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# Tech

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## Diver Down



Aircraft Tech risks it all cave diving

## INSIDE:

### Ted Nugent

Let the kids go wild!

### Offshore boat racing

She drives, he throttles

### Buckin' bulls & broken ribs

Inside professional bull riding

Did you say, 'Park that Peterbilt on my toolbox?'



*Pictured are Doug Herbert, left, driver of the Snap-on NHRA Top Fuel dragster, and Al Biland of Snap-on.*

Up to the early 1990s, a person could probably get by as an automotive technician without advanced training. As we know, those days are over.

That's a good thing, because it means the opportunities for qualified technicians are better than ever. Current projections from leading industry analysts estimate that the U.S. automotive aftermarket demand for skilled, trained, and certified automotive technicians will exceed the supply by 35,000 – 50,000 annually between 2005 and 2015. That could amount to a half-million job openings. You are going to be in demand and your earning potential will be better than ever.

Snap-on is committed to providing access and opportunity to training and development to position today's techs to take on tomorrow's challenges. Our affiliation and support of ASE, and our association with leading technical colleges like Universal Technical Institute (UTI) and WyoTech are there because we believe in the future of the profession. Our obligation to the industry is to help make sure it can meet the service demands no matter what technology we find – fuel cell, hybrid power, or advanced internal combustion engine controls. Your Snap-on franchisee is an important resource for training information, along with the products and service you will require.

With *Tech* Magazine, we hope to continue to add value, both personally and professionally. Again, thanks for your business, and thanks for reading.

Al Biland  
Senior VP, Snap-on Incorporated  
President, Snap-on Tools LLC



Cave diving is a unique hobby, but some scuba enthusiasts – including tech Mark Jones – boldly go where few have gone before.

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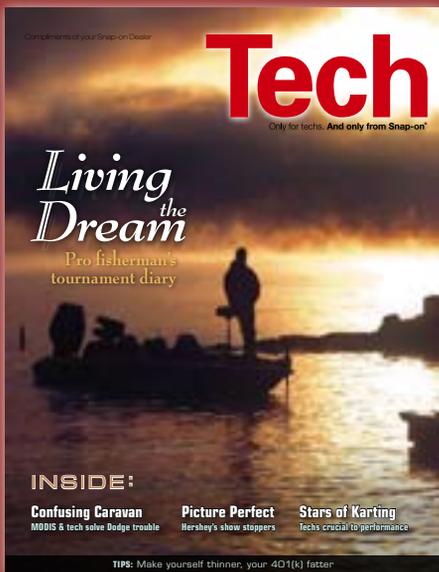
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## Share your story

Do you have a story idea for *Tech* Magazine? If you're willing to share it, we're eager to listen. After all, the best ideas come from those in the field who work as techs every day.

We're looking for all sorts of story ideas – ranging from issues you face on the job to what you and your friends do after hours.

If you have an idea, please drop us a note or send an e-mail.

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*Here are just a few of the reader responses to Tech:*

Excellent! A "Boy's Life" magazine for the industry. Love it.

***Very clean, sharp-looking magazine. Enjoy reading it.***

I think an article on new products from Snap-on would be nice.

***Great magazine. Short, sweet articles are interesting – and free. Thanks.***

This is a good magazine. Keep them coming.

***A nice magazine. One can tell it's high-quality production. Content is very good, and I'm sure you'll keep working to make it – and everything else – better.***

I like the "before" and "after" photos in the restoration pieces. They really add to the stories.

***A good mix of technical and hobby articles. A nice change of pace.***

Learning automotive technology is most important for me. New tools, information – especially computer, electrical diagnosis and how-to are my key points.

***Excellent magazine. Please keep them coming. They're great lunch-time reading material.***

More diagnostics and screen shorts of MODIS/SOLUS would be beneficial.

***This magazine is a great read.***

Really cool magazine. I'll be bugging my Snap-on Dealer for a new one regularly.

# Just for laughs

## A lack of vision

"Who in their right mind would ever need more than 640k of ram?"

– Bill Gates, 1981

"Computers in the future may weigh no more than 1.5 tons."

– Popular Mechanics, forecasting the relentless march of science, 1949

"I think there is a world market for maybe five computers."

– Thomas Watson, chairman of IBM, 1943

"I have traveled the length and breadth of this country and talked with the best people, and I can assure you that data processing is a fad that won't last out the year."

– The editor in charge of business books for Prentice Hall, 1957

"But what ... is it good for?"

– Engineer at the Advanced Computing Systems Division of IBM, 1968, commenting on the microchip

"There is no reason anyone would want a computer in their home."

– Ken Olson, president, chairman and founder of Digital Equipment Corp., 1977



"This 'telephone' has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us."

– Western Union internal memo, 1876

"The wireless music box has no imaginable commercial value. Who would pay for a message sent to nobody in particular?"

– David Sarnoff's associates in response to his urgings for investment in the radio in the 1920s

"The concept is interesting and well-formed, but in order to earn better than a 'C,' the idea must be feasible."

– A Yale University management professor in response to Fred Smith's paper proposing reliable overnight delivery service. (Smith went on to found Federal Express Corp.)

"Who the hell wants to hear actors talk?"

– H.M. Warner, Warner Brothers, 1927

"I'm just glad it'll be Clark Gable who's falling on his face and not Gary Cooper."

– Gary Cooper, on his decision to not take the leading role in "Gone With The Wind"

"We don't like their sound, and guitar music is on the way out."

– Decca Recording Co. rejecting the Beatles, 1962

"Drill for oil? You mean drill into the ground to try and find oil? You're crazy."

– Drillers who Edwin L. Drake tried to enlist to his project to drill for oil in 1859

"Stocks have reached what looks like a permanently high plateau."

– Irving Fisher, Professor of Economics, Yale University, 1929

"Airplanes are interesting toys but of no military value."

– Marecha Ferdinand Foch, Professor of Strategy, Ecole Supérieure de Guerre

"Everything that can be invented has been invented."

– Charles H. Duell, Commissioner, U.S. Office of Patents, 1899

## Finals respect

A man named Fred had tickets to game 7 of the Stanley Cup Finals, right at center ice. As Fred sat down, a man came and asked him if anyone was going to occupy the seat next to him.

"No," said Fred, "sit right down. The seat will be empty."

"That's incredible!" said the man. "Who in

their right mind would reserve a seat like this for the Stanley Cup and then not use it?"

Fred said, "Well, actually, the seat belongs to me. I was supposed to come with my wife, but she passed away. This is the first Stanley Cup we haven't been to together since we got married nearly 50 years ago."

"Oh... I'm sorry to hear that. That's terrible. But couldn't you find someone else - a friend or relative, or even a neighbor - to take her seat?"

Fred shook his head sadly. "No. They're all at the funeral."



## You need a new car when...

- You pull over to let a fire truck go by, and it stops behind you.
- You have to go to a repair shop every thousand miles to get the duct tape replaced.
- You accidentally drive into a junkyard, drive out, and get accused of stealing.
- The Blue Book lists your car under "Health Risk."
- The only thing holding your bumper on is the "Bush/Quayle '88" sticker.
- You return to your car and find someone broke in and left a hundred dollars and a new stereo.
- Evel Kneivel refuses a free lift.
- The valet puts on a crash helmet and full-body armor before parking your car.

## Words of wisdom

"Sometimes I wonder whether the world is being run by smart people who are putting us on, or by imbeciles who really mean it."

– Mark Twain

"Suppose you were an idiot. And suppose you were a member of Congress. But I repeat myself."

– Mark Twain



## Don't take This Girl out for dinner

**T**hink you can eat 26 grilled cheese sandwiches in one sitting? Try doing it in 10 minutes!

That's just what 100-pound Sonya Thomas (second from right above) did at the World Grilled Cheese Eating Championship, recently held at a New York restaurant.

The deceptively diminutive Thomas is well known on the competitive eating circuit as "the Black Widow." She currently holds several world eating records, including 46 dozen oysters in 10 minutes, 11 pounds of cheesecake in 9 minutes, 48 chicken tacos in 11 minutes, 37 hot dogs and

buns in 12 minutes and 56 hamburgers in 8 minutes.

Thomas attributes her incredible food-to-stature ratio to a naturally large stomach.

"I could have done better," she said, after missing her goal of 30 sandwiches. Can someone please pass the Tums?



## Atlanta's New Aquarium

The Georgia Aquarium, which opened last November, is a must-see if you like the ocean and marine life. It is the world's largest aquarium, with over 8 million gallons of water holding 100,000 animals from 500 species.

The main attraction – the "Ocean Voyager" tank – holds more than 6 million gallons of salt water. You can actually go "inside" the tank by way of a 100-foot long underwater tunnel. The sensation is that of being completely submerged (but still dry, of course) with thousands of marine animals, some just inches away. You may find yourself closer to the jaws of a live Great White shark than you ever imagined – and still live to tell about it.

If that's a little too much reality, you can also view this gigantic tank through the main window; it's a two-foot thick acrylic wall that is 23 feet tall by 61 feet wide, making it the second largest aquarium viewing window in the world.

[georgiaaquarium.org](http://georgiaaquarium.org)

## Colorado River Rafting

In the swift world of whitewater rafting, the ultimate experience can be found on the Colorado River. For generations, the mighty river, with its fearsome reputation, was known to swallow whole expeditions, leaving only boat fragments. Nowadays, thanks to scores of commercial outfitters, novices and landlubbers can safely take in the majesty of the

Colorado River on group-sized rafts equipped with inflatable pontoons. And while the extreme kayakers and adventurers can still satisfy their thrill addiction, saner people can enjoy a thrilling yet safe trip they will remember long after their clothes dry.

The Colorado River is overpowering. It winds through 1,450 miles of mountains and deserts, supplies water to more than 25 million people, and helps to irrigate 3.5 million acres of land. In the Grand Canyon alone, the river covers 280 miles and has more than 150 named rapids – including many class 4 and some class 5. For more information, and a database of local guides, visit [nps.gov](http://nps.gov) or [Utah.com](http://Utah.com).



### Whitewater levels of difficulty:

**Class 1:** no rapids, smooth flowing water

**Class 2:** some rough water; the line is easy to see and pursue

**Class 3:** whitewater but very safe for larger rafts; kayakers and canoeists should have good rolling or self-rescue skills

**Class 4:** whitewater for experienced paddlers only; the route through the rapids may require quick maneuvering

**Class 5:** whitewater for advanced paddlers; scouting the rapids may be required, and there may be hidden hazards that require precise maneuvering

**Class 6:** impassable or exploratory; for teams of experts, taking all safety precautions

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# FLYING HIGH

BALLOONING IS TECH'S SIDE BUSINESS - AND PASSION



A company promotion more than a decade ago ballooned into a lucrative side business for Steve Black.

The Wichita, Kan., tech was working in the service department of Amoco Oil Co. in the early 1990s when the business launched an auto repair program. To compete would take a savvy advertising strategy, and Amoco executives decided to fly a hot air balloon over the city to draw attention to the program.

Black volunteered to help with the balloon launch and a new passion was born. "I became interested, my wife became interested, soon we learned to fly and by 1992, we bought our own balloon," he said.

Now a technician for Yost Automotive, Black and his wife, Lucy, own two hot air balloons. The couple uses the larger – a 90,000-cubic-foot balloon – for their side business, Freeflight Inc., launching up to 100 rides annually.

"You have to like early mornings," Black said. "Flights take off at sunrise, so ballooning isn't for everyone."

Black, a tech with 27 years of experience, would have to spend too much time away from his family to become a full-time balloonist. But the part-time status doesn't take away from his enthusiasm for the hobby.

"People always ask what is the neatest or worst experience I've had flying, and I really don't know the answer," he said. "Every flight is a new, different and exciting experience."



# LANDING in THE DRIVER'S SEAT

**B**y day, Shane Smith fixes trucks. But when the shift ends, he rides them. Hard.

Smith, 42, opened his repair shop – South Dayton Auto & Truck Service – in Ohio four years ago.

His friend, veteran monster truck driver Bobby Holman, became one of Smith's best customers.

About a year ago, when one of Holman's drivers unexpectedly quit, he turned to Smith, who jumped at the opportunity to get behind the wheel.

"The excitement of being out there on that arena floor, performing in front of a crowd keeps me coming back," Smith said.

