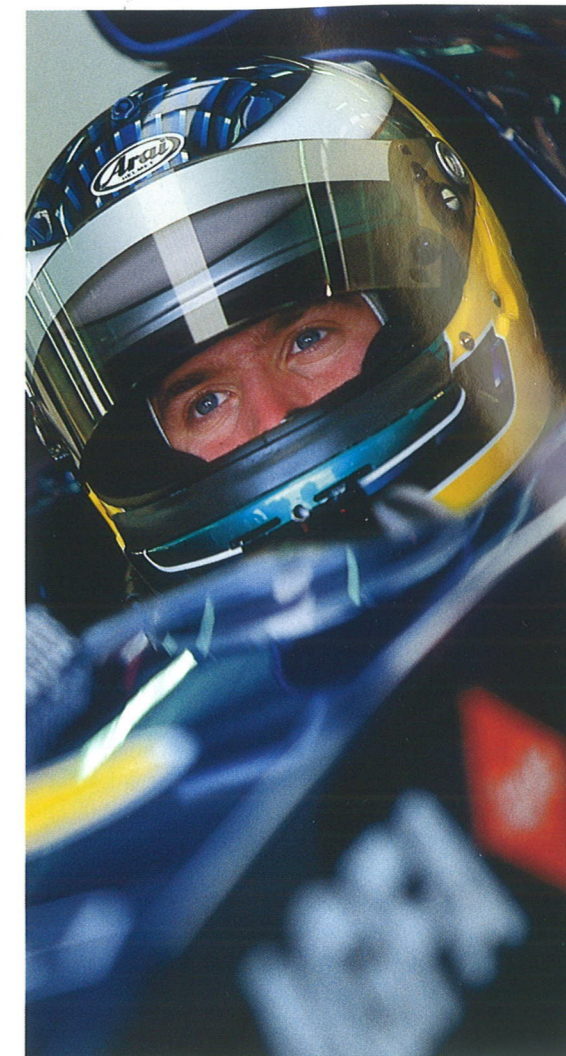
Heidfeld was nine years old when he started karting. Initially, he did it "just for fun". It was in 1986 - on the same track in Kerpen-Manheim near Cologne where

Michael and Ralf Schumacher also started out - that he participated in a championship organised by the local Graf Berge von Trips Club.

It soon turned out that the smallest driver in the paddock was also one of the fastest. Heidfeld's driving style and lap times were noticed by a man who stood at the side of the track and who had originally come to witness the karting performances of his sons. It was Domingos Piedade, Managing Director of AMG, Mercedes' tuning partner.

Piedade had always had the ability of spotting great motor racing talents. In the seventies and eighties he had pointed the careers of Emerson Fittipaldi, Michele Alboreto and Ayrton Senna in the right direction. By the side of the track in Kerpen-Manheim Piedade soon arrived at the conclusion: "The small one will eventually be a big one."

Within the Heidfeld family the struggle regarding the motor racing ambitions of Nick and his younger brother Sven - who has since also taken up the sport - was clearly defined: Father Wolfgang, a committed



**"We made clear to him that talent and a fighting spirit were not enough to become a successful Formula One driver."**

**NORBERT HAUG**





F3000



◀ motorsport enthusiast, pushed the boys on whereas Mother Angelika, apprehensive and worried, tried to apply the brakes, albeit with little success. She eventually gave in to her husband's enthusiasm.

During his successful karting days Nick had reached an irrevocable decision: He wanted to become a racing driver. His father supported him as much as he could. With a little help of some sponsors Nick managed to get into Formula Ford. In 1994, at the age of 17, he won eight out of nine races in the 1600cc class, which brought him the championship title in his debut year. The following season he reached for the title in Formula Ford 1800 and decided not to take the final step at grammar school so he could concentrate on his career.

**Above: Formula 3 victory at Monaco was Heidfeld's first major international win. Below: Nick always impressed the McLaren test team.**



When Wolfgang Heidfeld's financial resources reached their limit he remembered the encounter he had once had at Kerpen-Manheim with Domingos Piedade. He phoned the man from Portugal, who gave him lots of advice – and the telephone number of Werner Heinz. An experienced driver manager who is known in motorsport for his professionalism as well as his integrity, Heinz gave Nick a contract and paved his way to the next step up the ladder, Formula 3.

When Mercedes-Benz decided at the end of 1996 to revive its junior drivers programme, which had once produced Michael Schumacher, Heinz-Harald Frentzen and Karl Wendlinger, Piedade mentioned the name of Heidfeld to his Stuttgart partners. Piedade's suggestion confirmed to Norbert Haug what he had already noticed himself, having seen Heidfeld's performance in the 1996 German Formula 3 Championship, which was supporting the ITC.

Mercedes-Benz invited the youngster to do a test run in an AMG Mercedes C Class at Hockenheim. "It was a delicate situation," Heidfeld remembers. "I had never driven a touring car before, ABS and power-assisted steering were completely new to me, and to cap it all it was pouring down with rain." This made the outcome all the more surprising: Neither before nor after the test, so the AMG Mercedes team confirms, has there been a quicker C Class time set on the small circuit of the Hockenheim circuit in the rain.

So with his test passed with flying colours Nick

Heidfeld was appointed a McLaren-Mercedes Junior, and in 1997 he also became a test driver for McLaren-Mercedes. That year he did more than 4300 miles in the F1 Silver Arrow, laying the foundations for the tasks ahead. At the same time he contested his second season in the German Formula 3 Championship driving a Dallara Opel which was sprayed silver as a visual sign of his partnership with Mercedes-Benz. Five wins and five second places made him Formula 3 champion.

In 1998 Heidfeld entered Formula 3000 with the newly-founded junior team of McLaren and Mercedes-Benz. Right from the start he was a contender for the title. He only missed it – at the final race at the Nürburgring – because the team made a mistake. They

**"Nick is very strong, both mentally and as a driver. He has a well-developed sense of what is happening with the car."**

DAVID BROWN

filled the tank with the wrong fuel, the fuel from the previous race. Heidfeld had his pole-position qualifying time cancelled and instead of starting from the first row he had to go right to the back of the 32-car grid.

