



## Le Mans 24H race - 4 weeks

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#1 Audi R18 e-tron quattro - 2012 Le Mans winner

With just four weeks to go until the 2013 Le Mans 24H race, we take a look at the lap times and performance figures of some of the top class performers over the last few years.

Criticism has been levelled from several quarters at the Balance of Performance (BoP) waivers that are allocated or given to a manufacturer in order to bring the contenders in a class up to a common level of performance. These BoP waivers have been described by one top manufacturer as 'having no place in professional motorsport', and this is a very mature and wise opinion to have, as there are other ways of levelling the playing field that are less subjective.



Porsche 911 GT3 RSR (997) at Le Mans 24H race 2012

In the past the ACO and FIA regulators have employed a range of measures with which to group cars in a certain class and to ensure a certain level of performance and power output. For instance, the Group C cars of the 1980s are an excellent example of how the manufacturers and the regulators can work together, as this group sought in the late '70s to replace the outdated Group 5 and Group 6 race cars. Group C came into existence in 1982 and essentially gave the manufacturers freedom with the chassis and engine, but the engine had to be sourced from an existing production car. The competing cars also had to adhere to a fuel consumption formula which forced teams to develop a race car that would reach the end of the race within the allotted fuel allowance for their class. This allowed manufacturers to develop race cars that resulted in the most exciting decade of racing the public have ever seen, and it did wonders for the sale of road cars produced by those manufacturers.



#10 Porsche 962, Group C, in action at Le Mans 24H, 2012

Today's racers though have their power output limited through a choking air intake restrictor which can be increased at the discretion of the regulators, and the aero elements can also be moved upon request by the manufacturers, and at the discretion of the regulators. This subjective approach is dependent on the strength of the team's presentation to the authorities and this opens the door to inconsistencies. The same false situation exists in the Touring Car world where the winning car must carry a weight ballast in the next race forgetting the fact that the car won the race because it was the fastest on the track that day - I thought that was the whole idea of going racing, not to penalise the fastest car after it has won, and then put it at the back of the pack.



#73 Chevy Corvette C6 ZR1, Corvette Racing, LMGTE Pro at the Le Mans 24H 2011

So, looking back at the lap times of the LM P1, LM P2, GTE Pro and GTE Am cars, how have they fared year-on-year? Taking the class winning cars, let's take a look:

	LM 24H	LM 24H	LM 24H
Class/car	2010	2011	2012
LM P1			
#9 Audi R15 TDI Plus	3.22:282		
#2 Audi R18 TDI		3.25:289	
#1 Audi R18 e-tron quattro			3.25:706



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LM P2			
#42 HPD ARX 01	3.33:742		
#41 Zytek Nissan		3.43:883	
#44 HPD ARX 03b Honda			3.41:024
LM GT1			
#50 Saleen S7R	3.56:469		
LM GT2			
#77 Porsche 997 GT3 RSR	3.59:542		
GTE Pro			
#73 Corvette C6 ZR1		4.00:553	
#51 Ferrari 458 Italia			3.56:953
GTE Am			
#50 Corvette C6 ZR1		4.06:478	
#50 Corvette C6 ZR1			3.58:534



Aston Martin, Porsche and Ferrari, fierce rivals, battle it out at the Silverstone 6H 2013

Audi technical comparisons (2010-2013):

	2010 R15	2011 R18	2012 R18	2013 R18
Details/Car	TDI Plus	TDI	e-tron quattro	e-tron quattro
Engine	90° V10	120° V6	120° V6	120° V6
Capacity	5,500 cc	3,700 cc	3,700 cc	3,700 cc
Valves	4	4	4	4
Camshafts	DOHC	DOHC	DOHC	DOHC



Turbocharger	2x Garrett	1x Garrett	1x Garrett	1x Garrett
Turbo pressure	2.59 bar	3.0 bar	2.8 bar	2.8 bar
Air intakes (mm)	2x 37.5	1x 47.5	1x 45.8	1x 45.1
Power (more than)	440 kW	397 kW	375 kW	360 kW
Weight	930 kg	900 kg	900 kg	915 kg

(Source: Audi Motorsport Press)



#80, Porsche 911 RSR (997), Flying Lizard Motorsports at the Le Mans 24H 2011

Porsche 911 (Type 997 & 991) technical comparisons (2010-2013):



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	2010 997	2011 997	2012 997	2013 991
Details/Car	GT3 RSR	GT3 RSR	GT3 RSR*	RSR**
Engine	6-cyl boxer	6-cyl boxer	6-cyl boxer	6-cyl boxer
Capacity	3,795 cc	3,996 cc	3,996 cc	3,996 cc
Valves	4	4	4	4
Camshafts	DOHC	DOHC	DOHC	DOHC
Air intakes (mm)	2x 29.5	2x 28.6	2x 28.6	2x 29.3
Power (around)	331 kW	335 kW	338 kW	338 kW
Weight	1,245 kg	1,245 kg	1,245 kg	1,245 kg

\*2012 997 GT3 RSR was 48 mm wider than its predecessor.

\*\*2013 991 RSR is 100 mm longer than its predecessor.

(Source: Porsche Motorsport Press)



#50 Saleen S7-R - Larbre Competition, Winner LMGT1 Le Mans 24H 2010

In some ways it is very difficult to make a comment on the comparative lap times of the Audi LM P1 class winners because the cars are so different from one another, but it can be seen that despite the increasingly restrictive regulations, the times for 2011 and 2012 are very similar. Worth noting though for 2013 is the fact that power is down yet again and the cars' weight is up, but with some clever aero upgrades, the times this year are likely to be very similar once again.



#51, Ferrari 458 Italia, AF Corse, LMGTE Pro, Le Mans 24H 2012

The LM P2 class is pretty much a lost cause at the moment, because the whole class is cost capped and so no development can really take place. Besides, of the 22 class competitors, 15 of the teams run a 4.5-litre V8 Nissan engine (there are only five different engines in the whole class) and seven of the teams have the same chassis (Oreca). The cars all look the same as a result and are differentiated only by their sponsors' logos.



#50 Chevy Corvette C6 ZR1, GTE Am, Winner in their class at the Le Mans 24H, 2012

Some say that the setup in the GTE Pro and Am classes is a healthy one in that the Am class is always assured of having adequate spares and expertise available with which to run a car in that class, as the technology is handed down from the previous year's Pro class and is therefore at most a year old. While this might be true, I am not convinced by this view because unless the Pro class is constantly attracting new entrants, the Am class won't be fed by a healthy crop of 'new' 12-month old technology from last year's competitors. It is therefore crucial for the survival of the sport that the authorities are constantly attracting manufacturing teams into the Pro class, and a set of regulations needs to be written that ensures new blood comes into the top GTE class for the whole WEC season, and not just for Le Mans.



#1 Audi R18 e-tron quattro - Hybrid, Audi Sport Team Joest, FIA WEC 2013  
6h of Silverstone

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