Since his first event, Smith has become obsessed with the sport and Venom, the 2003 Chevy S-10 with a 540 cu. in. Chevy big block he drives every weekend.

Smith and Holman usually take off on Wednesday or Thursday and head to monster

truck events, sometimes traveling over 2,000 miles round trip.

"All I do is drive," he said. "We probably run 35 to 40 weekends each year, traveling all over the world." Recently, Smith and Holman traveled to the Island of Curacao in the Caribbean for 15 days to take part in a monster truck event.

"I worked on cars and trucks for so many years, but I never thought I would be in the driver's seat," Smith said, adding that before his first event he was more nervous than he had ever been in his life.

"I still get a little jittery. Even guys that have been driving a monster truck for a long time get that way. Once that stops, it's time to quit."



## Tech takes up bagpipes; kilt question remains

**T**imothy Fleming heard a local bagpipe band was forming, and he showed up at practice to see what all the fuss was about.

That was nine years ago. Today, Fleming, 44, of Stroudsburg, Pa., has not only mastered the drums and bagpipes, he is also the director of the Pocono Region Pipes and Drums Band.

"I just wanted to wear a kilt," he said with a laugh. "And part of it was the heritage. I'm Irish and I've always loved the music and the pipes."

The 25-member band, with players ranging in age from 8 to 60, performs at weddings, funerals, VFW and American Legion fund-raisers and about 15 parades per year.

The group has developed quite a following. "For some reason, the people in a little town one county over have really taken to us," Fleming said. "They know you, whether you have your kilt on or not."

Fleming's kilt is the source of one of the most common questions he gets regarding the band.

"Everyone wants to know what I wear underneath," he said, adding that the answer is a closely guarded secret. "I tell them if they want to know, they are going to have to check for themselves."

Over the last nine years Fleming, lead technician for the East Stroudsburg Area School District, has tried to get his co-workers to join the band.

Fleming's fiancé, Denise Hayes, also gave the band a try and was hooked in a hurry. For Hayes, who comes from a Scottish background, it was about heritage too, Fleming said.

The couple is working out wedding details, but one thing is certain: They won't have to look far for a band.





# SOAP BOX RACERS

**B**ruce Hunsicker's love of the soap box derby goes beyond his participation in the sport, which began more than 40 years ago. Hunsicker, an ASE certified technician in Barberton, Ohio, has loved to tinker since he took apart and reassembled bicycles as a child. He now uses his tech skills to refurbish soap box derby cars and keep the history of his beloved hobby alive.

His interest in refurbishing the cars started while working as a volunteer at a derby event. He poked around the picnic grounds at a post-derby gathering and came across an old derby car, which was in poor condition.

"It was the 1935 Akron champion car that someone had found in a barn," Hunsicker said. Despite the condition, Hunsicker saw potential. "I didn't restore it, because that implies it's in pristine condition," he said. "I refurbished it."

All-American Soap Box Derby members now take the car to local malls to generate interest in the races. The antique also caught the attention of old derby car owners, many of whom passed their heirlooms on to Hunsicker. He now has refurbished 78 derby cars.



"I have local championship cars, and some that took a place on the national level," he said. "I tell people who have an old car, 'Don't throw it out! It's history.' I don't buy the cars, but if people want them refurbished, I do that."

Hunsicker's love of the sport pushes him to keep its history alive. But make no mistake: refurbishing the cars takes plenty of work. Sometimes the research is a job in itself.

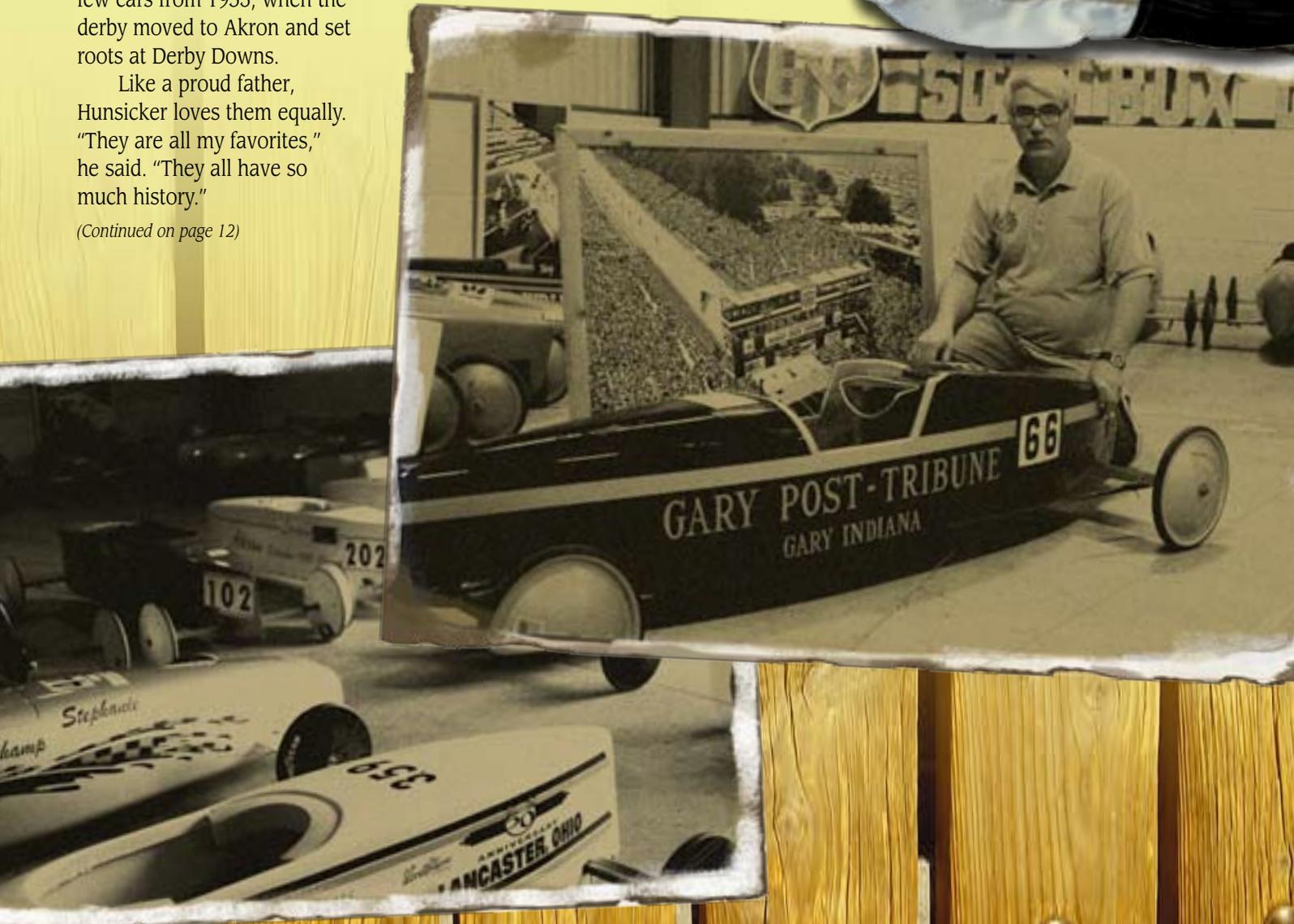
The cars can be in such poor condition that Hunsicker can't determine much about their original appearance. Photos help, but they're not always available.

"It takes a bit of detective work," Hunsicker said. "I go to the library and look for coverage in old newspapers. Depending on the year of the car, I can figure out the style of car, the steering mechanism, the materials used."

Original paint and sponsor names on the car also help fill in the gaps. The oldest refurbished car dates to 1933, the first year of the soap box derby in Dayton. He has a few cars from 1935, when the derby moved to Akron and set roots at Derby Downs.

Like a proud father, Hunsicker loves them equally. "They are all my favorites," he said. "They all have so much history."

*(Continued on page 12)*



## LONG HISTORY, BRIGHT FUTURE

Hunsicker has been involved in the derby for decades. He built his first car in 1960 and raced it in 1961, just short of his 12th birthday. He continued racing through the summer of 1965.

"I never won a thing," he said. "I finished third every single year in my heat (of three). But it gets under your skin. This is one sport where you can be the greatest athlete, but when you get in the cars, it's a level playing field."

Hunsicker's son didn't race, but his grandson does. And the entire family has joined in Hunsicker's derby passion: The National Super Kids Classic.

"There is a whole segment of kids – special needs kids – who couldn't participate in the derby," Hunsicker said. That changed in 1981, with the first Super Kids Classic in Akron. Specially designed cars accommodate two children, one of whom is a special needs child. Hunsicker became involved with Super Kids in 1989.

"You work with these kids and you're hooked," he said. "There is no reason a kid with disabilities can't experience things we all experience."

Hunsicker serves as the race director for both the Akron local Super Kids race and the National Super Kids race, now in its fourth year. As of early this year, 60 children had signed up to participate on the national level.

Most weekends find Hunsicker deep in derby administrative business. He continues to refurbish cars as well.

He often puts in a full day as a tech and afterward, "I'll work on my hobby until midnight," Hunsicker said. "With any hobby, you have to make sacrifices. I sacrifice sleep and food." 🍷

## DERBY DISH: HOW TO GET INVOLVED

Anyone interested in the All American Soap Box Derby can write the group.

### All American Soap Box Derby

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Akron, Ohio 44306

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Fax: (330) 733-1370

E-Mail AASBD Headquarters: [soapbox@asbd.org](mailto:soapbox@asbd.org)

Website: [www.asbd.com](http://www.asbd.com)

To find a local race near you, check out the website <http://asbd.com>.

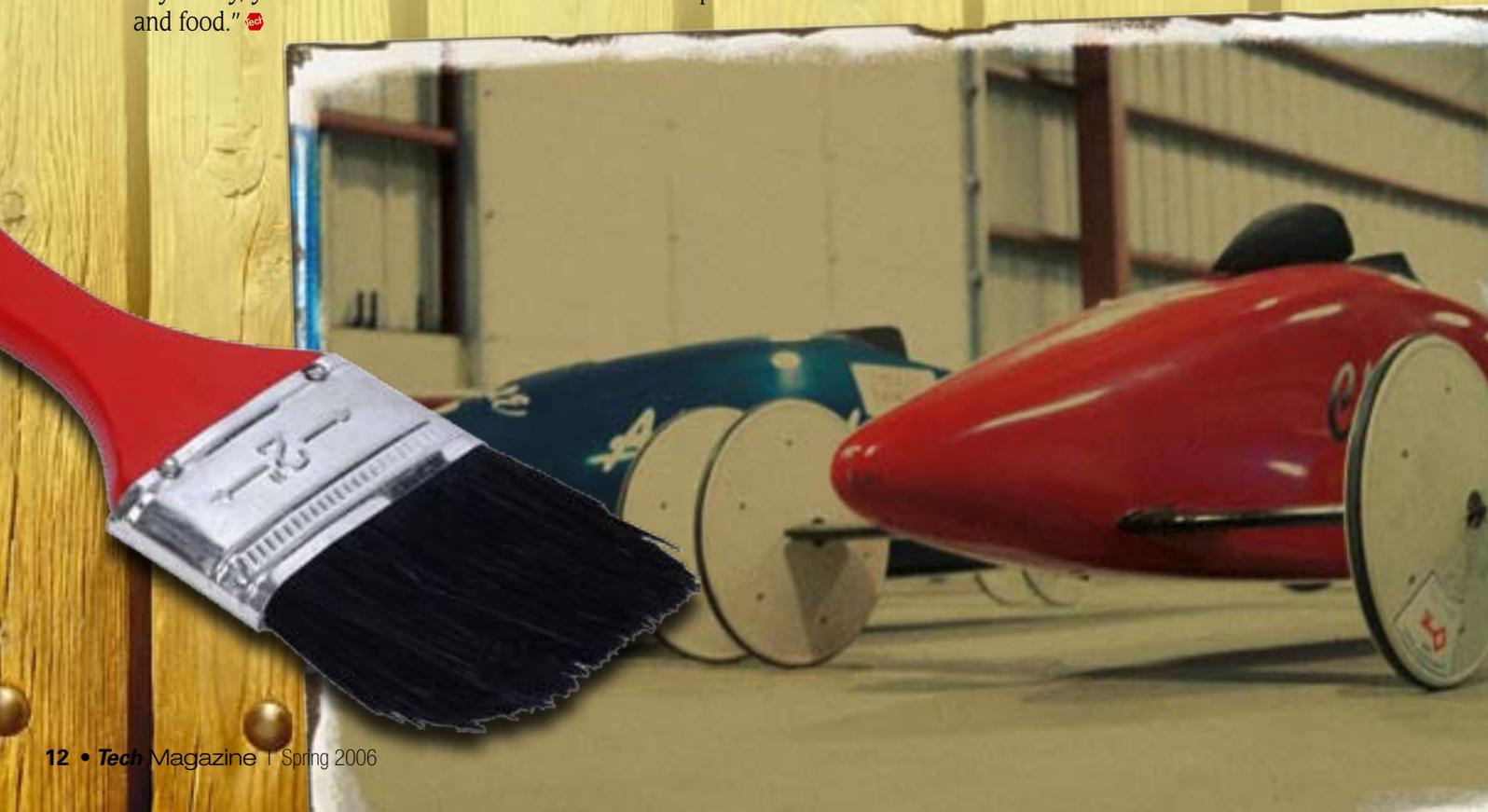
Under "Community" click "Race City Websites"

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JOURNAL

# SOAP BOX RACERS

# GO-TO GUYS



Experienced techs help build the future by passing their knowledge to students



**K**nowing how to diagnose and repair a car is one thing. Teaching others how to do the same is quite another. For technicians who exchange their tool belts for grade books, the joy of seeing their students grasp complex automotive concepts is just one of the rewards that makes the life of an automotive technical teacher worthwhile.