He managed to fight his way up to ninth position but there were no points for him and only second place in the championship. It was a huge disappointment, but it spurred him on to want the title in 1999 even more. Four wins, one second and one third place saw him take the honours two races before the end of the season.

"Formula 3000 is the most fiercely contested championship in the world this year," Heidfeld says. "It is where only the top drivers from the respective national Formula 3 series and other junior categories meet and they all have the same goal: Formula One." According to Heidfeld it was the extensive testing programme before the 1997 season started that allowed him to consistently compete at the top right from the beginning. But: "To be able to run at the top you also need a good team, one that can supply you with a perfect car. West Competition is a very good team," Heidfeld says.

It doesn't take long before the compliment is returned. "Nick is very strong, both mentally and as a driver," says David Brown, West Competition team manager and race engineer. "He has a well-developed sense of what is happening with the car. If there is a problem he will soon analyse it. He will always think of a similar problem which occurred at a previous test and ▶



**Nick Heidfeld**

**Born:** 10 May 1977 in Münchenglöblich (Germany)  
**Marital status:** Single  
**Now lives:** Monte Carlo (Monaco)

<b>1988-1993</b>	Kart
<b>1994</b>	German Formula Ford 1600 Champion (8 wins in 9 races)
<b>1995</b>	International Formula Ford 1800 Champion (4 wins) German Formula Ford 1800- Championship: Second place
<b>1996</b>	German Formula 3 Championship Third place (3 wins) Formula 3 Macao Grand Prix pole position and win in the first heat
<b>1997</b>	German Formula 3 Championship Champion (5 wins) Monaco Formula 3 Grand Prix Pole position and victory Formula One test driver for West McLaren Mercedes
<b>1998</b>	European Formula 3000 Championship with West Competition Second place (3 wins) Formula One test driver for West McLaren Mercedes
<b>1999</b>	Le Mans 24 Hours with Team AMG Mercedes European Formula 3000 Championship with West Competition Champion (4 wins) Formula One test driver for West McLaren Mercedes

**Above: Heidfeld contemplates the set up of his car. Team manager Dave Ryan rates Nick's set up abilities very highly.**





F3000



Above: The men who have guided Heidfeld's career for three years, Norbert Haug (left) and Ron Dennis help him celebrate clinching the European Formula 3000 title in Hungary. Below: Heidfeld has been a consistent test driver for the McLaren Mercedes F1 team since 1997.

◀ a similar problem which occurred at a previous test and then tell the team what needs to be changed.

"All really good racing drivers have the ability to store such details about their cars in their memories. And they are also capable of driving a fast lap in a car that isn't just perfectly set-up. Nick can do both." What this judgement is worth can only be understood if you know that Brown formerly worked with Formula One world champions Alain Prost, Ayrton Senna and Nigel Mansell at Williams and McLaren.

Nick Heidfeld successfully completed the training programme which was set up by Mercedes-Benz and McLaren and funded by sponsors West, Mobil and Warsteiner. A Formula One contract which bears his signature proves the qualities of the junior programme as well as those of Nick himself. "Nick has constantly developed as a driver and as a human being," Norbert Haug states with obvious satisfaction. And Ron Dennis postulates: "Nowadays a driver has to be a mature person in order to hold his own in our sport." But Heidfeld has learned all the lessons. "When I first met him," Haug remembers, "he was a taciturn, shy little boy. Today he is a self-confident, competent, smart partner." Indeed he is, not only for his bosses, but also for



the engineers, his colleagues, the sponsors and the journalists.

What helped him, according to Haug, was the "positive environment" - an environment in which understanding, emotions and warmth have their rightful place next to professionalism and the commitment to success. "We have always treated Nick with respect and goodwill, we always gave him time to think and never put him under pressure," Haug says. "Nobody can learn effectively with too many regulations and a raised index finger." And Heidfeld? "Nick has listened very carefully and worked hard out of conviction."

What and who Nick Heidfeld is today he owes to his own hard work. His maturity and experience can no longer be

measured against his youthful age. "Nick has everything required for Formula One," Haug stipulates. "Now he has to show whether he is able to use his ambition and his commitment for the benefit of the Prost team." Neither Haug nor Dennis doubt in the least that their protégé has the self-confidence and the knowledge to do so.

And what does Nick Heidfeld himself expect from his debut year in Formula One? "Above all I need to learn." For the time being he does not want to think about any higher goals. ☺

Welcome to the team.



Not everyone can become a World Champion.



Mercedes-Benz





Motorsport watch with quartz movement, stainless steel brushed matt case, screwed stainless steel back and crown, double-strength high quality glass, water resistant to 100 m, soft calf leather strap, stainless steel fastening, tachometer ring, date display, hh:mm:ss/ss/10.



Black nylon reversible waistcoat made of high quality Rip Stop fabric with silver appliqué designs, transforms in seconds into a silver waistcoat, lightly padded and attractively quilted.



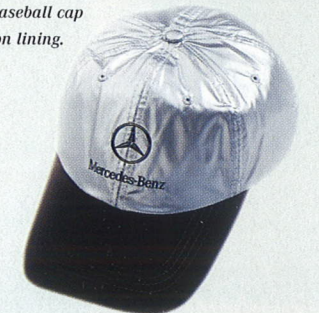
Flag made of 100% satin, black wooden stick 150 cm x 1.5 cm, flag sizes 60 x 90 cm or 100 x 140 cm.



Robust Rip Stop quality fabric nylon rucksack with padded shoulder straps and removable seat cushion measuring 24 x 28 x 3 cm.



Short-sleeved shirt with button-down collar made from pure combed cotton, sizes S - XXL.



Nylon baseball cap with black cotton lining.

