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THE MARSHAL

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Correspondence in
connection with
The Marshal:
Stuart Turner
'Penny Farthing'
Heythrop,
Chipping Norton
OX5 5TW

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Motorsport Safety Fund
PO Box 200
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www.motorsportsafetyfund.com

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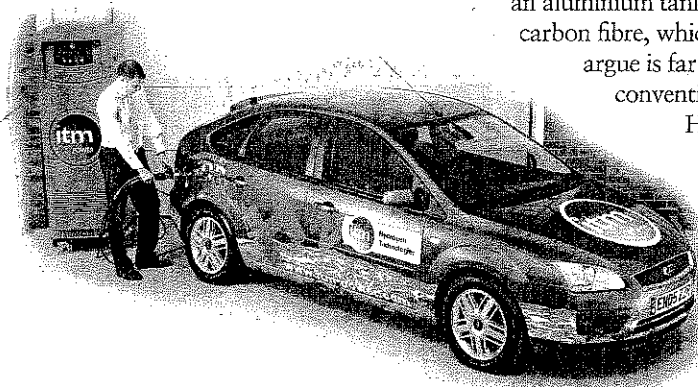
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Hydrogen – miracle fuel or safety hazard?

Forget biofuels, lpg, regenerative braking and electric cars – the next big safety issue on the horizon could be how we deal with competition cars powered by hydrogen.

It's the lightest and one of the most reactive gases, burns with a hot, clear flame, requires less than a tenth of the energy to ignite than a petrol air mixture and will leak through some metals, in addition to causing them to become brittle over time.



But, it's green and clean. When it burns, the only by-product is water, it can be used to run a normal petrol engine – with different injectors – and, because it is so light – twice as light as helium – it rapidly dissipates, which means a hydrogen fire will go out while a petrol fire remains alight.

One UK firm – ITM Power – has already developed a cost effective way of using low cost off peak or green electricity, generated by wind turbines, wave power or solar

energy to split water into hydrogen and oxygen and fill up a gas tank in a domestic car with the hydrogen.

ITM's "electrolyser" is slightly smaller than a conventional petrol pump and could fit into a garage.

The company has also developed a dual fuelled Ford Focus, capable of running on petrol or hydrogen and switching between the two without a stutter.

ITM's Focus stores hydrogen as a gas in an aluminium tank, covered by reinforced carbon fibre, which company spokesmen argue is far more robust than a conventional petrol tank.

Hydrogen is fed to the engine through a steel braided, low pressure hose, with cut off valves at either end which operate in the case of a leak.

As the engine is dual fuelled, two sets of injectors are

needed – one for petrol

and the other for hydrogen,

but a pure hydrogen fuelled car would only need one set.

An overnight charge is enough for an average commuter journey to and from work, so if hydrogen powered racing saloons took off, the issue, initially, would be providing refuelling facilities in the paddock.

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WATKINS LECTURE 2009

The Trustees are delighted to announce that the twelfth annual Watkins Lecture is to be given by

Ron Dennis CBE

Chairman and CEO of the McLaren Group

It will start promptly at 11.15am (doors open 11am)
at the NEC Birmingham on Friday 9th January 2009.

Admission is free but by ticket only – there is an application form on page 9.

Marshals – Look after yourselves!!

The Trustees join all enthusiasts in congratulating John Symes on his promotion to MSA Technical Director.

Reporting directly to Colin Hilton, John will take a more strategic role in setting the MSA's future policies on technical and risk management issues, but in recognition of the growing importance of the environment within motor sport, he will also become responsible for the MSA's environmental positioning.

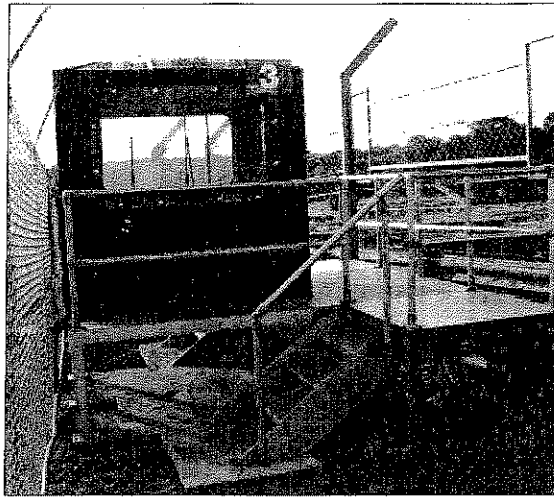
John has always been very helpful to the Fund; this article reflects his high level of interest in marshals' safety.

