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VIPER AT LE MANS 2015

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VIPER AT LE MANS 2015

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Almost immediately after winning both the 2014 TUDOR Drivers Championship with Kuno Wittmer, and the Team Championship for SRT motorsports, Dodge pulled their support for the GTLM program. However, Ben Keating's successful Viper Exchange privateer team continued in the GTD class, and now combined with some of the brain-trust from the former GTLM program, they won the 24 Hours of Daytona. It took the withdrawal of a P2 class car to open up a slot in the field for the biggest show of all. Viper was going back to the 24 Hours of Le Mans.

The LM GT PRO field is populated with names that resonate from past seasons of Formula One... Magnussen, Gavin, and Fisichella. In the LM GTE AM class it is a mix of pro drivers such as Pedro Lamy, Mathias Lauda, or Patrick Long...and wealthy amateurs. Given that the equipment is the same, the grid is often a big mix-up of PRO and AM cars. Bill Riley is the wizard behind the Viper car design for Le Mans. Riley – "In the AM class, you can have one Gold/Platinum (Jeroen Bleekemolen), you have to have a Silver (Ben Keating), and a Bronze (Marc Miller). It is a huge deal for us to go back, we are really excited about the opportunity to go back to Le Mans; it is one of my favorite events."

The Riley name has a long connection to GT racing and Le Mans. Bill continues – "My Dad, Bob Riley, he designed the Greenwood Corvettes. In 1983 I started doing detail work, when I was 15... and with the team I was a go-fer. My first project was detail work on the Capri, the Roush Protofab car that won the Trans-Am. Bob and I designed the Intrepid with the all-carbon tub. We did the Capri in 84, the Mustang in 85, the Camaro that won in 86, the Beretta that Kendall won the Trans-Am with in '90... I don't know if there is anybody that has as many GT wins as Bob (Riley)."

This is a very different situation from the full SRT factory effort at Le Mans of 2013, or that won the American GTLM championship in 2014. Bill Riley – "This is more of a privateer effort with Ben Keating. The cars are homologated, the car hasn't been developed since the beginning of '13. We can test with shocks, springs, & bars, but we can't make any new parts like new suspension or bodywork as that is all homologated." A privateer effort to win Le Mans is financially not for the meek. Riley – "Viper Exchange is the primary sponsor." Ben must be selling a lot of Vipers. "He's selling a lot of everything, I think."

In a world of unibody cars, the Viper is different. Team Engineer Matt Bejnarowicz - "The regulations are very specific there, and we have a little bit of an advantage with the Viper in that there is a mild steel tubular frame chassis in the street car. It is a rolling chassis and you can take the bodywork off and drive it around all day long. This is a huge advantage in the ease of repairing the car." Bill Riley spells out other Viper advantages "Right from the start... It doesn't have suspension cradles, it's all part of the frame. The engine is low and pretty far back, so the moments are all pretty low on the car, it has a good layout and it lends itself to being a pretty good car."

How does the FIA find equivalency between an 8 litre V10, and the much

smaller V8s and flat 6 engines raced by the competition? Matt – "You also have to use production castings and that's how we have the exception that allows us to run at 8 (liters). It would have to be one or the other (non-production castings or larger displacement). The engine weighs 430# and that's over 100# lighter than the street car. It has a crankshaft that is 40# lighter. The oil pan is less, the intake is less... it is substantial."

The gearbox is a specially built transaxle unit. Matt – "Basically it is like a Daytona Prototype box. It is made by Xtrac and we have the magnesium housing around it, so it is pretty lightweight. The AC compressor and the alternator run off the backside (of the gearbox)."

Aerodynamics are all important at Le Mans, and the scale is tilted towards low drag. Bill Riley – "When we did the Viper 3 years ago, Le Mans was always on the radar, so it was always a compromise racing it in the US series, which you need high downforce mostly vs. racing it at Le Mans or Daytona. The wing was developed more towards Le Mans or Daytona than it was for the high downforce tracks. We were a bit down on top speed vs. the competition and that was probably our biggest deficit. Actually we won the Championship (2014 GTLM class in North America) because of the handling vs. the other cars. The geometry and mechanical grip is superior to our competition."