Nickel-plated, embossed brass key ring.



But everyone can look and feel like one.

Promo watch with quartz movement, sturdy plastic case, display shows hh:mm:ss, plastic tachometer ring, soft plastic strap, water resistant to 30 m.



Polo piqué shirt made from 96% silk and 4% elastane with silver buttons, sizes S - XXL.



Windcheater with high-quality nylon outer fabric, mixed fabric lining, concealed hood, sizes S - XXL.



Fans' nylon umbrella, black underside, diameter when open 65 cm.



High quality miniature version of the original, true in every detail.





Lightly quilted nylon/polyester children's jump suit, cotton/polyester mixed lining with black cuffs and an elastic waistband. Sizes\* 98 - 104, 110 - 116, 122 - 128. Warning! The children's jump suit is not a racing suit as it is not made from fireproof material.

\*European sizes



Original miniature version of the Silver Arrow, made from highly polished silver-plated brass. Flat split ring made from silver-plated brass.



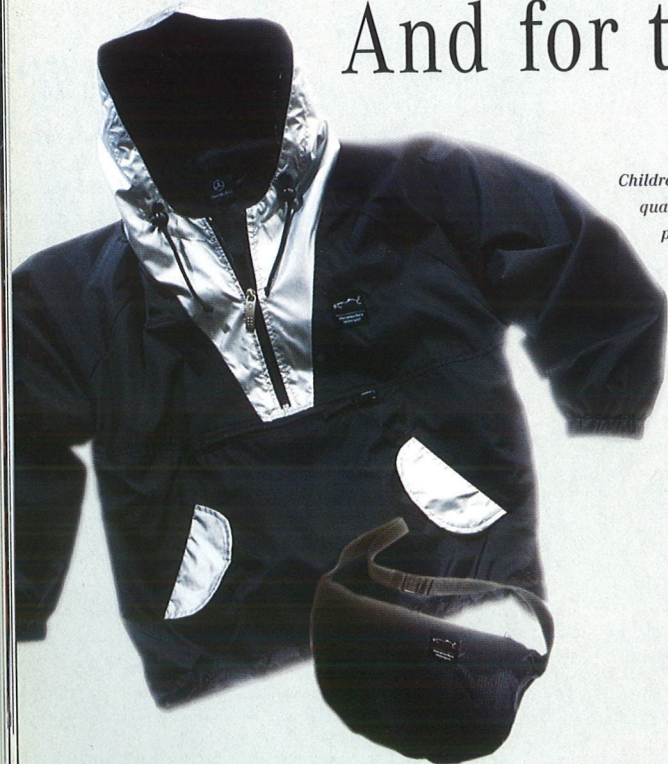
Pure combed T-shirts. Front shows either David Coulthard's or Mika Häkkinen's car. Sizes\* 140 and 152.

\*European sizes



Nylon baseball cap with cotton lining and embroidered signature.

## And for the little ones...

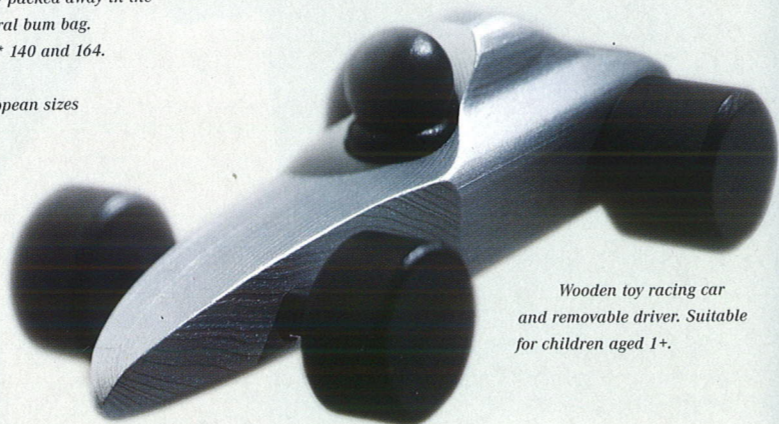


Children's all-weather jacket in high-quality Rip Stop fabric. Plenty of pockets and hood with cord-pull, stopper and 1/3 mesh lining. The cape can be quickly and easily packed away in the integral bum bag. Sizes\* 140 and 164.

\*European sizes



FI '98 A-class. Scale 1:18.



Wooden toy racing car and removable driver. Suitable for children aged 1+.

The products are available at your sales and service outlet or your authorised Mercedes-Benz workshop.



SUBS

# Join the winning team...

## STARS & CARS

### SUBSCRIPTION APPLICATION FORM

To guarantee you receive the next four issues of STARS & CARS, simply complete and return this form to the address given. Photocopies of this form are accepted.

YES, please start my annual subscription to STARS & CARS (4 issues including postage and packing).

Your details - PLEASE USE BLOCK CAPITAL LETTERS.

Mr/Mrs/Ms \_\_\_\_\_ Initials \_\_\_\_\_

Surname \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Country \_\_\_\_\_

Postcode/Zip \_\_\_\_\_

Tel No \_\_\_\_\_

Please tick here if you do not wish to receive information from other carefully selected companies

YOUR SUBSCRIPTION CHOICE:  
Please tick the relevant box for your postal zone

- UK 4 issues: £11.80
- Europe 4 issues: £14.50
- N.S. America, M. East, India, Africa 4 issues: £23
- Japan, NZ, Australia, China 4 issues: £26

I enclose a cheque drawn on a UK bank, or International money order payable to Haymarket Publishing Ltd

Please debit my Mastercard/ VISA/ AMEX/ Switch/ Delta/ Connect

\_\_\_\_\_

\_\_\_\_\_ Issue No (Switch only)

Valid from \_\_\_\_\_ Expiry date \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Just send this coupon with payment details to:  
Stars & Cars, PO Box 280, Sittingbourne, Kent, ME9 8FB. UK  
Or phone the SUBSCRIPTION CREDIT CARD HOTLINE  
on +44 (0)1795 414800 or fax +44 (0)1795 414555

Offer closes on 30th November 1999. Subscription will start with the next available issue.