"It's hard to do something different after you've been in a field for a while," said Gerald Gregory, who was a technician for 18 years before joining the teaching staff at the NASCAR Technical Institute in Mooresville, N.C., three years ago. "I made a good living as a technician. I took a pay cut to teach. But I wanted to look further down the road, and teaching is an outlet for me to pass along the knowledge I do have."

Gregory isn't alone. Of the eight NTI teachers who shared their stories, all expressed a desire to share their experiences in the classroom, where many can learn from one.

And NTI certainly isn't the only school where techs have chosen to pass their knowledge to the next generation. But in many ways, it is typical of the forces that drive techs to "give back," often as they reach the end of their own careers.

"A lot of instructors (at NTI) were the go-to guys in their shops," said Al Gore, who wanted to stay in the automotive field but found the physical demands of the job increasingly problematic. "Our students are getting the cumulative experience of all their instructors. They have 100-plus years of experience to draw on."

#### First teachers stick in their minds

For some of the instructors, fond memories of their early teachers have stuck with them through the years. They see teaching as a way to have that kind of impact on someone else.

Tony Lambiase's automotive career started when he was 13, when he swept the floors part-time at a local shop. He started there full-time the Monday after graduating from a vocational high

school in Connecticut.

"I think about the influence teachers had on me in school, and it is gratifying to realize that you're having that same effect on someone else," said Lambiase, a tech with 20 years of automotive experience.

Scott Poltorak spent 26 years working at three different Chrysler dealerships, many times being paired with a younger technician.

"I liked helping the younger technicians at the dealerships," said Poltorak, who has been teaching for the past three years. "I remember when I started out. I went to an automotive school in Ohio, and when I got out, I remember an older guy who helped me along the way. I never forgot him."

#### Real-world experience

The practical experience that these instructors bring to their jobs is both a requirement of the school and a bonus to the students. "Students know that I bring them real-world experiences," said Howard Slade, whose background is in both automotive and airplane

*(Continued on page 16)*

Tony Lambiase

Howard Slade



diagnostics and repair. "I can tell them, 'This is something I saw in the real world. Doing this will help you earn more money.'"

Poltorak agrees. "The work experience you have is about 90 percent of what you teach," he said. "Anyone can stand up there and read a Powerpoint. You can't really show someone unless you've done it. Someone who has done it, and done it a long time, is key."

Lambiase adds: "The school has a very good program, but it also takes experience and knowledge of a topic in order to teach people. You have to remember that these concepts are new to them."

### The power to change lives

Jim DeHart was a technician for 15 years before venturing into teaching. "I always wanted the opportunity to teach, but I wasn't able to go to college," said DeHart, who teaches advanced diagnostics at NTI.

"Now that I've been teaching for 2-1/2 years, I can't see doing anything else. Not at all. The thought never crosses my mind."

Teaching, he says, allows him to make a difference. "Students come back to me and let me know how they're doing," he said. "They come back to say thanks."

Jeff Adams came to work at NTI by way of Petty Enterprises and, before that, 15 years with dealerships. He said that in some ways, his job in racing prepared him for his teaching experience. "With racing, you have to love it," he said. "It is not about the money. The same thing with teaching. It's about having someone tell you, 'What you taught me helped me get where I am today.'"

Said Lambiase: "We can explain a concept in class, but when a student can come back to you and say, 'I was able to find a car's problem, and it was exactly how you told me it would be,' then you know you've enhanced someone's career."

Certainly, teaching isn't without its challenges.

"You have to remember that you're not in the shop," said Jeff Covington, who teaches power trains and electronics after working 20 years as a technician. "You have to realize who you're talking to and their skill level." While there are challenges, the techs say they are tiny compared with the rewards.

"I look forward to my work every day," said DeHart. "It makes my quality of life better."

"I drive 68 miles one way to go to work," Adams said. "It would be hard to go that far for a job you don't love." 



# SOLE BROTHER



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# CURVE BALL

Substitute coolant  
sensor value  
difficult to  
detect



By John Anello  
Auto Tech On Wheels  
<http://www.autotechonwheels.com/>

**I** was called to a shop with a complaint of a “check engine light” on a 1995 Dodge Neon 2.0L engine. The shop was swamped with a lot of work and only had time to do a preliminary check on the car. A quick scan on initial start-up showed a stored coolant sensor circuit fault, but the shop insisted that everything looked good in the datastream. They were in no position to throw parts at the car, so they decided to call me in for a second opinion.

When I arrived at the shop, the engine was already warm and the instrument panel showed a temperature gauge with a proper engine temp operation, along with a “check engine light” on (Figure #1). The coolant fan was also running all the time, but the engine did not seem like it was boiling over or even running too hot. The ECM was allowing the coolant fan to run constantly as a default mode for a coolant sensor circuit error. This would, in turn, keep the engine from overheating due to the ECM’s inability to determine proper coolant temp operation.

John Anello

# >> MODIS



Figure 1

I hooked up my MODIS to retrieve the engine codes (Figure #2). Only one code stored: a code 22, indicating a low coolant voltage reading. The coolant sensor reference voltage had reached a threshold level that was below the allowable range. This could indicate a partially shorted signal line to ground, bad coolant sensor or even an engine that was severely overheating.

What the garage was unaware of was this particular system had the capability to substitute a coolant sensor value in the datastream if a circuit fault was detected. When a coolant sensor code is stored, the coolant temp value seen in the datastream is not a true value, but the sensor voltage reading will reflect the true reading (figure #3). The voltage reading of 500mV was below the ECM threshold for coolant temp operation.

To prove out the data voltage reading, I needed to go to the sensor (Figure #4) to test the wiring using the component test mode of the MODIS. The component tests available in the MODIS allow a user to save the time involved with resorting to a PC information system. It provides component operation, specs and pin information at your fingertips.

By simply scrolling into the voltage test mode, I was able to find a voltage vs. temp chart to compare my

*(Continued on page 20)*



Figure 2

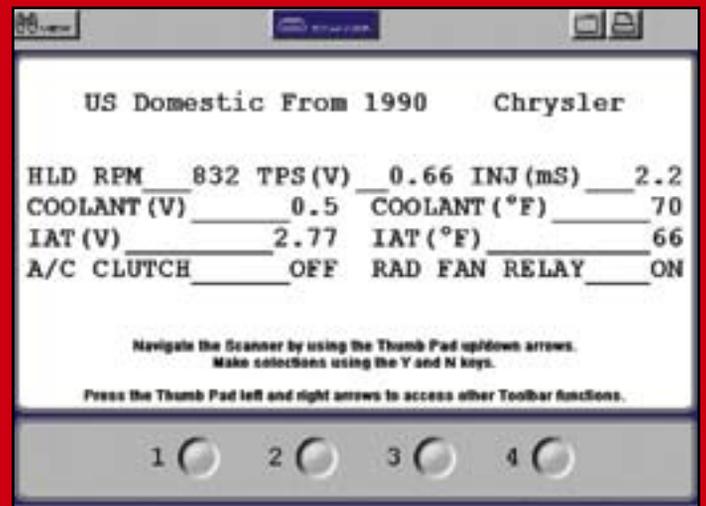


Figure 3

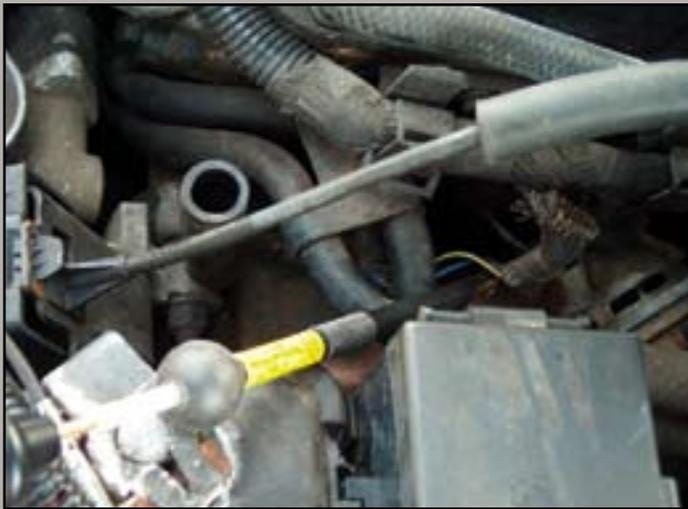


Figure 4

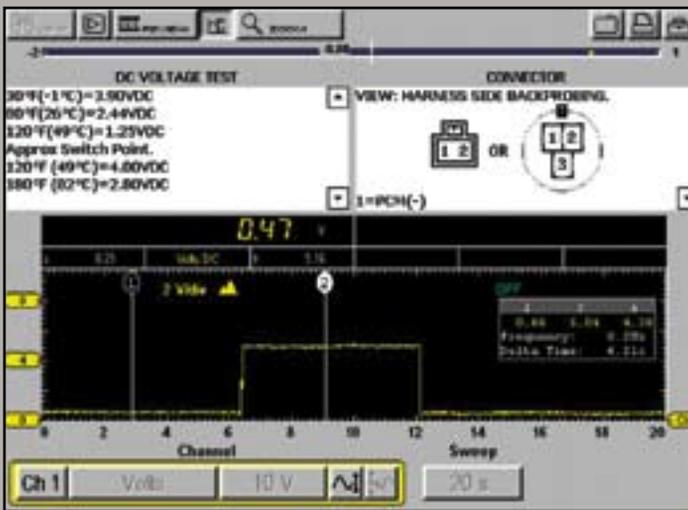


Figure 5



Figure 6

CTS value. At proper operating temperature, the voltage should have been around 2.8 volts after the second pull-up resistor was used within the ECM. The first pull-up resistor is used during engine warm-up, and after about 120 degrees the second pull-up resistor within the ECM is used.

This is done for better accuracy of the sensor. While graphing the coolant sensor voltage reading, I pulled the CTS connector to see if the CTS signal line would reach close to 5 volts (Figure #5). This was just an integrity check to see if the ECM was supplying the proper 5-volt signal and to test a partial short-to-ground in the signal line.

I next moved to a resistance check of the sensor (Figure #6) to validate the integrity of the sensor resistor. It is not uncommon to find a bad ECM with an internal ref voltage circuit that will falter under load when attached to a sensor. The value was about 264 ohms, compared to the MODIS information screen – which indicated 640 ohms for 212 degrees of operation. This was well below the allowed resistance spec, which pulled the signal line too close to ground. The culprit here was a bad coolant sensor.

This vehicle used a dual action coolant sensor (Figure #7) that provided a coolant sensor reading and a coolant temp gauge reading. The garage was surprised to see that the temp gauge read fine, and yet half of the sensor was no good. They also were side-tracked by the sensor substituted value and fell into a trap.