Whilst the following relates mainly to race circuits, the same thinking and principles apply wherever you are marshalling. Use the protection that is available to you. Think about where you are standing and about where cars are most likely to end up if, for example, they carry too much speed into a turn. Take advantage of the protection provided, be this installed barrier, large trees, banking etc.

The first thing to be impressed on all marshals be it at marshalling training sessions or individual race meeting post briefings by the observer, is that the first duty a marshal has is to himself or herself. That duty is that you minimize the risk of being injured and thus then not being able to give assistance to others. If injured, not only does it mean you cannot help others but resources will then be spent on assisting you!

It is interesting to look back at photographs of years gone by and see race circuit marshals standing almost literally at track edge with little or no protection. Things have changed over the years, cars are going faster and faster, peoples' expectations are higher and there are forever those

words "Health & Safety" being bandied about. In simple terms what was acceptable in life, not just in marshalling, in years gone by is not acceptable now.



Brands Hatch Post 3, showing the observers hut, raised platform and reinforced apertures in the debris fence to facilitate flag signaling.

By the very nature of what they do, marshals are nearer competing cars than spectators. Realistically, to have this closer relationship with the competition is part of the attraction of being a marshal. Whether it be the venue owner, organizing club or the MSA, there is a duty of care for all reasonable precautions to be taken to manage the risk that is inherent in motorsport to minimize the possibility of marshals being injured. Such responsibility is one of the reasons so much effort goes into the training of officials and marshals.

The increased risk to race track marshals was recognized long ago. There has been some sort of debris screen protection at certain marshal

posts for more than 20 years, a couple of posts on the Brands Hatch Full Circuit spring to mind as examples. About twelve years ago, in common with Grand Prix Circuits the world

over, debris screen protection was installed at Silverstone's trackside marshalling posts. It's thus been there a long time, it's familiar and largely speaking does not give rise to comment.

Many marshals will claim "I'll get out the way" but if you think that then please think again. The chances of seeing a car or debris coming your way and being able to react in time not to be hit are remote. Importantly there is no guarantee that even if you move fast enough, you'll move the "right way".

Over the last three or four years at all race circuits a lot of effort and financial investment has been put into improving operating conditions for marshals and to give them appropriate debris screen protection. Improvements have ranged from providing a decent surface for marshals to stand on, providing protection from the elements by provision of shelters, installing decent steps where necessary, installing debris screens etc.

We've not got it 100% correct at times and when we've had sensible feedback we have made amendments to address the comments made. What does irritate is to find instances of marshals not making use of the facilities provided for them. Debris screens have

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But, as we have seen with lpg and bio-fuels, when someone wants to make a point about alternative fuels, they often choose the race track as an appropriate venue.

Protagonists argue that even tanks for liquid hydrogen are so robust that they won't rupture in a fire.

They point to tests where cylinders containing liquid hydrogen have been subjected to car crashes, had armour piercing bullets fired at them,

been dropped onto concrete surfaces, put in the middle of a diesel fire and been subjected to battery acids, salt water, brake oils, and other corrosive liquids found in automotive environments and met all the safety requirements.

They also point to the speed with which hydrogen dissipates.

For many, the images of the Hindenburg disaster will colour their view about the advisability of using hydrogen to fuel cars – but even there

the protagonists have an answer.

Most of the passengers and crew survived. Of the 27 who died, 25 jumped to their deaths from the stricken airship in panic and the other two died due to the fire spreading to airship's diesel powered engines and much of the problem may have been down to the coating on the vessel, rather than the hydrogen which burnt mostly above the airship and away from the gondola carrying the passengers.