Matt explains – "The Viper has always been a handling car which is contrary to everyone's belief. The US tracks are a different animal, and the name of the game is maximized downforce." Le Mans is a very different situation with numerous high speed straights. Matt – "What you saw at the end of the US 2014 season, we were running a 2" wicker, trying to get as much angle out of the wing, get as much downforce as possible. Now (for Le Mans) we've minimized the wicker, what we learned in the US was a different mission."

Matt – "The BoP (Balance of Performance) stuff... the FIA uses a bunch of mechanisms to balance the car and there were 2 major changes. One was the wing height, as you can see it's higher than when we ran in the North America series. . In the case of the Viper at Le Mans, it suffers a little bit in top speed, an aero efficiency thing. The wing is 125mm higher than we ran last year. We were 25mm below the roof, now we are 100mm above the roof. The FIA recognizes that it's an economical solution for a privateer effort, there's no tooling other than the uprights. We did a bunch of wind tunnel testing and moved the wing up above the roof. What it does is improve the aero efficiency of the car, it reduces drag without affecting the downforce. The (wing) homolgation is frozen, the farther and farther away you get the more the wing is working in its own air and the more optimal it becomes." A 21st Century Superbird.

The other change concerned the engine air restrictor size. Matt – "We were at 29.6mm air restrictors in 2013 and also that in the US. But they were different engines, as we were running E85 in the US, which has a pretty big performance benefit over the E20 used at Le Mans. The E20 engine is at about a 12.1 to 1 compression ratio, but the E85 engine is about 16:1 compression, due to the cooling aspects of the fuel... the thermal efficiency is higher. Now the restrictor for 2015 at Le Mans is 29.8mm, they gave us a 0.2mm increase, but we're still a little bit slow. There is an improvement of probably 6 to 8 kph vs. 2013. It's tough for the FIA to do their BoP, their data point is taking a US performance with a different engine, different tracks, and high downforce and apply it over here to Le Mans." It could work to your advantage. "Typically it doesn't".

Are there other significant changes since the car last raced in America at Petit Le Mans? Matt - "Evolutions are not allowed, the homologation is very strict. These are essentially the same cars as 2013. If you ever go to scrutineering they have all the laser measurements printed on the table, it's pretty detailed but they don't use templates."

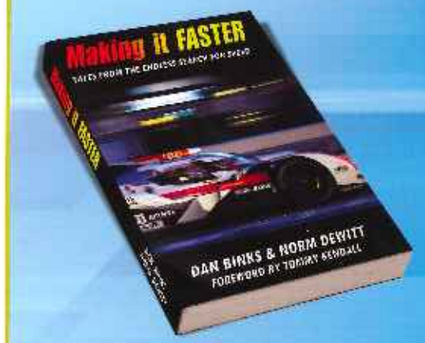
Does the Michelin tire still have an advantage? Riley - "For sure, it's a good tire... an unbelievable tire." Matt - "Tire strategy... you have to triple stint the tires. The Viper is pretty easy on tires compared to the other competitors, 3 stints is the goal."

Ben Keating's primary focus is undoubtedly his GTD program with the Viper in the USA. Le Mans is most likely a 'one and done' appearance for the updated former GTLM (LM GTE AM at Le Mans) car. It was an ambitious effort. In the end of practice, the Viper had qualified a strong 4th in class, lined up on the grid alongside the one surviving Pro class Pratt & Miller Corvette C7R (that was to win the LM GTE PRO class). Matt – "At this time compared to our practice times from we were in 2013, we are probably a good second and a half faster than where we were when the factory was running the car... but the Aston Martins are wicked fast." No surprise that of the top 6 GT cars on the grid (combined between PRO and AM classes), 4 of those 6 cars were Aston Martins. The Astons appeared to have the potential to dominate both of the GT classes, and the competition knew the gloves would have to come off to cope with their speed.