Having the right equipment, proper information and knowledge of the system you are working on are the keys to successful diagnostics, and this is what the MODIS can provide. Hope you enjoyed the story. 📖

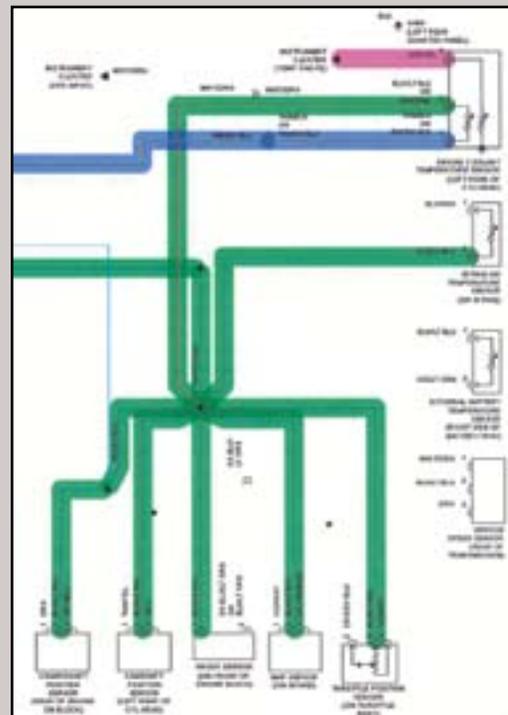


Figure 7

## SOFTWARE BUNDLE 6.2

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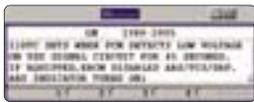
- > Snap-on Hand Held Diagnostic Platforms and Software Bundles include the Most Up-to-date Domestic, Asian Import, European (if Activated) and Troubleshooter software
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- > Fast-to-Market Late Model Coverage
- > Deep Coverage of Older Models
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### TROUBLESHOOTER SOFTWARE

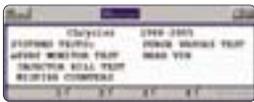
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- > Answers for over 500 New Domestic Engine Configurations
- > On-the-job Training for 501 New Asian Import ABS Systems
- > New and Updated Code Tips with Integrated Live Data
- > Fast-Track Data Scan Offers Component Operation Info, Expected Ranges, Specifications and Live Data
- > Experienced-based Information for 2004 CAN Engines
- > TSBs Updated through 2004

### VEHICLE COMMUNICATION SOFTWARE

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- > 1996-2005 Ford Transmission Functional Tests
- > 2001 and Newer (non-CAN) Chrysler EVAP System Self Test
- > Kelsey Hayes 4WAL ABS Codes and Data
  - 1994-1997 Dodge Full Size Trucks and Vans
  - 1994-1996 Dodge Dakota
- > 2002-2005 Ford and GM Tire Pressure Monitor Systems
- > 2005 VW/Audi Vehicle Communication Software



- > ASE-certified and factory technicians reveal time saving, money making tips in the Troubleshooter software.



- > Powerful new tests speed you through the diagnosis, including a Chrysler EVAP System Self-test, which simulates readiness and generates codes, so you confirm the repair, not your customer.



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# SPURRING

## Professional Bull Riding

The bulls are big, but the growth numbers are even bigger: Bull riding is the nation's fastest growing sport.

Not convinced? Consider a few statistics. Viewership of Professional Bull Riders Inc. (PBR) events climbed from 34 million in 1998 to 104 million in 2004. Attendance at events increased 72 percent between 2002 and 2004.

Why? It might be because we can relate to the riders more than other sports figures, says Sean Gleason, chief operating officer of the PBR.

"PBR fans come from diverse demographic groups, but the inherent characteristics that make PBR the toughest sport on dirt have a special appeal to blue collar workers across America," Gleason says. "Whether it's the determination and never-quit attitude of the cowboy athletes, or the raw nature of the sport itself, working men can relate to the PBR where other sports have effectively excluded them from the target audience."

Interested? You can learn more about bull riding at [pbrnow.com](http://pbrnow.com). The contests are routinely broadcast on OLN. Check your local listings or visit [olntv.com](http://olntv.com).

And of course you can scan through the next four pages of *Tech*. Two of the nation's top bull riders, Justin McBride and Ross Coleman, offer some professional and personal words of wisdom.

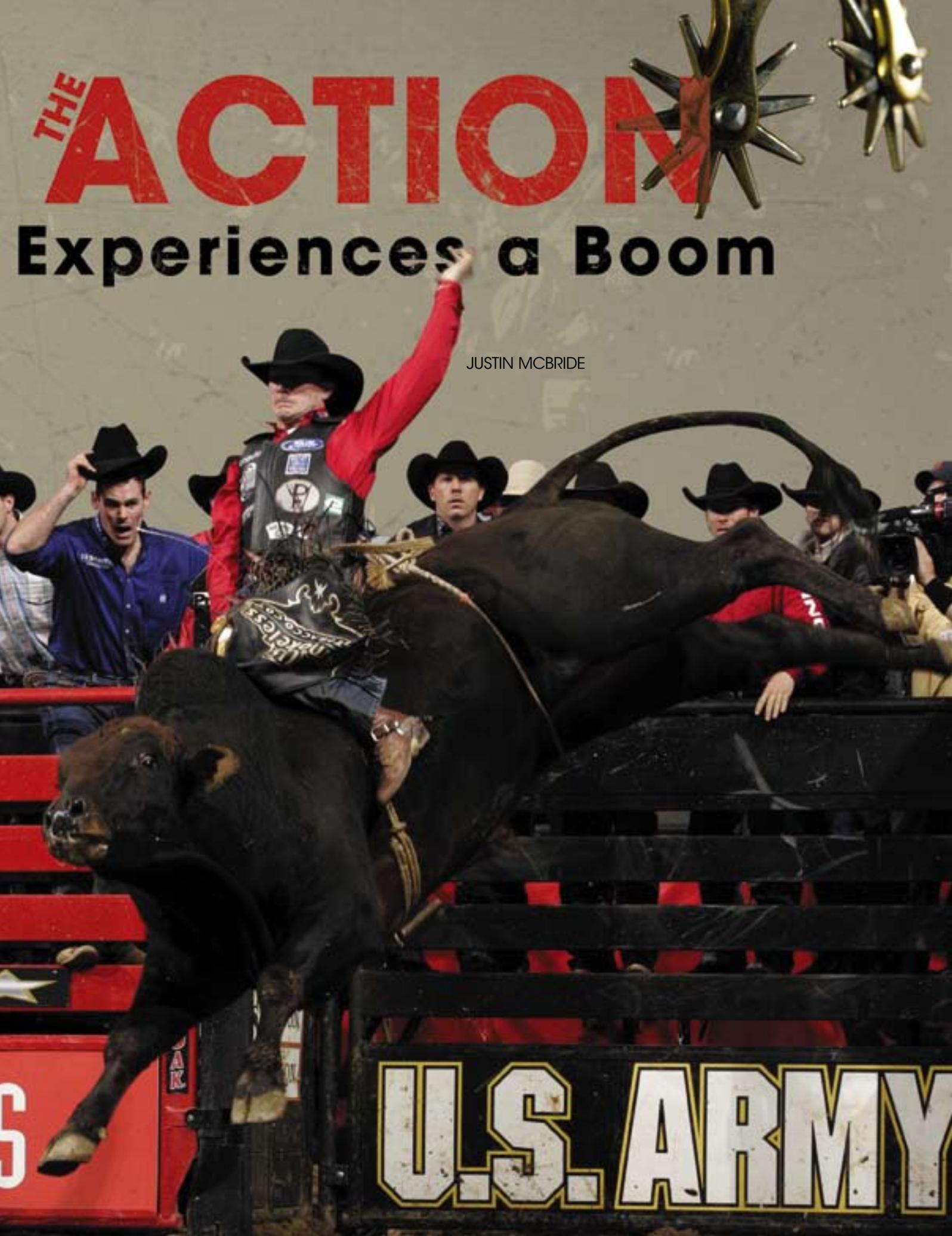
If you're not already watching, maybe it's time to start. Why buck the trend?



# THE ACTION

## Experiences a Boom

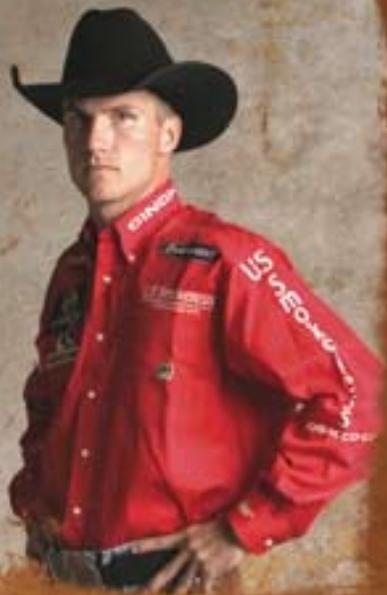
JUSTIN MCBRIDE



U.S. ARMY

# JUSTIN MCBRIDE

REIGNING WORLD CHAMPION



**HOMETOWN:** Elk City, Okla.

**AGE:** 26

**HEIGHT:** 5' 8"

**WEIGHT:** 140

**FAMILY:** Wife, Jill; baby on the way

**2005 EARNINGS:** \$1.53 million

**CAREER EARNINGS:** \$2.9 million

**HOW I STARTED:**

Riding calves during branding. My dad and grandpa both rode, so I pretty much followed in their footsteps.

**I KNEW I HAD MADE IT BIG WHEN:**

I got my gold buckle. (McBride won bull riding's top prize last year.)

**MY FAVORITE MOMENT IN COMPETITION:**

The last ride at the PBR World Finals in '05. It all came down to one ride.

**MY WORST:**

Getting bucked off Mossy Oak Mudslinger in 2003. I might have won the whole shooting match if I had been able to stay on.

**PEOPLE WOULD BE SURPRISED THAT:**

I like to read.

"I'VE BEEN ABLE  
TO LIVE A LIFE  
THAT I ALWAYS  
DREAMED OF."

**Do rodeo stars get injured as much as people think?**

Definitely, but people don't notice it as much because bull riders go ahead and compete with injuries.

**The worst spill I ever took was:**

at Grand Rapids, Mich., in 2003. I got bucked off, and stomped on the chest. I broke three ribs and punctured my lung.

**Outside interests:**

Hunting, fishing and ranching.

**If I didn't have a career on the circuit, I would be:**

a ranch cowboy.

**How do you occupy your time on the plane as you travel from one event to another?**

I read a lot and sleep. I read novels - whatever I find at the airport that sounds interesting.

**The famous person I would most like to get on a bull:**

Michael Jordan. They always said that Ty Murray (seven-time all-around cowboy in the Professional Rodeo Cowboys Association and the current president of the Professional Bull Riders) was the Michael Jordan of rodeo, but I never saw Michael Jordan play a hockey game, a basketball game and a football game all in the same night. Ty competed in bareback riding, saddle bronc riding and bull riding all in the same night. I'd like to see Michael Jordan try the same thing in other sports. He could probably do it because he's such a great athlete.

**To stay in shape I:**

Ride horses when I'm at home and work around the ranch.

**Someone I look up to is:**

My dad. Ever since I was a little kid following him around, he's been my hero. He's a cowboy and that's all I ever wanted to be. He's pretty much John Wayne to me.

**True or false: I have won drinks riding a mechanical bull in a bar:**

False.

**True or false: I have bought drinks after losing a bet over riding a mechanical bull in a bar:**

False, but playing pool is another story.

**Are the guys on the circuit as tough as most people would think?**

Tougher.

**The thing I want people to remember about me:**

That every time I showed up I tried to win.

**What is the most important preparation for a bull ride?**

Being mentally focused on the task at hand, and to not be thinking about anything else. Physically, I do a lot of stretching. Any time you crawl on the back of an 1,800-pound bull you have the opportunity to pull or strain something. Stretching helps prevent that.

**What's going on the last 20 seconds before they open the gate?**

I'm wrapping my bull rope around my hand. Instincts take over. After you've done it so many times you just do it without even thinking about what you're doing.

