



CHASE'N RACE'N

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CAJUN SOUTHERN SERIES
DEBUTS AT GMP



MID-ATLANTIC SERIES TAKES
CENTER STAGE IN GEORGIA



HOTSHOEZ
SHOOTOUT

SPEEDWAY DRIFT
DRIVER RANKINGS

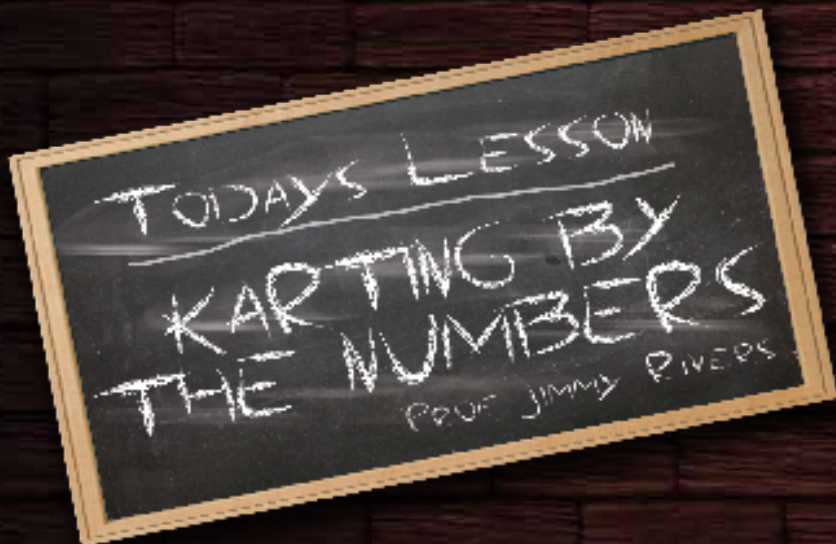
INSIDETRACK
with Phil Combs



Speed Shop Scholar
Karting By The Numbers

Bonus Coverage:

Dynocams Tri-State Pro Series
@ Thunder Valley Motorplex
Plus More!!!



SPEED SHOP SCHOLAR

Welcome to another edition of the "Speed Shop Scholar." This month we are going to dig our heels into a topic that is the subject of almost every racing discussion; Numbers.

Racers everywhere talk about numbers, be it off the scales, the dyno, or the lap times at the track, we all talk about numbers. This month we are going to talk about the validity of those numbers.

Let us begin by discussing the scale numbers. Scale percentages are only as accurate as the setup of the



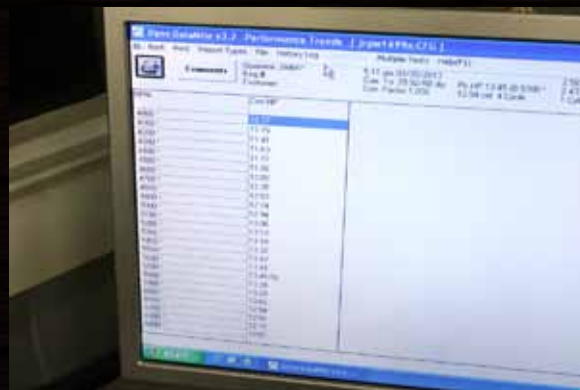
pads themselves. Percentages from an unlevel scale setup are just numbers. Some racers chase their tails around for weeks and weeks because of inaccurate leveling of their scales. Concrete floors are seldom, if ever level enough to produce accurate percentages. The racetrack has an almost zero chance of offering anything level. The answer is to create a perfectly level system for our setups. Mobile platforms, pad levelers, and shims are a few options we can use to produce the accurate, repeatable numbers we need and desire. Not only do the scales need to be level to one another, they need to be level individually. Otherwise, you are only leveling the highest point of each pad to the other pads, and depending upon wheel placement, the numbers will be inaccurate as well as inconsistent.

But how do we verify the numbers? With any precision



measurement, quality gauges are a necessity. Digital levels leave little doubt where you are, and a machinist level is also a great way to verify your setup. Once your scales are perfectly level, your results will repeat week after week. This way, 68% this time is 68% next time, and a set of numbers at the shop is the same set of numbers at the track.

We can verify our camber gauge with a digital level as well. If your camber gauge reads 3' on the right front,



that is 3' off true horizontal. If we place a digital level against the wheel face, it will read 3' off true vertical, giving us a reading of 87'. Be sure to take your readings against a good straight wheel.

Here we go with dyno numbers. This is a major thorn in the side of many engine builders. The truth is, there is not any standard for accuracy with regard to karting



engine dynos. Due to many variables, almost every dyno will give a different reading. Engines are bought every day based upon a claim of a higher number than the last builder. The ONLY way to compare horsepower numbers is to run the engines on the SAME dyno, otherwise, all you have is another number.

I receive calls almost daily asking how much horsepower my engine produces. I try to explain, but have resorted to asking about the high number that I need to beat. With just a couple of keystrokes, I, as well as many other engine builders can double the reading the dyno gives us. Karting dynos are simply a comparator. They are a valuable, essential tool that engine builders use to make sure the output of our engines is up to standards, and to test new ideas. The numbers it gives are for the reference of that builder only. Numbers from one dyno mean absolutely nothing to



anyone else. The builder with the claim of the highest numbers may in reality, have the least powerful engine. In this case, verification is not possible.

Lap time numbers are easily acquired. Here, we have a very valuable tool right there on our steering wheel,



the MyChron. Provided that the trackside beacon is located near the finish line, the numbers we receive will mirror the numbers provided by the transponder at the track. If you are hand timing with a stopwatch, pick a light pole or other non moving object across the track from where you are standing, and with a bit of practice, your numbers will be very accurate as well. Verification here is simple.

Races are won and lost everyday based upon the numbers we work with. Not only do our numbers need to be accurate, they must repeat if we are to be consistent. The best setup, or the highest horsepower claim are worthless



if they are not correct. Take the time necessary to verify the accuracy of all the numbers you use, your lap times will appreciate it. See you next month!