MO39DP





Above left: Alain Prost and Carlos Reutemann took the front row. Above: Senna celebrates.

# A RACE OF CHAMPIONS

Fifteen years ago the new Nürburgring was opened with a spectacular flourish of marching bands and classic displays. As the centre piece of the weekend Mercedes put on a unique race that had never been attempted before and probably never will be again. From out of this event a truly remarkable figure emerged, Adam Cooper looks back

Ever wondered what would happen if the best GP drivers of today raced against the giants of the past in equal cars? It sounds like an impossible dream, but that's exactly what Mercedes achieved at the Nürburgring on May 12th 1984. On that day six contemporary F1 drivers gave up a spare weekend to race against a field which included some of the greatest names of the previous 20 years. The field included no fewer than nine past World Champions, plus two men who would lift the crown in the future, and who would dominate F1 for the next decade.

This remarkable one-off event was organised to celebrate both the opening of the new Nürburgring,

and the launch of the Mercedes 190 2.3 16-valve. The highlight of the opening ceremony was a 15-lap race for the 190s. The drivers were the first to officially sample the new Nürburgring, an ultra-modern 2.8-mile track built to bring top level racing back to the site after the legendary old Nordschliefe had been deemed too dangerous.

Mercedes was determined to get the most impressive entry possible. From the contemporary Grand Prix field the company attracted Niki Lauda and Alain Prost of McLaren, Keke Rosberg and Jacques Laffite of Williams, Elio de Angelis of Lotus, and a surprise selection, a newcomer called Ayrton Senna from the little Toleman team. The 24-year-old Brazilian was the only member of the ▶





RETRO

PHOTOGRAPHERS NAME HERE



A collection of motorsport stars the like of which had never been assembled before were gathered at the invitation of Mercedes.

◀ sextet who hadn't won a Grand Prix. Current AMG team boss Domingos Piedade, then a key member of the Senna camp, was the man who brokered the deal to get the little known British Formula 3 champion into the race.

"For him it was extremely important," Piedade, recalls. "It was the opening of the Nurburgring, which meant a lot to Ayrton. And it was the first time he had the same car as all these big shots. It was important for him to show what he could do."

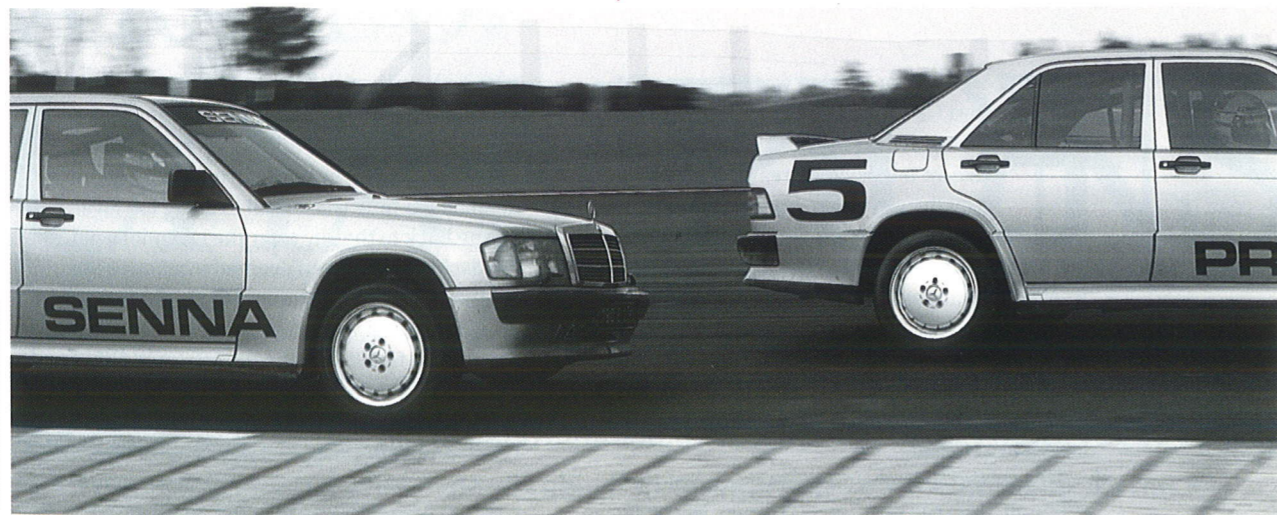
Lauda and Rosberg were also already World Champions (in 1975, '77 and '82 respectively), but they represented just the tip of the iceberg. Joining them in the stellar field were Jack Brabham ('59, '60,

'66), Phil Hill ('61), John Surtees ('64), Denny Hulme ('67), James Hunt ('76), Jody Scheckter ('79) and Alan Jones ('80). The great Juan-Manuel Fangio also came to offer his support, but after recent health scares he preferred not to compete in the race.

The only living World Champions missing were Mario Andretti and Emerson Fittipaldi, who were busy in America with Indianapolis 500 qualifying, and Jackie Stewart, who had always stuck to his original retirement plan and had not even competed in a kart race since 1973.

Apart from the champs, there were other F1 greats; former Mercedes team members Stirling Moss and Hans Herrmann were joined by recently

Below: It took Ayrton Senna very little time to catch and overtake leader and pole sitter Prost's 190.



PHOTOGRAPHERS NAME HERE

"It was the kind of event that I really loved because it was fantastic to meet all these guys. Even with the fun and the fact that we met all together, it was unbelievable how the competitive spirit was there."

ALAIN PROST



The interior of the Mercedes 190 was a slightly alien environment to Alain Prost after his usual McLaren cockpit.

retired veterans Carlos Reutemann and John Watson. The field was completed by sportscar aces and past 'Ring 1000kms winners Klaus Ludwig, Manfred Schurti and Udo Schuetz.