**What has the sport of bull riding given to you?**

I've been able to live a life that I always dreamed of. The PBR is the greatest thing that ever happened to bull riding. I've made a lot of friends in and out of the arena. I've got some of the greatest sponsors like U.S. Smokeless Tobacco Company, Mossy Oak and Cinch Jeans. They've given me an opportunity to prepare for my future and take care of my family.



# ROSS COLEMAN

PBR SUPERSTAR



**HOMETOWN:** Molalla, Ore.

**AGE:** 27

**HEIGHT:** 6' 1"

**WEIGHT:** 175

**FAMILY:** Single (long-time girlfriend Amy Lee). Parents Kathy and Steve Coleman; three sisters: Christy, Kim and Bridgett; one brother, Mitch

**2005 EARNINGS:** \$95,572.88

**CAREER EARNINGS:** \$1,043,007.24

**HOW I GOT STARTED:**

I rode my first calf when I was 7 - the same year I won my first buckle. My whole family is into ranching and rodeo. It's always been a way of life for us. My dad competed in bareback riding and rode bulls a little.

**I KNEW I HAD MADE IT BIG WHEN:**

I qualified for the first PBR finals in 1999. That was a big moment for me. I made the short go that year and rode Whitewater (one of the greatest bulls in the history of bull riding). From there on, my parents said the PBR is a pretty awesome deal.

**MY FAVORITE MOMENT IN COMPETITION:**

Riding Jerry Nelson's bull Tuff-E-Nuff in the Mossy Oak Shoot Out Bonus round at the 2001 Columbus, Ohio, PBR event. (The \$100,000 bonus remains the greatest payout for a single ride in PBR history.)

**MY WORST:**

Everything's been pretty positive. Getting stepped on in Pueblo and having three broken ribs was pretty painful.

**PEOPLE WOULD BE SURPRISED THAT:**

I snowboard and wakeboard. I listen to hard rock and rap music when I work out.

**Do rodeo stars get injured as much as people think?**

Just as much or more. Being a cowboy is a dangerous job, on the ranch or in the arena. Especially riding bulls, you know you're going to get hurt. Everything about rodeo and bull riding is worth every broken bone. It's still the best sport I could ever be a part of. We love it so much we're willing to sacrifice our bodies and put it on the line every time.

**Have you had any tough injuries?**

The broken ribs I had last year were pretty painful. I've also dislocated both shoulders, had a broken leg and had a broken collarbone, and had a couple of pretty serious concussions, hyper-extended an elbow and tweaked my knee one time. That's a pretty short list of injuries compared to some of the guys who have been around longer.

**What's the greatest thing about a qualified ride?**

We have some of the greatest fans in the PBR and hearing them cheer for you really pumps you up. I have some great sponsors in U.S. Smokeless Tobacco Company, Bud Light, Enterprise Rent A Car, Cinch Jeans and Paradise Farms Bucking Bulls. When I ride a bull, I don't just do it for me, I do it for my family, the fans and my sponsors.

**Outside interests:**

Snowboarding, wakeboarding, ranching and working with horses a lot. I've been working with some young horses, and get a kick out of that, riding and training. I've been getting into the bucking bull business too. I own a bull named Dakota Country that is on the PBR tour. I've got some cows that I'm hoping to raise bucking bulls out of.

**If I didn't have a career on the circuit, I would:**

be ranching, working with horses and raising bucking bulls.

**How do you occupy your time on the plane?**

I read, watch movies, spend time with Amy, or sleep.

**The famous person I would most like to get on a bull:**

Dale Earnhardt Jr. He's not only famous, he's also a buddy of mine and he told me that he'd like to get on a bull. I'd like to see that happen.



**To stay in shape I:**

ride horses and work around the ranch or go to the gym. I do cardio and a lot of sit-ups to work on my core strength.

**People I look up to are:**

my Dad, Ty Murray and Cody Lambert. Those three guys are hard workers, they are champions and everybody in the sport has respect for them.

**True or false: I have won drinks riding a mechanical bull in a bar:**

False.

**True or false: I have bought drinks after losing a bet over riding a mechanical bull in a bar:**

False, we try to stay away from those mechanical bulls.

**Are the guys on the circuit as tough as most people would think?**

Watch the PBR on OLN and you'll see how tough they are. Most of them aren't very big guys and pound for pound, they are the toughest guys I've met in my life.

**The thing I want people to remember about me:**

That day in and day out every time I nod my head, I try 110 percent, no matter what; that I was raised right and am a true cowboy.

**What is the most important preparation for a bull ride?**

Be mentally prepared and strong. You have to believe in yourself and have the confidence to know you can get the job done.

**What's going on the last 20 seconds before they open the gate?**

We are working to get the bull situated right in the chute, and getting ready to go and be a step ahead of the bull. You need to be prepared to make your moves jump-for-jump with his.

**What has the sport of bull riding given to you?**

It's pretty much supported me my whole life and will until the day I retire, and hopefully after that if I stay in the bull business. I try not to take it all for granted.

# To IRA or *not* to IRA

## What's the status of your retirement savings?

If you're itching to save for retirement but a 401(k) isn't available, try three other letters: I.R.A.

More powerful but less liquid than a regular bank savings account, individual retirement accounts, like 401(k) plans, offer some tax advantages. There are restrictions on how much you can contribute and when you can access those funds, but given the alternative, not saving at all, those restrictions are minor. Many techs need to rely on IRAs because not all shops routinely offer other retirement options.

Help establishing an IRA is just around the corner. "Any financial institution, such as a local bank, an online financial site or a brokerage branch office [like Fidelity Investments, Charles Schwab or Price Waterhouse Coopers] can help you set up an IRA," said Owen Malcolm, a certified financial planner with Sanders Financial Management in suburban Atlanta. "You can open one with maybe as little as \$500, definitely as little as \$1,000."

The trickiest part of opening an IRA is figuring out where you want to invest.

"The only limit . . . would be one imposed by your financial institution," Malcolm said. "A local bank, for example, may not have every investment option open to you." Remember, an IRA is the type of account, not the investment vehicle. Your IRA contributions can be invested in stocks, bonds, mutual funds, certificates of deposit or any mix that you select.

"Know ahead of time what type you want," Malcolm said. "What is your investment style? Are you more conservative? Then a CD might be right for you. A mutual fund is more diverse. And lifestyle funds (that change the core investment strategy as you move through different phases of your life) are also a good option."

Malcolm says the next step after establishing an IRA is making sure you feed it regularly. "Chances are an employer may not divert funds from your paycheck to your IRA, like they can with a company-sponsored 401(k)," he said. "Try to set up a bank draft that pays the fund every so often. Pay yourself first. Make your deposits automatic, so you don't forget and aren't tempted to skip a payment."





## Limits to IRAs

### ACCORDING TO IRS GUIDELINES:

- You may qualify to deduct some or all of your IRA contributions for your tax year.
- If you have access to a 401(k) at work, you can still make contributions to an IRA, but those contributions aren't tax-deductible for some individuals based on income.
- In 2006, individuals may contribute up to \$4,000 to a traditional IRA. Those 50 and older may contribute up to \$5,000.
- Anyone who starts withdrawing money before age 59 ½ will pay income tax and penalties on that withdrawal, unless it's used for a first-time home purchase or higher education. In those last two circumstances, income tax would be assessed, but the penalty is waived.
- With a traditional IRA, you must start taking withdrawals no later than age 70 ½. You will be taxed on both the earnings and your original contributions.

## And then there's the Roth

A relative newcomer to the investment world, the Roth IRA is similar to a traditional IRA in that it is a way to save for retirement outside the workplace. Here are the highlights:

- A Roth IRA offers tax-free and penalty-free qualified withdrawals.
- Your contributions, unlike a regular IRA, aren't deductible on your tax return.
- You may not qualify to open a Roth IRA, depending on your income.
- You aren't required to take distributions at age 70 ½.

"A Roth IRA certainly, I think, is the best choice," Malcolm said. "Not only is it tax-free but you aren't forced to take your withdrawals (at age 70 ½, like traditional IRAs). No matter how much money you put in, you pay no taxes," he said. 🍷

# Where Few Have Gone Before



## Cave exploration rewarding – and dangerous

**A**fter exploring the ocean for more than a decade, Mark Jones decided it was time to take it to the next level.

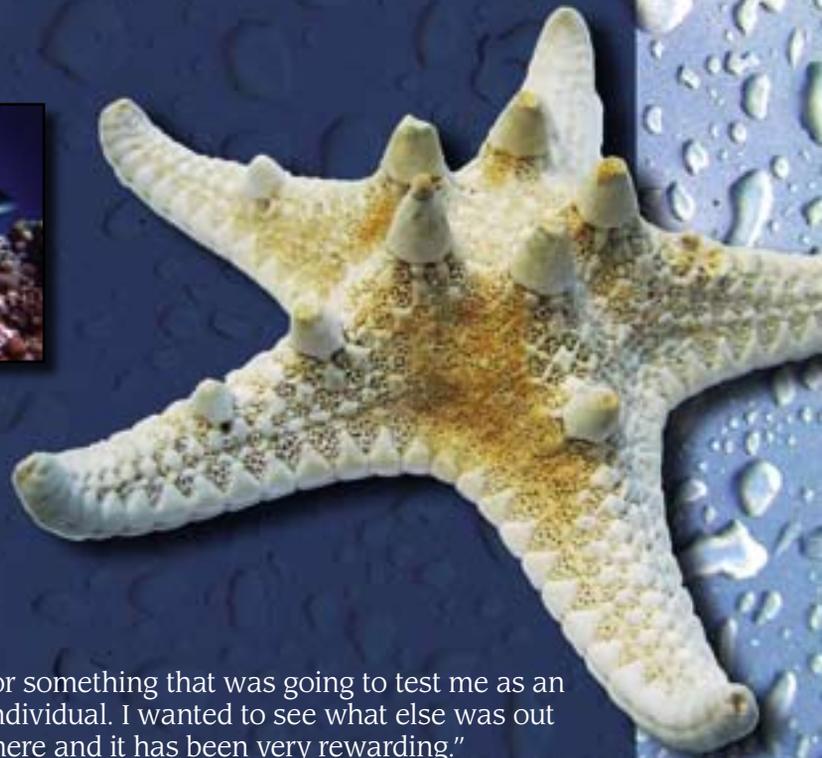
Aircraft technician Jones, 47, of Winfield, Kan., became certified to scuba dive while in college, but hung up his flippers after about 15 years, bored with the sport.

Several years later Jones decided to give diving another chance. Only this time, he wanted to attempt what only about 2 percent of divers have tried: cave diving.

"It takes very extensive certification and is

one of the most extremely dangerous sports out there," said Jones, whose day-time duties as a final assembly technician for General Electric's aviation division include overhauling Blackhawk and Apache helicopters. "But it is so neat being in a place that 99 percent of people in the world don't get to see. Either they don't have the nerve, or they aren't stupid enough, to attempt it."

Jones received nine certifications and now spends his weekends diving into flooded caves. He typically dives with three friends he met in a



certification class, sometimes exploring spaces so narrow that his air tanks scrape the ceiling while his stomach drags along the bottom.

In Missouri, where the group typically dives, the caves are deep – they hit depths of 300 feet – which means some dives last up to four hours.

One of Jones' favorites is a 210-foot former lead and zinc mine in Missouri that filled with water in the 1940s.

"I don't do it for the thrill and I'm not an adrenaline junkie," he said. "I was just looking

for something that was going to test me as an individual. I wanted to see what else was out there and it has been very rewarding."

Jones' dives typically go well; however, two years ago he and a friend had a scare while diving Cannonball Cave in Lake Wapappello, Mo.

Jones and his fellow divers dropped 240 feet into a pit. Obscure tunnels in the cave made it impossible to see and the group was separated. For what seemed like hours, Jones and another diver tried to find their way back to



the mainline.

Eventually they did. While they were never in dire danger, the experience served as a wakeup call to Jones.

"I was probably getting a little complacent, but you can bet since that happened I haven't been," he said, adding that not everyone is as lucky. "I lost a good friend of mine two years ago. I wasn't on the dive, but I was supposed to be. I guess he just made too many mistakes."

Despite the loss, Jones and his partners continue to dive, although he admits they have slowed down a bit recently.

