



AUTOMOTIVE — MEASURING / MODELING

Petty Racing Cut Modeling Time Down from 5 hours to 20 minutes With the FaroArm

— by Jon Babek, Senior Engineer of Special Projects for Petty Enterprises

PROBLEM:

With more than 260 wins and 9 championships spanning four generations of drivers, Richard Petty and Petty Racing have become part of NASCAR history and American folklore.

Petty engineers measure almost every part that goes into building a racecar. We also reverse engineer existing parts to make them lighter, stiffer, or more favorable to each track's racing environment.

In the past, we would develop one or two generic chassis models and maybe five different generic suspension models, then run various combinations of these components around every racetrack. We would measure with a series of tape measures, scales, calipers and levels. This would give us, at best, measurements with 1/32 accuracy. More often than not, the accuracy would be heavily dependent on the person doing the measurement and we would routinely see measured points 1/16 different from one person to another. This was all very time consuming, taking about three hours to measure a chassis and two hours to measure a body.

As the level of competition grew, we needed finer resolution and more accurate models. Our computer simulations grew in complexity so we needed to measure more points and increase the accuracy of our measurements. Both quantity and quality of measurements needed to be substantially increased.

SOLUTION:

At Petty Enterprises, we use a 12 foot, 7-axis FaroArm to measure every single chassis and suspension component. Instead of using generic components when we assemble the model, it is now built with the actual parts that are going to the racetrack that week.

Any of our engineers can now measure a chassis with increased accuracy and repeatability. One person can measure all of the suspension and NASCAR inspection points in about 20 minutes.

ROI:

We chose FARO for three reasons. 1) We've used FaroArms for the past ten years and never had any issues. In our business, we can't afford any downtime and this was a big component of our decision. 2) The software integrates easily with our engineering database and CAD system. 3) FARO support has been excellent. Given their record, we felt we could not go wrong with FARO.

At first, our mechanics and fabricators resisted change, but now, those same mechanics who grumbled about the FaroArm now grumble if they have to measure anything by hand.

Our real product is how we race on Sunday. Using simulation and measuring every component was a strategic decision to give us an advantage over our competitors who either don't have this technology or are not using it to its maximum benefit. This technology gives us that edge.



www.faro.com • 800.736.0234
T H E M E A S U R E O F S U C C E S S