"It was the kind of event that I really loved," remembers Alain Prost, "because it was fantastic to meet all these guys. We had fun, but even with the fun and the fact that we met all together, it was unbelievable how the competitive spirit was there. Everybody, even the older guys were really serious!"

Despite what Alain says, opinions are divided as to how seriously the event was taken by the participants. But the Mercedes engineer responsible for the cars recalls how certain drivers took a keen interest in set-up. Carlos Reutemann even wanted to throw new sets of tyres on his

machine during qualifying...

"I treated it in the manner I felt it should be; it was a fun thing," says John Watson. "And there was a mixture of drivers of varying generations and ages; old friends, old adversaries, and some were both. I wanted to do well, but I wasn't trying to prove anything."

For Senna, the weekend was to prove a career landmark. Straight out of F3, he'd competed in just four Grands Prix for Toleman before going to the 'Ring. He'd already scored a couple of sixth places, but his name had yet to register. Even with guys he was racing against in F1, such as the man who was leading the '84 World Championship.

"It was the first time I met Ayrton," remembers Prost. "I picked him up at the airport, as we arrived 15 minutes apart, and Mercedes asked me if I could ▶



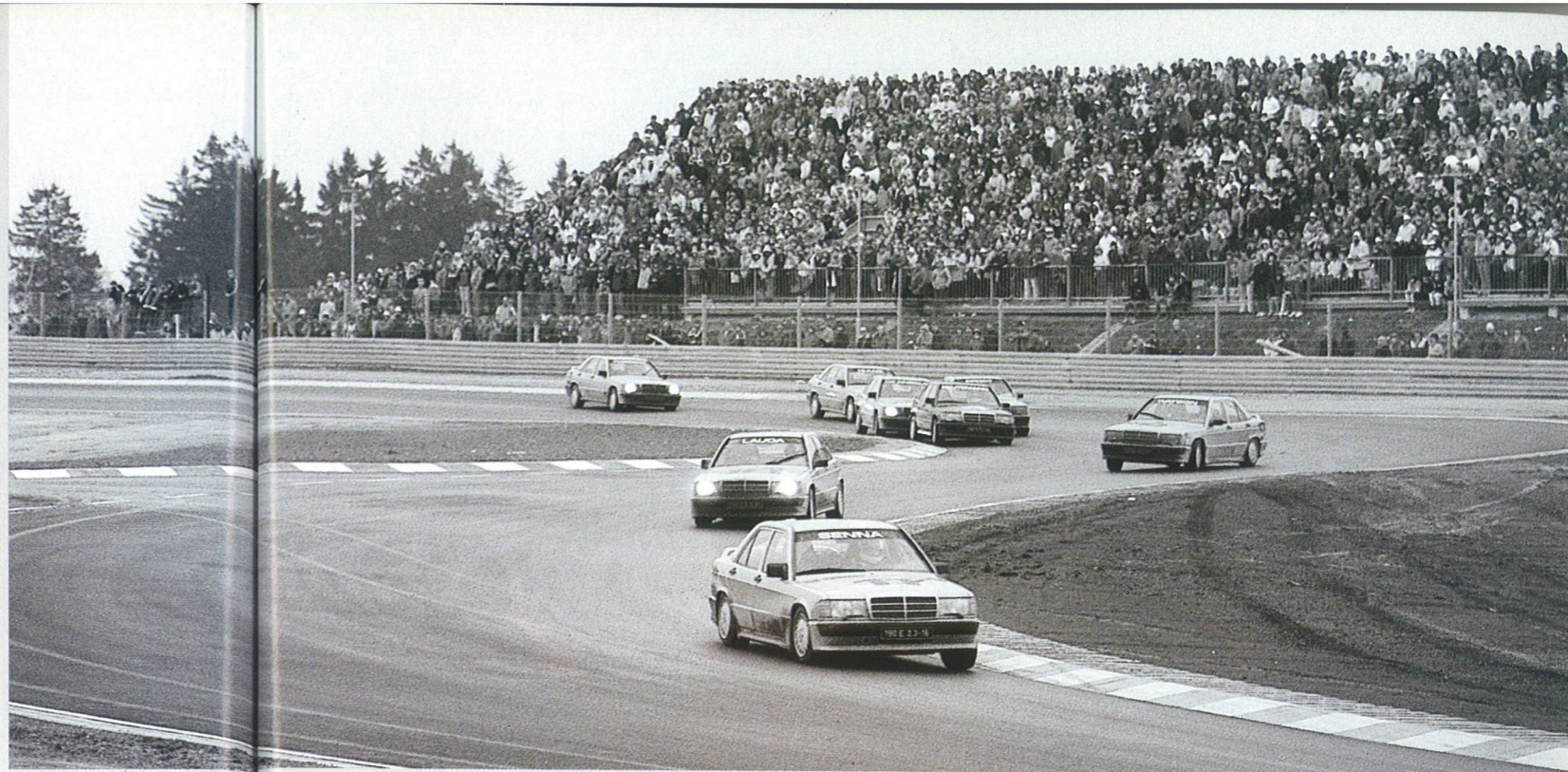


RETRO

**“For Ayrton, first of all being invited to participate was for him a sign of acceptance. It was like a rite of passage for him.”**

JOHN WATSON

**Right: Behind Senna the driving standards of the worlds greatest racers left a little to be desired as old rivalries resurfaced.**



PHOTOGRAPHERS NAME HERE

bring him. We spent half a day together. He didn't know anybody, which was really funny.”

Phil Hill was one of many veterans who had no idea who the Brazilian was: “My wife and I sat in a little room and tried to strike up a conversation with him. We were all freezing, and there was this funny little electric heater. He just kept looking at me. It was, ‘What is he trying to say?’ I finally just gave up, thinking he's one of the new breed! And in very short order of course he made a name for himself...”

The field may have been packed with stars like Hill, but when the race started, in damp and grey conditions, all eyes were on one man – the youngest guy in the race.