"It is just such an awesome experience, the architecture formed by nature is really amazing," he said. "As long as we can remain safe with each other and are enjoying ourselves, we'll keep going." 🍷



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# How to inspire a child into the wild

by Ted Nugent



**M**y dad was a hunter when I was born in 1948. It was still a powerful, natural, common sense, American way of life back then. Dad really enjoyed his quiet, peaceful bow hunting time afield and made it a point to share it with his family.

He had quit gun hunting by the time I was 10 because of a terrible firearm accident that almost killed him. Some dufus had touched off a round from his Winchester M94, 30-30 levergun, while unloading it in the back seat of a '52 Ford coupe, and nearly took my dad's head clean off. Another inch, and I would have been a single-parent kid. Mindless, idiotic *negligence* is still the only way to be injured or die from a gun "accident." He stressed this to us, making it a point to clearly differentiate accidents from negligence. I thank him for that to this day.

But it was the adventure of our "Up North" family treks each fall that fanned the flames of my predatory and conservation spirit. It was the big woods of the North Country and the occasional sighting of all wildlife, small and big game, especially the majestic, always

elusive whitetail deer, that brought me much adrenaline dumpage. Each sound, sight, smell and feeling beyond the pavement zinged straight into my heart and soul. I needed very little motivation from anyone or anything outside my own interests in animals and habitat. The woods, rivers, fields, and the wind called my name clearly.

Growing up along the wild-ground of the River Rouge outside Detroit, my fascination with wildlife and hunting was something that could not be defused. I was hooked. Something about the dynamic of each critter encounter drove me wild. The fact that my dad was already experimenting with this brand new bow hunting concept was just an added kicker. My river stalking days with slingshot and bow and arrow imprinted deeply into my psyche from day one, and between my dad, uncles John and Dick, and Fred Bear, I had all the role modeling a kid could ask for.

It is interesting to note that my brothers Jeff and John, and younger sister Kathy, though a part of every hunting trip and outing, showed no more than a passing interest in the sport. We all had grand times together, learning about family camp life and nature lessons. But they could, quite frankly, take it or leave it.

Meanwhile, I breathed every breath for a plunge into the wild at every opportunity. Every day after school, while the other kids were playing ball-sports, tag, hide-n-seek or so many other normal kid's games, I was stalking the river banks trying to get close to pheasant, quail, ducks, squirrels, possum, coons, skunks, rabbits, and all sorts of birds and other wildlife. There was a marshy area at the river bend we called Skunk Hollow. I knew every wonderful mucky inch of the place.

So what is the difference between one kid and another, when all experiences might be basically the same, that drives one to hunt but not the other? Many moms and dads across the country have asked me how to get their kids into hunting, and I can only tell them what my own experiences have shown. My best hunting buddies are my own two sons, 22 year old Toby and 9 year old Rocco. They accompany me on many outings, and we have shared many a powerful moment together seeking game.

But there was no formula that I adhered to. Rather, it was a deeply thought out process along the way in order to optimize the chances that they would pursue this outdoor lifestyle with me, that has brought me so much enjoyment, excitement, happiness and

*(Continued on page 32)*



gratification. All life comes from beyond the pavement, and our call to stewardship of these precious life-giving renewable resources runs strong and deep. For if a father fails to bring these lessons of reality and elements of accountability into his family's life, what good has he accomplished?

Certainly, my exhilaration upon merely seeing game is contagious. I have made it a point to raise my family on wonderful, game rich wild-ground, thereby maximizing the sightings that can be shared and talked about together. The first word out of my kid's mouths has always been "deer" as they pointed out the window or along a trail together with mom and dad. Watching wildlife shows on TV together as a family and exploring easy access wild-ground as often as possible brings the dynamic of wildlife encounters to the forefront of children's young minds. As wildlife habitat faces the growing curse of development and destruction, these beyond-the-pavement areas for introduction are becoming harder and harder to find and access. This is why efforts and programs to save wild-ground are so important today. Join DU, RMEF, Pheasants Forever, Trout Unlimited,

Quail Unlimited and any other organization you can afford. Habitat progress is job one!

Most importantly, I did not push my children to hunt. I always made it available to them, even gently prodding and encouraging them to join me every time I went afield, but never to the point of force or pressure. I shared the thrills of each and every hunt in stories and photos, and made it a point to let them know every night at the dinner table, "you should have been there! It was really cool!"

Over the years, I tried to get them to join me on the easier maneuvers. Break them in gently. Comfortable temperatures and conditions were always more alluring than stormy, wet, cold and nasty mornings in the duckblind! But I did make it a point to let them experience the joys of nature's wrath as well. There is nothing more wonderful than coming back to a warm, cozy cabin or lodge or tent, wet, cold and beat, changing into fresh, dry clothes and sipping a steaming bowl of soup or chili around a roaring fireplace or campfire. That is heaven on earth and everybody enjoys it immensely. They always gaze into the fire and hear the call.

As my children grow up, they spend more and more time hunting with their dear old dad. Toby and I have a duck opener ritual that means the world to me. And Rocco and I sneak up the same ridge at daybreak every September 15th, opening day of squirrel season. Toby loves packing into elk camp, and the whole family looks forward to our annual African safari. I can't really enjoy a hunt for more than a week if my clan is not with me. I feel unfulfilled and I get homesick for them.

*The young mind you  
help guide to true north  
now, will be the warrior  
for the wild, his or her  
entire life. I'll bet on it.  
And never let up.*



I read a story in an airline magazine here recently, about a successful executive's attempt to connect with his son by taking him on a hunting trip, much to the boy's protest. The old man ended up arguing with his son, hunting alone, then opting to take a big buck's photo instead of killing it, as if this merciful gesture would somehow bring he and his son closer. BALDERDASH! It was even clearly articulated in the story how over populated and destructive the deer were in northern Illinois, the scene of the episode, and the desperate and essential need to reduce the herd responsibly. It did fail miserably in detailing the truth about habitat needs and the fundamental function of man and beast, balancing their natural roles in the inescapable cycle of life and death. His "non-consumptive" gesture was denial in action.

Contrary to this politically correct pap, bold, honest lessons in life's cycle of reality will connect deeply with a young child. Be sure to read the wildlife reports from scientific publications and note relative observations when driving the highways. Watch the Discovery Channel nature specials together and never let fantasy or denial become acceptable. Show your love and passion for outdoor time, and it will be contagious. I see it all the time, not only with young boys, but equally with little girls too. Now that's a thrill!





If your kid spends more than 30 minutes a day in front of the TV set, watching programs or playing zombie inducing video games, you are asking for trouble. If you can't remember the last Saturday you took the family to a wild place, early and long, you are asking for trouble. If you can't talk with your kids because they have headphones glued to their ears, you are out of their loop, and may I dare say, a failing parent. If you don't have quality time discussing the little things in your lives together at the dinner table each night, you are missing out on one of the most powerful opportunities to connect that there is in life.

Hunting the fine state of Texas each year for many years, I have come to greatly appreciate their laws encouraging parents to take young children hunting. You see, Texas has the very best laws regarding minimum ages for hunting. There is no minimum age! It is a proven fact, that if a child does not hunt by the time he is 9 or 10, it is unlikely that he or she ever will pursue an outdoor life. That is catastrophic. Every year in Texas, I meet families that enjoy hunting together with 4-, 5- and 6-year olds, who kill deer with rifles at these young ages. No accidents. No injuries. No problems. With a custom fitted .223, 6mm or .243, these little whippersnappers take deer cleanly and regularly.

Just like the scientists and medical community now admit, responsible parenting begins in the womb. Nightly bed songs, gentle readings, loving talk from both parents and siblings, forms a prebirth bond that will most certainly connect with this new life. It is never too early.

### **THERE IS NO GREATER RESPONSIBILITY THAN PARENTING! PERIOD.**

Immediately after birth, there is an initial explosion of brain synapses. Synaptic connections continue powerfully through adolescence, according to a recent study from the University of Chicago. The experts generally agree, that if this initial touch is lost or not fully taken advantage of, strong learning influences can be made up for later. Some areas of the brain, such as the pre-frontal cortex, where higher thought, reasoning, judgment and motivation come from, will be best molded by a parent's loving touch throughout adolescence. *But*, a really good parent wouldn't miss out on any of these opportunities to provide the most positive conditions possible for their child.

And according to this old dad, it never stops. The time to share

the excitement of the wild with your kids is now! The earlier, the better. The most meaningful impact will be made in their first five years. My mind burns with graphic excitement, envisioning my family's woodland walks, riverbank picnics, sunrise celebrations and wildlife encounters with bow and arrow or .22 rifle in hand. Be sure to make that extra effort to conduct those ever-so-valuable wild lessons out there beyond the pavement for the entire family as often as you can. Earmark special weekends. Pack a lunch and a camera. Go slow. Take it all in. Nature will do the rest.

Provide nature oriented toys and learning materials. Share your enthusiasm for the wild. If you are going to rent videos, rent quality hunting and wildlife tapes and watch along, reviewing the statements and content for details and better understanding.

Other reports show how children who have had little or no meaningful touch with mom and/or dad, are much more likely to lead a life of crime, substance abuse, unfulfilled sadness, and usually a horrible, tragic early death. To know the remedy for this tragedy, yet fail to respond, is the worst sin of mankind.

The young mind you help guide to *true north* now, will be the warrior for the wild, his or her entire life. I'll bet on it. And never let up.

With simple, good parenting, fueled by good old-fashioned love and affection, you will develop the greatest hunting partner you could ever ask for. The wild needs the next generation, and the next generation needs the wild. Strong and free.

So take a youngster into the wild as soon and as often as you can. Get'em shooting, exploring and throbbing. Now! 



# THUMBS UP

**Safety team helps keep track safe**



Wis. Drivers can sustain injuries, cars can catch fire or crash. Even spectators can suffer anything from heat stroke to serious illnesses.

“Our jobs entail hours of boredom and moments of terror,” said Jeffrey Gauer, M.D., the head of the medical staff who works closely with the Safety Team.

To keep track of things, over a dozen cameras posted around the course allow dispatchers to monitor every inch of track. If there is an accident, the fleet of safety vehicles includes fully equipped trucks, mini-ambulances and even a full-sized pumper fire truck. If a spectator or racer suffers a heart attack, eight defibrillators are on hand.

And then there are the members of the Safety Team, the orange-suited emergency responders, ready to extinguish fires, triage injured drivers and clean up crashes.

They also take care of the more routine matters around the track, from towing cars out of the pea gravel runoff pits at the corners to cleaning debris off the track.

Most members are trained EMTs and have full-time jobs or volunteer jobs with their communities’ fire departments. They work at Road America during their free time.

“This place is noted for its safety,” said Carson

## at Road America

**It’s shaping up to be a good day at the racetrack. Vintage and historic cars are racing this weekend – exciting to watch but hardly the fearless daredevils of the racing world.**

Even the weather is cooperating. The late summer sun shines warm, not scorching hot. These are all very good signs for the members of the Safety Team at Road America, who will be bundled in thick fire-resistant suits and stationed around the track for the next 11 hours.

Even on the most perfect of days, though, it’s an open-ended job, keeping things safe at this enormous four-mile racetrack, situated amid the rolling hills near Elkhart Lake,

Wilkinson, the track’s safety director. “But if the equipment or the driver fails, we have to be ready to move.

“So far, we have.”

Safety is a wily pursuit, perhaps evident on a racetrack more than anywhere else, where horrible crashes can occur on the straightaways, where a bit of oil on the track can cause the most sound equipment to fail – and the best drivers to suffer paralyzing injuries.

Even assumptions, like this quiet on a summer morn, can prove dreadfully false.

That’s why Wilkinson, and the nine members of the Safety Team stationed around the track, are guardedly optimistic.

They all remember what happened last time the Vintage Sports Car Drivers Association came to Road America only a few months back, and the 17-car pileup that was one of the worst accidents at the track in recent memory.

That day, only seconds into the race, a chain reaction crash occurred. “Cars were stacked three high,” Wilkinson recalled. “There were small fires, leaking gas and leaking oil, the huge potential for trouble.”

At once, the Safety Team sprang into action, putting out fires, treating drivers and calling in forklifts, wreckers and tiltbeds to clear the debris. Safety Team veteran Jay Peartree was in command during the situation; he was well-trained for the post, as his full-time job is training firefighters at a nearby technical college.