2013 was tinged with tragedy in this class, as Allan Simonsen had lost his life at Tetre Rouge early in the race, his all-Denmark driven Aston Martin #95 of Simonsen/Poulsen/Nygaard having turned straight into the barriers. For 2014 the team regrouped and the all Danish team of Hansson/Poulsen/Thiim won the AM class, and it was a wonderful comeback from a shattering blow. For 2015, the Danes had moved on to race in the GTE-PRO class, and if there was now a sentimental favorite in the AM class, it was the Viper Exchange car given their last minute inclusion and strong qualifying performance.

The Viper led their class for a total of 14 laps, having spent much of the race settled into 6th or 7th place. Approaching the last couple of hours, the car was as high as 4th or 5th on a regular basis. Sadly, at approximately 22-1/2 hours, the transmission failed on the Viper, and unable to effect a rapid repair, the car was retired. Salt in the wound had to be seeing the Lamy/Lauda/Dalla Lana leading AM class car smash into the wall and into retirement soon after the Viper was parked. The Viper had been within range of a possible podium finish, and that had to be a bitter pill to swallow at 90 plus percent of the race distance already completed. In the GTE AM class, the then leading Aston Martin of Pedro Lamy had the fastest race lap, but the 2nd fastest lap had been set by the Jeroen Bleekemolen driven Viper.

It is hard to say if we have seen the last of the Viper at Le Mans, but under any definition, this privateer effort was both laudable and effective. With the challenge of Ford to 2015 champions Corvette Racing in GT for 2016, hopefully the Viper will again return to contend for victory in the world's greatest race. America and the World will be watching.



SUMMARY -

Making it FASTER is the culmination of 40 years of knowledge and experience from Dan Binks, crew chief extraordinaire, and Norm DeWitt, fellow San Diegan and former racer/journalist/author. The result is to bring Dan's incredible wealth of experience, tricks, and tales from 4 decades racing at the highest levels and combine it with Norm's racing and fabrication experience along with access to legendary racers of the past 6 decades. Foreword by Tommy Kendall, the driver most associated with Dan Binks for their success with a number of race teams.

JACK ROUSH - "Norm Dewitt has created a transparent look at what goes on behind the scenes of competitive and contentious motorsports in our generation. He could not have chosen a more relevant and deserving porthole for this look see than one of the all- time great leaders and technicians in the sport of automobile racing than my good friend Danny Binks. A true Racer!"

ULRICH BARETZKY - AUDI SPORT - "This book is written with care and passion. Care means with very careful research work and the care not to ask too much from the reader, may it be an engineer or a motorsport enthusiast. The passion you can feel while reading every single page. It takes you along on a fascinating journey through decades of racing and it makes it hard to stop reading before you have reached the end."

DAVE ROBERTSON - ROBERTSON RACING FORD GT - "This is a must read if you are becoming involved in racing. Team owner/ driver/ mechanic/ fan alike will enjoy this book. The racing life of legendary mechanic Dan Binks told with knowledgeable author (and racer) Norm DeWitt will lead you through the development and evolution of modern race technology. Read the book and you will understand how complex things work. Read the book and you will understand how things came to be. People/ problems/ problem solving/ design/ testing/ de-bugging- it is all here. Race technology made understandable. Some pretty interesting people too!"

AUTOWEEK MAGAZINE - JULY 21, 2014 - "If you like racing (almost any racing from the 1950s on), you will find this book endlessly fascinating. It's a compilation of race-car engineering insights from the great drivers who had to go out on the tracks to see if the cars worked. Almost everyone of note shows up in "Making it Faster," describing the innovations that were good, bad or horrible, all in their own words, as introduced by authors Dan Binks and Norm DeWitt. ... If you're a reader of Autoweek, you must like racing, so you'll love this book."