Senna got into the lead at the start, and pulled away to a comfortable win. Watson was one of many drivers who were impressed: “For Ayrton, first of all being invited to participate was for him a sign of acceptance. It was like a rite of passage for him. Ayrton went there on a mission, that's for sure. The thing that stands out in my memory was the way he attacked the kerbs, he was unbelievable. My

**Left: Lotus Formula One driver Elio de Angelis had an interesting race, hitting Alain Prost on the opening.**

generation of drivers didn't attack kerbs in such an aggressive way. No wonder he was quick!”

Watson had at least met the Brazilian, but for some of the others he was a revelation.

“It was the first time I'd ever heard of Senna,” says Stirling Moss. “It impressed me that a guy I'd never heard of actually won the race. I think it was probably the most important race of his career up to then, because it was such a high profile deal.”

“The most outstanding thing of course is how Senna went,” says Surtees. “You had a lot of people who were making exhibitions of themselves by driving straight across the grass, and there was Senna driving round, staying on the road, and pulling away. After that event I said to the Old Man (Enzo Ferrari), “If you want a driver, there's the one you should get!”

Behind Senna, there was all sorts of carnage. “Ayrton did a very professional job,” adds Surtees, “but he was helped by the fact that one or two of the others got into clownish situations and went off the track and generally muddled

everyone else up. James Hunt was the ringleader on doing the grasscutting! I think they got a few bent cars back.”

Fifteen years after the race Prost, who was hit by Elio de Angelis on the first lap, now looks back fondly on the event, “I think we should do it again,” he smiles, “The cars were very good, but that wasn't the point - we could have had touring cars, F1 or go-karts. It was a *competition*.”

Niki Lauda was second, followed by Carlos Reutemann, Rosberg and Watson. But Senna had made his mark, and he knew it.

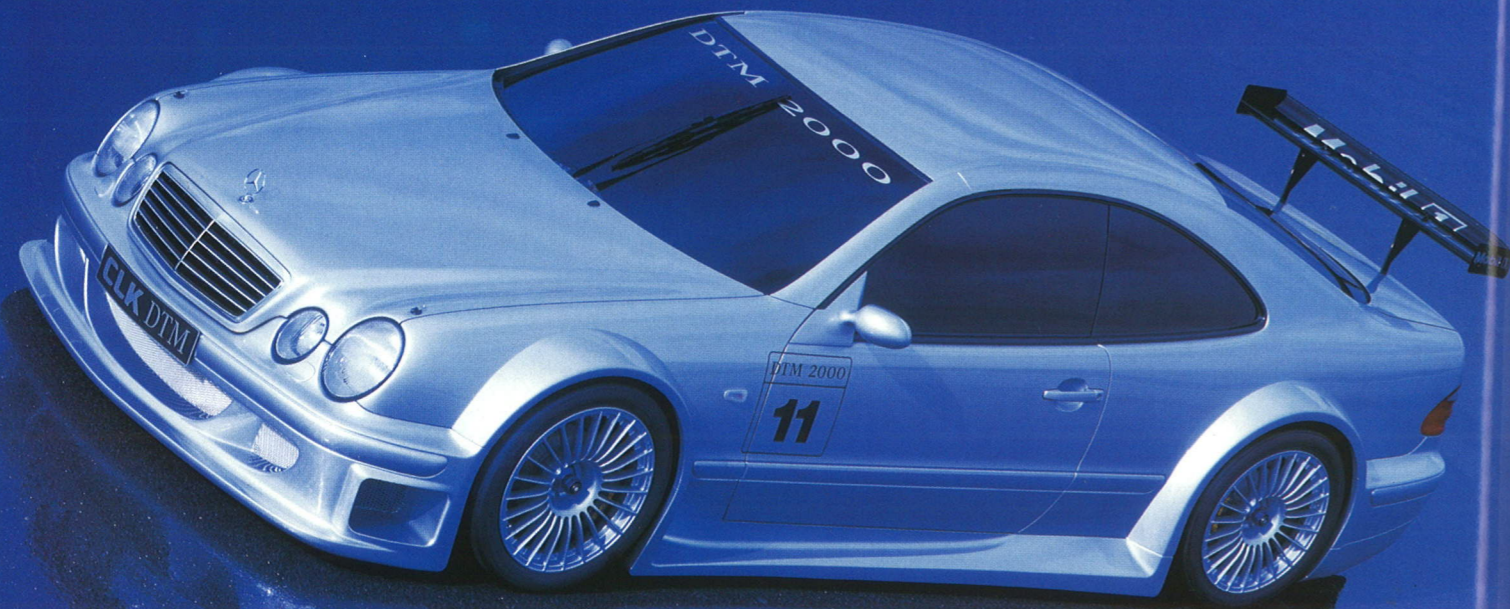
“I was at the Silverstone 1000kms,” says Piedade, “and the next day he came to watch, and thanked me for the opportunity to race against such famous drivers. He was very proud that his car had been taken to the Mercedes-Benz museum afterwards.”

Three weeks later Ayrton was second in pouring rain at the Monaco Grand Prix. He was catching race leader Prost's McLaren hand over fist when the race was prematurely red-flagged. That day the rest of the world learned about the young Brazilian. ☺

**“I think we should do it again. The cars were very good, but that wasn't the point - we could have had touring cars, F1 or go-karts. It was a competition.”**

ALAIN PROST





Left and below: The CLK Racing Study launched by Mercedes at the Frankfurt Motor Show signifies the company's intentions to be a central part of the new series.

**W**henever a new model is unveiled at the IAA in Frankfurt - the world's premier car show - the scene is usually one of gleaming headlights and dazzled faces. But the presentation in the middle of September when Mercedes-Benz unveiled their CLK Racing Study was anything but usual. The optimism, amazement and anticipation of the assembled guests grew and grew as the moment came when the Silver Arrow Coupé was finally revealed: it doubles as a model for a new German racing series.