This chain-reaction crash was one of the worst ever at the track.

Fortunately there were no serious injuries – only one broken arm among all the drivers involved. Almost as amazing was the Safety Team’s swift response: It took only 58 minutes to clear the accident from the track. Races resumed one hour after the crash.

“Given the magnitude of the accident, that was just amazing,” Wilkinson said.

The team is rightfully proud of the way they handled the emergency.

“It was no different than at a fire scene,” Peartree said, noting that the team employs the same chain of command model as a conventional fire department. “That’s why it works so well.”

Indeed, the Safety Team leaves nothing to chance: The crew has developed a 35-page emergency action plan, covering everything from routine oil spills to tornadoes and terrorist bombs.

Only on rare occasions is it necessary to halt a race in order to clean up the track. Usually, the races continue while the members of the Safety Team go about their work. Typically three-member teams are stationed at three points on the track; each team is responsible for over a mile of track.

The Safety Team members must each purchase their own fire-resistant suit, \$500 apiece, as well as shoes and gloves. They wear the suits at all times.

“If a car is fully engulfed, we dive in and get the driver out,” team member Jeff Twohig said matter-of-factly. He did admit that on a summer day, “You can’t imagine anything hotter.”

Next year, they are adding helmets to their ensemble.

While each member of the team is paid a daily stipend, they don’t commit their summer weekends here for the money. Nor do many seem interested in the outcome of the races, though one member said casually, “We sometimes can hear the winners announced over the loudspeaker.”

Peartree, who spends up to 70 days every summer at the track, says he is proud not only of how the group responds in emergencies, but also to the mundane aspects of work – for example, towing cars out of the gravel pit.

“At other tracks, they’ll throw a strap on a car without any thought,” he said. “We try not to damage the car more than it already is. We take pride in doing our job, and doing it well.”

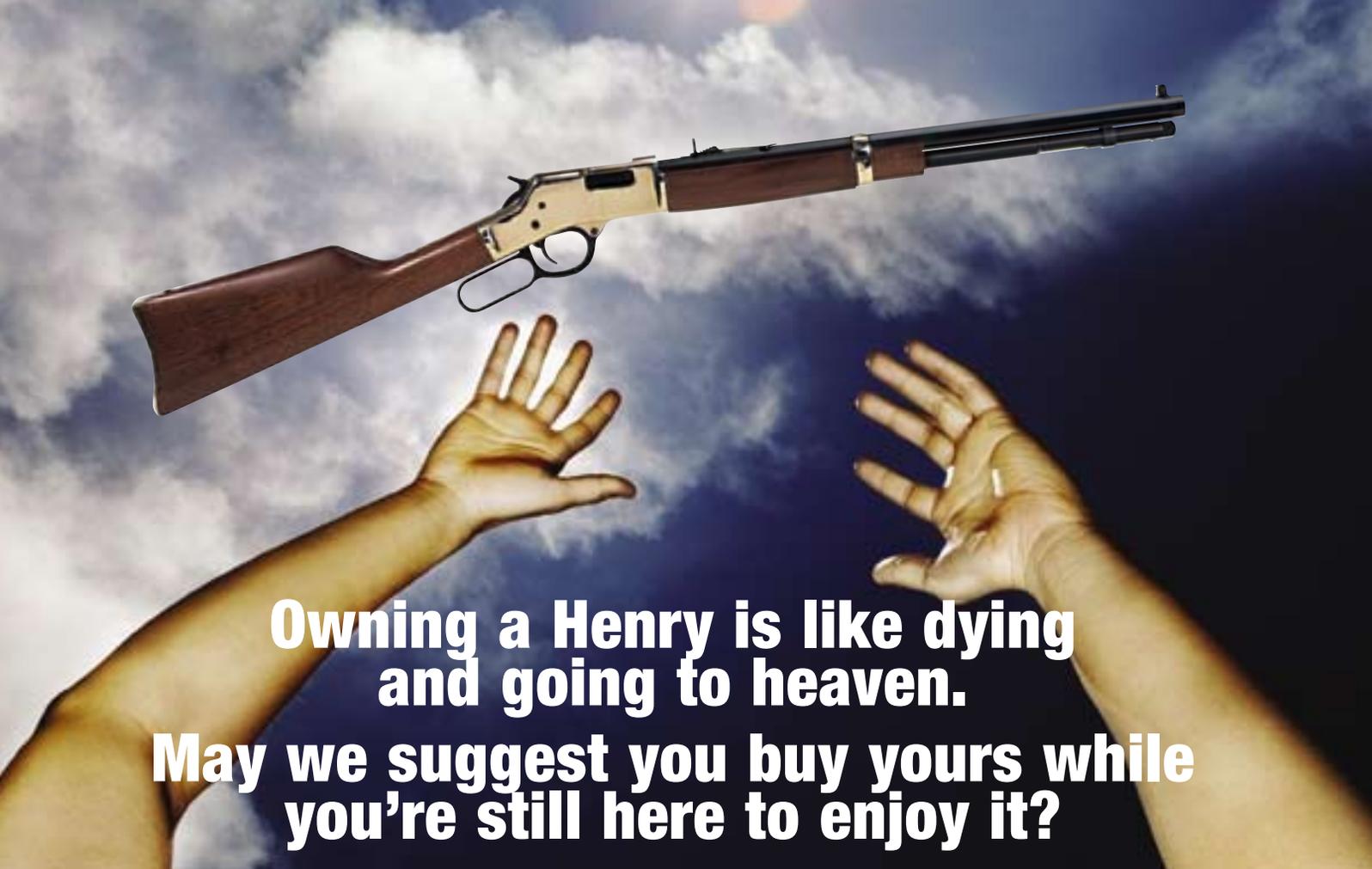
The group has developed a deep camaraderie, forged both through crisis and the hours upon hours of togetherness, joking around, feeding the squirrels that live by the track and enjoying the beauty of a summer day.

“It’s a little more exciting than being part of the Kiwanis,” Peartree said.

And there is the relief that comes at the end of a day well spent. The vintage racers had a fine day and a glitch-free weekend at Road America.

When the Historic Production cars made their final race that Sunday afternoon – the Mustangs, Corvettes, Cobras and Jaguars involved in the infamous crash earlier that season – the dispatchers and everyone in the control room put their hands together in a round of applause.

Everyone, save Safety Director Carson Wilkinson. “It’s what I expect from a race like this,” he said with a smile. 🍷



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TECH



# FU

**F**or most *Tech* readers, there's probably a huge disconnect between the visual image of two people winning a world championship in a high-flying, 1000-hp offshore power boat and two farm-raised kids from Canada. That scenario might be even more difficult to envision if you consider that one of the two is a woman, and she drives the boat.

Brian and Wilma Ross were high school sweethearts in their hometown of Alsask, Sask., current population 178. They married in 1975, and Brian worked as a journeyman auto tech before joining Snap-on, while Wilma worked as a nurse and kept the books for the Esso station Brian managed.

### The early years

They bought a Cessna 172 just for fun, later upgrading to a 182RG and purchasing a 28-foot Bayliner. Kept at Vancouver Island, the boat was primarily used for weekend scuba diving excursions. When they were transferred

to Toronto, the boat was placed at a marina on Georgian Bay, three hours north by car, 40 minutes by plane. There, Brian and Wilma discovered the existence of poker runs on water, similar to the dry land versions run by car clubs.

Brian had experienced the promotional attraction of motorsports, but had his eyes opened to new possibilities when he observed customer reaction to a very large, brightly painted, high-powered offshore power boat. He crafted a business plan and was instrumental in acquiring a 38-ft. Wellcraft Scarab, a replica of the boats used on the *Miami Vice* TV show.

Along with the experience and exposure gained from poker running, one promotional boat led to another. In the early days, Wilma stayed onshore to help fund the venture by selling apparel. Lured by the attraction of being on the water with Brian, that soon changed. Their appreciation of high-horsepower offshore boating grew quickly.

### Stepping up

When the American Power Boat Association (APBA) staged a 1997 event in Toronto, Brian and Wilma decided to enter the "L" or local class. During these events, the area's poker runners and others with a competitive void have a chance to strut their stuff. Brian planned to drive and throttle. Wilma offered to navigate. While leading their amateur fleet, a drive broke. For Brian and Wilma, the bug had bit and bit hard. There was no turning back. As Wilma says, "We went home with some unfinished business."

Racing in the major leagues of offshore power boating requires both a driver and a throttleman to handle the twin engines. Based on the fragile nature and high cost of the drives, Brian figured it would be easier to teach Wilma how to drive, rather than throttle. Starting with a Hustler, they practiced relentlessly on a mock course in Lake Ontario. First, going flat out in a straight line, then turning. Then running with another boat, then

# ALL THROTTLE

## Husband-wife team wins World Championship

running six inches apart at 90 mph.

Needing to run a minimum of three APBA races to qualify for the 2000 Factory 2 Class Worlds in St. Petersburg, they entered their first professional event on the St. Clair River near Detroit. With some rough water and tricky currents, Brian and Wilma observed many accidents. Within one incident of pulling the plug, they decided to race. Although lapped by half the field, they still managed an 11<sup>th</sup> place finish. Races

at Oshkosh and Buffalo qualified them for the World Finals where they finished 16<sup>th</sup> out of 27 boats in the fleet.

During the 2001 season, Brian and Wilma moved up to a Donzi boat and finished sixth, both in APBA Offshore National Series points and at the Worlds.

During that first full season, the Rosses were somewhat intimidated by the actions of other teams. Not known for backing down from a challenge,

Brian and Wilma fought back. They sought advice for stepping up their test program. Brian also learned more about specing propellers and having a broad selection to match varying conditions. Hour by hour, the seat time paid dividends, and they learned what it takes to intimidate others. After someone told them that they looked like a "cute" racing couple at the 2002 Worlds in Key West, their motivation skyrocketed.

*(Continued on page 40)*



## A championship season

Similar to NASCAR racing, consistency pays dividends on the APBA circuit. Brian and Wilma started the 2003 season with a third at Daytona, then a second at Marathon, Fla. They went from never leading a race to their first APBA win at Savannah. They did so convincingly lapping all but one boat in their class. Avoiding the dreaded DNFs, boat F2-46 then recorded a string of seconds. They finished third at the World Finals in St. Pete and won the 12-race National Championship. Wilma was named APBA driver-of-the-year, and the coveted F2-1 number was theirs for 2004.

At the first race of 2004 in Marathon, a tough lesson was learned in a split-second. Powering through a turn, they exceeded their limits. The boat dug into the water, popped up, did a 180 and stopped abruptly when the rear transom dug in. They and the boat went from 80-plus mph to zero in the space of two boat lengths. Wilma suffered a broken clavicle; Brian mashed the fingers on his left hand. As the adrenalin kicked in, they assured each other they were okay, and Brian checked the drives and propellers. Finding no apparent damage, they fired up and raced on finishing second, 23 seconds back. Almost immediately, their broken bones and a long list of bumps and bruises became painfully obvious.

Their hospital stay and recuperation time were short, however. Determined to defend their championship, they raced three weekends later when the series resumed. Brian and Wilma finished second in season points and third at the World Finals, even though the F2 class had been opened up to higher horsepower boats. They ran a more selective schedule during 2005 and won the season-ending Worlds at Key West. With an eye on the future, they acquired and renovated a new shop in Oakville, Ont.

