Sucking Amps

Saddle up 374 volts at 2000 amps and hang on for the ride of your life. For John Wayland, shop and life experience working with electric motors have brought both insight and innovation to the street and his sport. Wayland, owner of Plasma Boy Racing and an electric car drag racer with the National Electric Drag Racing Association (www.nedra.com) – where racing classifications for street vehicles are determined by voltage – shared with Motor Age his passion for his sport and the thrill that these street vehicles provide builders, drivers and enthusiasts.

Q: How does electric vehicle drag racing fit and into the world of motorsports?
A: NEDRA was born in March of 1997, so we’re new compared to other types of racing. The association is a coalition of amp-heads – comprised of drag racing fans, electric drag racing vehicle owners and drivers, individuals interested in promoting the sport of electric vehicle (EV) drag racing, EV parts suppliers and manufacturers as well as environmentally concerned companies and individuals. In our first decade, NEDRA has focused on increasing public awareness of EV performance and to grow the sport by implementing advances in EV technology in organized drag racing events across the nation.

Q: In traditional drag racing, the amateur sportsman class is augmented by the professional top fuel, funny car, prostock, and motorcycle classes. How is electric drag racing structured?
A: NEDRA vehicles are categorized by Class and Voltage. There are four classes, each determined by the extent of the vehicle’s modification from daily drivers. Three are for street-drivable vehicles, while one is for all out race cars. For each class, there are 12 stepped-voltage categories, ranging from “Below 24V” to “over 348V.”

Q: What automotive background did you bring to racing electric street vehicles?
A: I didn’t have any formal automotive background. I was interested in cars and electricity when I was young. I had a hot 289 cubic inch Mustang, but gravitated to smaller rides, and then smaller electric cars, like my “White Zombie,” a 1972 Datsun 1200 electric conversion that I drive today on the street and at the track. It’s interesting how life and work interact. My interest in electric vehicles led to my current work servicing electric forklifts and providing training to other technicians. In fact, when I tried to get into the electric forklift business with Crown Forklifts, I was asked for my resume when I applied for my first job. I just told them my resume was sitting in their parking lot. They hired me on the spot. Going full circle, experiences in working in our shop and training in the classroom have both sparked improvements in on-track performance.

Q: The automakers once tried electric cars before, then killed them off. What kept you going when they quit?
A: I was involved with electric cars before the automakers were, and seriously so since 1980. The automakers were forced to make them because of California mandates, but as soon as their lobbyists were
able to get those mandates rolled back, they stopped making them and crushed all the lease returns and those already made but unsold. Today, with some automakers pushing hydrogen, people don’t understand that the cost of using fuel cells to produce hydrogen is three to five times what it takes to charge a battery.

Q: What’s the thrill for you as a driver, your teammates and enthusiasts?
A: Today, I could tell you I’m in it for clean air and oil independence. I am, but it’s always been more than that. It’s still a sport where many participants drive to the drag strip with the very car they’re going to race with. For instance, I drive and race the same car, complete with street tires, against “gassers” that come in on trailers. I’ve raced with the new Chevrolet Corvette Z06, which can do 0 – 60 mph in 3.6 flat, and by 60 mph we’re multiple car lengths ahead. I call it the 1-2-3 punch: I show up with my Datsun, blow their doors off, then tell them it runs on batteries.

Q: How affordable is electric drag racing?
A: From today’s modern electric forklifts to new all-electric vehicles such as the Tesla sports car, they all use state-of-the-art instruments and gauges, controllers and alternating current (AC) drive motors, because they’re more efficient, powerful and safer, as there is no risk of arcing. To get the performance we need for EV drag racing from modern AC technology, the cost-per-vehicle would exceed $100,000. As a result, we use a lot of basic electric forklift parts, as well as “caveman” direct current (DC) drive motors, because that technology is more affordable. Similar to old starters, however, we have the same wear problems with worn brushes and other bits, as well as the risk of arcing – 374 volts at 2,000 amps will do that.

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primary driver, Tim Brehm, who races the
car while I do PR, but the thrill of being part
of this is always amazing. Electric vs. gas
“heads-up” drag racing still has that old-
time feel. In July, for example, we set the
world record and were going nearly 115
mph when the car didn’t shut down at the
end of the quarter-mile, due to a stuck throt-
tle. Under hard braking we laid down 550
feet of rubber, and ground the tires to the
cords. Then we had to pull the “Oh Shit!”
disconnect handle, which shuts down
everything. It’s just like pulling a plug, but
with a light show from the arcing going on
inside the car.

Q: What has been the key to your
success?
A: When the automakers gave up, we stuck
with EV technology and found a way to
make it work - on the street and at the drag
strip. There’s lots of ways to quit early –
that’s easy – but only a few that lead to
success. We persevered. I’ve been fortunate
to surround myself with good quality peo-
ple, such as Marko Mongillo, a maestro
metal shop artisan; Jim Husted, an expert in
DC motor design and repair; Tim Brehm, a
brilliant mechanic and driver; and the rest of
our “Geek Squad.”

Q: How does innovation happen in
your sport?
A: Just like a shop tech can be working
with a tool, find a better way and modify it,
we’re the same. People often mistakenly
assume that it takes big money and big
companies for technology to make the leap
from track to streets. It’s the other way
around in our sport. We’re like NASCAR and
the NHRA in their early days - we’ve gotten
better over the years because we take what
we’ve learned driving on the street and
working in our shop to the track.

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