The famous three letters - D.T.M.1 - plus the dateline - 2000 - form a new buzzword for the enormous number of fans of saloon car racing in Germany. (In 1995, the last year of the classic DTM, some 850,000 fans at the tracks, together with approximately 353 million television viewers, watched as Bernd Schneider and Mercedes clinched the two titles). Now the new stars want to be part of that tradition.

Back to the future: The DTM 2000 series sees the new Millennium as the beginning of a new focus on national saloon car racing. But while the Millennium figure could be seen as a popular ▶



DTM2000

# A RETURN TO THUNDER

The wild spectacle and marvellous sounds of the world famous DTM series could be back, with the news of an innovative saloon car championship in Germany to recapture the atmosphere fire the imagination

WORDS: ELMAR BRÜMMER. PICTURES: MERCEDES MOTORSPORT







DTM2000



Left: The front of the CLK Racing Study gives an impression of power and style.



Left & right: The silver car clearly shows its DTM lineage with its sleek lines and aerodynamics.

◀ slogan. The series is also given weight by the use of the old DTM brand name.

Calls from spectators for a more spectacular racing series are growing ever louder as the German Super Touring Championship has failed to ignite the public's enthusiasm like the old 450bhp monsters. The DTM is a legend and many people still carry the images of the old days in their minds. "On that basis alone our plans would already seem to be a success," says Mercedes sports boss, Norbert Haug.

Now with this successful rebirth, good sense has prevailed in many respects; but particularly through an ingenious, forward-looking, inexpensive set of technical regulations. They are in many ways a refined continuation of the old DTM philosophy.

The cornerstones of this idea are the low development and operating costs (compared to other top formulas) for the racing saloons. Put in a nutshell, this format guarantees that all the vehicle designs will have the same chance of success and a high profile image.

The latter will be achieved both on the racing track and on the streets, because the rule is that within a year manufacturers must produce at least 10,000 road versions of the racing cars used in the

series. The German Federal Finance Minister, Hans Eichel, would certainly be highly delighted if the new German craze for saloon racers were to fall into his remit: the DTM cars are powered by long-life, low-maintenance 4-litre eight-cylinder engines.

In order to limit operating costs the engines may not be exchanged during the season. This represents an additional challenge both for the mechanics and the drivers who race with power units and vehicles built by Mercedes development partner, HWA.

The racing itself will be deliberately limited to race weekends. On Friday afternoons only testing is allowed. But on Saturday there will be two free practice sessions and one qualifier; and on Sunday there are two, 60 mile races. There will be a total of 10 meetings planned, visiting every German circuit. It's a healthy mix of classics like Hockenheim, Nurburgring and the Norisring and newcomers such as Oschersleben, Sachsenring and Lausitz.

There are no restrictions on the chassis design for DTM 2000 although one sensible rule does apply; the banning of all active, electronic or hydraulic control systems. Equally all brake units and brake pads must be made of carbon and all gears and differentials must be the same,

irrespective of the make. Only items that are absolutely essential are retained (without of course compromising the high technical demands).

"Equality," says Norbert Haug, "is what is demanded these days." Other manufacturers interested in DTM 2000 can thus be assured of a degree of consistency and stability in the rules, and Mercedes-Benz would willingly welcome another or several other competing manufacturers.

At the outset 20 vehicles would seem a realistic and ideal starting field, but the contingent of factory entries may be supplemented by vehicles from other countries or similar series. In 1993, when the old DTM had to re-form, just seven factory entries provided an attractive and entertaining spectacle. It is unlikely that there could be a racing series with more than 12 cars with winning potential. But DTM 2000's adherence to the spirit of equality means organisers can be fairly confident that it will catch on in a relatively short period of time.

Of course one key attraction in its own right is the group of drivers involved. Former Grand Prix drivers are among the potential candidates, together with new talent (plans are under consideration to have pure junior teams); It's quite possible that a saloon car giant like Klaus Ludwig

could be persuaded to get back into the driving seat and applications have already been received from other well known German drivers who are active in international saloon and sportscar series. Even guest starts by current Formula One drivers seem possible.

Through all this, though, safety has been held up as a core element. The cars' bodywork is to be made of steel plate. But an integrated part of the chassis frame must include a driver safety cell made from composite materials which must surround the driver, from the pedals to the head supports. The safety cell must be further protected by highly resistant front and side impact devices that must meet the tough regulations laid down by the World Automobile Federation.

There really is no limit to the pleasure that DTM 2000 could give spectators. One prerequisite is that this new version of DTM must recreate the original atmosphere of the old German Saloon Car Championships; it's an atmosphere that made the series famous. The public's closeness to this family-oriented sport is to be further expanded by sensible prices. "We are even thinking about building a proper motorsport theme park," says Norbert Haug. "It'll be an experience in the best sense of the word." The race is on. ☺

**There are no restrictions on the chassis design for DTM 2000 although one sensible rule applies; the banning of all active, electronic or hydraulic control systems.**







A race day in the life of...



## UWE MÜLLER

Mercedes Motorsport F1 bus driver

# BEHIND THE SCENES

The only quiet Sunday night I have until I sit down in front of the television to watch the race.

My Grand Prix weekend starts on the Monday before the race as we start packing up our bus at my home town in Germany. It's as if a big family were going on holiday. Everything from CD players to pens and paper has to be thought of. It is now 10 years since I started driving the Mercedes motorhome and since 1995 I have been part of the Formula One team.

Usually I arrive at the racetrack on the Monday night because on Tuesday morning the parking lots are allocated. This entails a lot of driving forwards and backwards as many teams bring up to four buses to the track, as well as the transporters. There is no room for getting out of the way. Our lot is exactly 5.5 by 14 metres and the FIA will not allow us a single centimetre more.

