

## WHY ENGINEERING IS VITAL TO YOUR RACING TEAM

Over the last fifty years auto racing has evolved from individuals with general mechanical skills to a highly technical industry. Today, the competitive edge is more a result of the depth and breadth of a team's combined skills from many different fields. Small teams benefit immensely when Engineering is implemented, and large teams strengthen their positions with Engineering.

### John Block Racing Engineer



#### RACING EXPERIENCE:

Engineering Consultant, Mazda Road to Indy USF2000 2015-17  
Engineering Consultant, SCCA Trans-Am GT1 GT3 DSR EP FP FV FF FC 2010-16  
Team Engineer, Guthrie Racing, IRL Indy Light Series 2007 & 2008  
Team Engineer, CLR Racing, ARCA & NASCAR Cup & Trucks 1999-2005  
 Pole position at Talladega 2000, Pole at Daytona 2001  
Team Engineer, Galles Racing, CART Indy Cars; Pole at Indianapolis 500, 1985.  
Mentor/Instructor, LSU, UTEP, Uidaho, UNM Formula SAE teams, 1996-2014.  
Engineering Consultant, Group C Road Racing, 1988-86.  
 Raced first stock cars at age 16 in 1970; built & raced dirt track modifieds from '71 to '74.

#### Engineer/Developer of Racing Computer Software:

- ♦ Honda Engine Builder © 2004.
- ♦ Mustang 5.0 Engine Builder © 2002.
- ♦ Rear End Suspension Geometry © 1997.
- ♦ Computerized Chassis Weights © 1996.
- ♦ Front Suspension Geometry Pro © 1995.
- ♦ McPherson Suspension Geometry © 1995.
- ♦ Engine Shop © 1993.
- ♦ Tire Temps © 1991.
- ♦ Super Performance Software © 1990.

#### Featured and/or Interviewed in the following Magazines:

*Stock Car Racing, Open Wheel, Circle Track, Super Stock, Hot Rod, Car Craft, Turbo, Sports Car, On Track, Bracket Racing USA, Chrysler Power, 4 Wheeler, Mustang Illustrated,*  
 And many more.

#### Author:

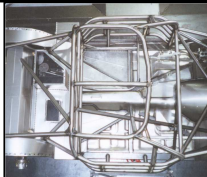
*Data Acquisition* article, *Sportscar* 08-2011  
*Data Acquisition* articles, *Circle Track* Magazine, 12-'04, 1-'05, 3-'06.  
*Cyber Racing* monthly column, *Circle Track* Magazine, 1995-1997.  
*The Racers Guide to Fabricating Shop Equip.*  
 Steve Smith Autosports, 1985

#### Education:

UNM, BA 1977; SDSU, post grad studies Eng 1979  
 Registered E.I., New Mexico, 1989

### Chassis Development

- ♦ Torsional rigidity testing
- ♦ Station sensitivity analysis
- ♦ Element sensitivity review



John also designs and develops test fixtures for performing chassis tests. The benefit of this experience was demonstrated by one chassis's stiffness being increased by 50% with only 9 pounds of tubing.

### Suspension Development

- ♦ Geometric simulations
- ♦ Suspension analysis
- ♦ Geometric development



Besides developing many commercially marketed software packages, John has extensive knowledge and experience in suspension theory. Very typically, John's suspensions have better tire wear in a race than any other car at the race track.

### Driver Development

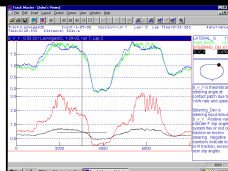
- ♦ Sensory evaluation
- ♦ Cognitive psychology
- ♦ Total performance engineering



Starting his racing career as a driver, John is intimately familiar with the challenges and requirements to develop competitive racecraft. At the professional and semi-pro levels of racing, John has help improved lap times by 3 to 4% with driver develop, alone.

### Data Acquisition

- ♦ Data system operator
- ♦ Data interpretation
- ♦ Parametric analysis



John's experience in creating channels has proven beneficial to driver development and vehicle development. Creating "Engineered Math Channels" has also resulted in monitoring parameters without physical hardware, saving money and weight.

### Track Testing

- ♦ Directing & recording tests
- ♦ Post-test analysis
- ♦ Design of experiments



In addition to standard track testing, John designs and develops test fixtures for performing (at speed) aerodynamic tests on the track. Also, his experience with simultaneous experiments/tests brings added value to track testing.

### Wind Tunnel

- ♦ Test directing
- ♦ Data analysis
- ♦ Body development



Drivers, Crew, and retired racers all have opinions and explanations about aerodynamics. John's wind tunnel experience shows there is a huge gap between popular garage opinion and measured scientific fact.

For more information on Engineering services please call (505) 890-8708 or send email to [Autoware@aol.com](mailto:Autoware@aol.com). Mailing address: 7915 Cliff NW Albuquerque NM 87120-3277