Once this qualifying session is over, construction work can begin. First the bus has to be levelled off. Then out come carpets, rugs, awnings, tables, chairs, the lot. Next I connect the cables. This is where thoughtful preparation during winter pays off - as is the case with the racing cars. Eight kilometres of electric cables are hidden inside the bus while from the outside you just see the sockets. Sometimes, when we are at a track where the number of sockets is limited, there's a race on for the electricity pole.

Wednesday morning is fine-tuning time. I try to implement what I most admire about F1 in my own little field of responsibility: Speed and professionalism. On Thursday morning the other team members arrive as well as the journalists whom we will supply with food and drinks for the remainder of the week. Norbert Haug moves into the conference room, Mercedes Motorsports mobile command tower, and for me office work begins.

Every morning I call the nearest airport to get the latest weather forecast. I really do think I have an allrounders job. I trained to be a butcher which is why originally I got the job as a

member of the kitchen crew. When I took over responsibility for the whole bus I thought it didn't hurt to know all about fax machines, computers, TV sets, telephones and satellite dishes. But I carry round a list of contact numbers which would get me expert help in case my knowledge left me in the lurch.

Something you always need in the paddock is a bit of luck and helpfulness. Fortunately, there is plenty of the latter. Our neighbours have run out of potatoes and we need rice? No problem. Trading-in does the job. The only situation where you cannot expect any help is when it rains. No tent is one hundred per cent rain-proof and keeping the rain out can become an enormous challenge. It is often an advantage when you have put it up yourself because then you know where it is most likely to leak. So far we have never been washed away.

But while helpfulness to other teams is one thing, competition among bus crews is another. And this competition not only concentrates on who is first to unpack, but we also try to find new solutions to stack and pack things in the most economic way, or how to display the food in an even more appealing manner. We find that our area is becoming more and more sophisticated, more and more high-tech, just like the cars.

The Saturday and the Sunday are the most important days on the track as well as in the paddock. I get up at five in the morning and my first job leads me to the local bakers shop. After that it's 12 hours of non-stop activity. The only quiet I have until Sunday night is when I sit down in front of the television to watch the race. Motorsport is my great passion and watching the race is important to me because I'm not here for the job alone. If we win we always have a party and we don't mind doing overtime then. A victory is the nicest way to finish a race weekend. I always feed on it until I get home again on Monday night.



## FORMULA 1 WORLD CHAMPIONSHIP

7 March	Australia
11 April	Brasil
2 May	San Marino
16 May	Monaco
30 May	Spain
13 June	Canada
27 June	France
11 July	England
25 July	Austria
1 August	Germany
15 August	Hungary
29 August	Belgium
12 September	Italy
26 September	Luxemburg
17 October	Malaysia
31 October	Japan

### DRIVERS' CHAMPIONSHIP UPDATE

1	MIKA HAKKINEN	60
2	Eddie Irvine	59
3	DAVID COULTHARD	46
4	Heinz-Harald Frenzen	40
5	Michael Schumacher	32
6	Ralf Schumacher	24
7	Giancarlo Fisichella	13
8	Rubens Barrichello	12
9	Damon Hill	7
10	Mika Salo	6

### MANUFACTURERS' TITLE UPDATE

1	MCLAREN-MERCEDES	106
2	Ferrari	97
3	Jordan-Mugen Honda	47
4	Williams-Supertec	24
5	Benetton-Playlife	16
6	Stewart-Ford	14
7	Sauber-Petronas	4
8	Prost-Peugeot	3
9	Arrows	1
10	BAR-Supertec	0
=	Minardi-Ford	0



## FEDEX CART CHAMPIONSHIP SERIES

21 March	Homestead
10 April	Motegi
18 April	Long Beach
2 May	Nazareth
15 May	Rio de Janeiro
29 May	Madison
6 June	Milwaukee
20 June	Portland
27 June	Cleveland
11 July	Elkart Lake
18 July	Toronto
25 July	Michigan
8 August	Detroit
15 August	Mid-Ohio
22 August	Chicago
5 September	Vancouver
12 September	Laguna Seca
26 September	Houston
17 October	Surfers Paradise
31 October	Fontana

### DRIVERS' CHAMPIONSHIP UPDATE

1	Juan Montoya	194
2	Dario Franchitti	171
3	Michael Andretti	124
4	Paul Tracy	122
5	Christian Fittipaldi	101
6	GREG MOORE	97
7	Gil de Ferran	96
8	Adrian Fernandez	95
9	Jimmy Vasser	94
10	Max Papis	91
11	Tony Kanaan	68
12	PATRICK CARPENTIER	57

### MANUFACTURERS' TITLE UPDATE

1	Honda	315
2	Ford	228
3	MERCEDES	170
4	Toyota	61



C A L E N D E R



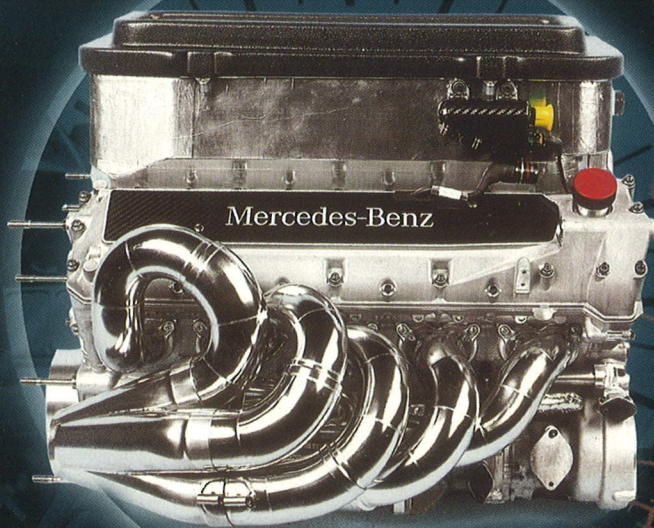




**The Body**



**The Brains**



**The Heart**



**The Blood**

**Mobil 1**  
Feel the difference

[www.mobil-motorsport.com](http://www.mobil-motorsport.com)