## New challenges ahead

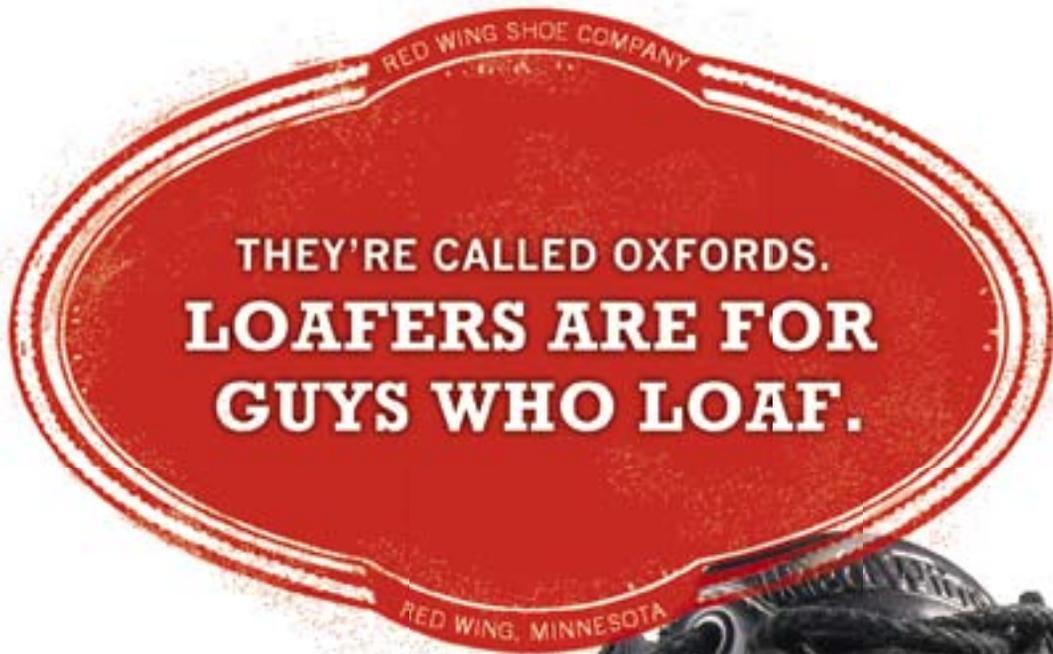
For 2006, the Rosses are moving up the Supercat class with a new catamaran from Marine Technology Inc. A pair of 502 cu. in. Mercury Marine racing engines will churn out 1,050 hp. The tunnel-hull design and its full Lexan® canopy are more aerodynamic. Brian and Wilma also feel the 130-mph Supercat is safer. Contoured seats, full harnesses and the Hans device will be deployed, in addition to the canopy.

*(Continued on page 42)*

# PERFORMANCE FACTS

Racing Class:	APBA Factory 2
Boat:	Donzi Marine
Hull:	38 ZR Vee Bottom
Length:	38 ft. 2 in.
Beam:	8 ft. 2 in.
Weight:	8,300 lb.
Fuel Capacity:	210 Gallons
Engines:	(2) Mercury HP500EFI
Horsepower:	1,000
Drives:	(2) Mercury Bravo 1XR
Propellers:	(2) Hering





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The new boat will be rigged and tested by the end of June. The first race is set for Sarasota over the July 4th holiday weekend; four more follow prior to the Worlds. In addition to his throttle and trim responsibilities, Brian will be learning how to handle the tunnel tab that regulates airflow around the twin hulls and provides lift. Although Brian and Wilma face new challenges, they expect to be a force to be reckoned with by the time 2007 arrives.

As they have done throughout their remarkable careers, the Rosses devote their full energies to their professional responsibilities. Brian is now vice president and general manager of Snap-on Tools Canada; Wilma provides in-home foot care for seniors and maintains a part-time schedule at a nursing home. Their free time will be devoted to racing, sponsor support activities and a new training school for offshore performance boating and racing. For primary sponsor AC Delco Canada, they will continue a very popular loyalty program that rewards customers with 90-mph rides on Lake Ontario three nights a week during the summer. Not forgetting their roots, a few poker runs will also be scheduled.

As in everything they're ever tried, you can be sure that Brian, Wilma and now their sons Travis and Kyle will be up to the challenges that lie ahead. 



The new performance school has Brian and Wilma particularly excited. They will personally conduct the schools – including classroom and on-the-water training – using the new MTI Supercat and the Factory 2 Donzi that has served them so well. Along with sons Travis and Kyle, they've already launched a custom rigging and maintenance business under The Ross's Offshore Racing Performance Center banner. Travis handles much of the day-to-day business activities. While pursuing a degree in telecommunications, Kyle handles IT responsibilities and the website. You can check out all aspects of this growing family business at [www.rossoffshoreracing.com](http://www.rossoffshoreracing.com) or by calling 905-825-9584.

## Cool Stuff

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[peakantifreeze.com](http://peakantifreeze.com)  
[danicaracing.com](http://danicaracing.com)



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[spot-hogg.com](http://spot-hogg.com)

## Hidden gem

The Harman-Kardon Drive & Play takes your automotive iPod experience to the next level in style. For starters, the slick looking backlit LCD display and controller can be positioned anywhere in the car. The compact brain, which can be hidden safely away in your glove compartment or other location, hooks up to your car stereo through either wired or optional wireless connections. Connect other devices to the Drive & Play, such as your FM or satellite radio, cell phones, CD players, etc. There are plenty of other features, and of course the sound quality is unsurpassed. Compatible with all docking iPods, including Nano and Video.

[harmankardon.com](http://harmankardon.com)



## Ice cream fundae

If you're looking for fun a way to entertain your kids while camping, picnicking or RV-ing, toss them a Play & Freeze Ice Cream Maker. These 8-inch diameter spheres come in several colors and are made of tough, clear polycarbonate. Just add the ingredients (cream, sugar, vanilla or flavorings) to the inside container, dump rock salt and crushed ice cubes into the outer container, and let the kids do what comes naturally. After a few minutes of tossing, shaking or rolling the colorful ball around, the cream and other sweets form smoothie-style ice cream. The makers also can be used to chill coffee, tea or keep other frozen beverages cold. They clean up easily too.

[icecreamrevolution.com](http://icecreamrevolution.com)





# Diamond in the Rough

*1949 Cadillac Series 62*



**W**hen a street rod builder discovered two highly sought-after vintage Fords in a Massachusetts barn during 1999, a very rough '49 Cadillac Series 62 convertible just happened to reside there too. After storing the cars for 35 years, the barn owner was in an "everything must go" mode. Although the rod builder was thrilled with his coveted finds, he had just enough interest in the sadly neglected throw-in to advertise it for sale.

As luck would have it, Bob Stearns of Bellingham, Mass. was attracted to what many might consider the ugly duckling of this threesome. Having restored more than 10 other cars previously, Bob is well known among family and friends as a certified car nut. The fact that he owns a salvage yard, body shop and repair garage in Uxbridge, Mass. proved to be very beneficial.

Over the course of three years, Bob, his brother Jack and Dave Beaudreau, a bodyman friend, invested more than a few nights and weekends. Bob knowingly chuckles when the terms "money pit" and "time burner" are used to describe his beloved hobby.

## Ground-up process

After clearing the decks, the Cadillac restoration started in earnest during 2001. The toll of 113,000 miles weren't nearly as telling as the 50-plus years since the car and its original paint job left the showroom. Every nut and bolt was removed during the frame-off resto project. Each aspect of the restoration was executed to perfection in a painstaking process.

The frame and suspension were tackled first, then the engine, transmission and drive train. Although relatively straight, the body and chrome were particularly challenging. "It took a very long time," said Bob commenting on the process. PPG base-clear provides the gloss black finish. All the plumbing and electrical were updated including a 12-volt system.

The interior and convertible top posed their own unique issues. The '49 Cadillac came equipped with hydraulically operated windows, seats and convertible top and a vacuum power antenna. FM was added to the stock-appearing AM radio. The red all-leather interior and the black top provide striking finishing touches. A hidden gas cap under the hinged left taillight is a unique feature.

## A certified gem

Under the hood, the perfectly restored 331 cu. in. overhead valve V8 is factory fresh, inside and out. The 4-speed Hydra-Matic transmission operates smoothly. Renewed drum brakes provide stopping power all around. The stock single exhaust was retained. The 1949 Series 62 rides on 235 X 15 wide white radials supplied by Coker Tire. A '53 Eldorado contributed the beautifully detailed wire wheels. Choosing not to run the New England show circuit, Bob simply drives this black beauty for pure enjoyment.

The '49 was a true luxury car seating six comfortably. It crept up to 60 in 11 seconds, reinforcing the notion that it was built for comfort, not for speed. Drivers enjoyed the ride and looked good cruising.

Like most car nuts, Bob enjoys the challenge of making the seemingly impossible possible or the difficult routine. After spending almost three quarters of its life confined to a barn, the throw-in Cadillac found a caring owner who transformed the rust bucket into a gem. In the world of car restoration, there's no question that Bob Stearns qualifies as a skilled gemologist.

*(Continued on page 46)*

BEFORE



AFTER



## '49 CADDY FACTS

Convertibles Produced	8,000
Body Designer	Harley Earl
Weight	4,218 lb.
Length	215.5 in.
Width	80.5 in.
Height	62.6 in.
Wheelbase	126 in.

# Been there, done that



In his 35-plus years in the business, Bob Stearns has done many things that others only dream about. His three businesses – Universal Auto Salvage, Uxbridge Universal Auto Body and Uxbridge Universal Auto Repair – operate successfully on adjoining parcels. His long-running interest in circle track racing prompted him to compete in what is known today as the NASCAR Weekly Racing Series. The New England area has long been a hotbed for paved-track modifieds.

Back in 1985, Bob even went NASCAR Busch Series racing with Massachusetts driver Ken Bouchard. Starting with the season opening Goody's 300 at Daytona, the Universal Auto Salvage team competed in five other events recording three top-10s and earning \$10,500. Interestingly, the 1985 Daytona pole winning speed of 187.438 mph was considerably faster than the 183.094 mph recorded by J.J. Yeley for the 2006 Busch event.

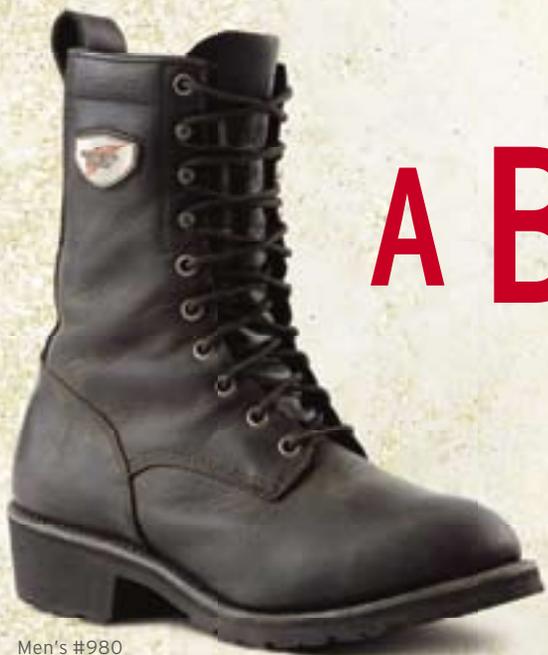
When it comes to his tools, Bob Stearns uses two words to describe Snap-on, "the best." He has a pair of Dale Earnhardt Intimidator boxes flanked by two smaller side boxes. Bob is quite sure he owns at least one of practically every tool Snap-on makes. For a man who has accomplished so much in the world of cars, that's not surprising. 

## CAN WE FEATURE YOUR RESTORATION?

If you own a car, truck or motorcycle that you restored, have some "before" photos and are a Snap-on tool user, let us know the vehicle specifics, contact information, place of employment and the name of your Snap-on Dealer. Mail any details and a photo that will not be returned, or send an e-mail with a hi-res digital photo attached to:

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Men's #980

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# Parking a Peterbilt the hard way

*How did they do that?*

**I**t all started simply enough: A group of people sitting around a table shooting ideas at each other. Their mission: How to demonstrate the strength and engineering built into Snap-on tool boxes in a way people would understand immediately, and would remember.

Someone recalled, "Years ago they used to put a Snap-on dealer van up on top of four roll cabs and show how the drawers would open and close under load."

That might be cool.

"How much does a dealer van weigh?"

someone else asked. "Is it heavy enough to be impressive?"

Everyone in the room had seen one competitor's demonstration where they put the two front wheels of a monster truck up on a roll cabinet. It looked good because the tires were big and the truck was fun to check out. But with the angle at almost 45 degrees, how much weight was actually on the tool box? Probably not much.

"What's the heaviest thing we could put up on ours?"

"How much does a semi weigh?" The

questions were coming fast and there weren't a lot of answers in the room. So the meeting broke up with lots of calls to make, which would lead to lots more calls, some careful engineering analysis, and a plan involving 10.5 tons of premium dump truck.

One of the key guys in the meeting was Dave Doerflinger, project engineer for Snap-on tool storage. "I called the folks at Peterbilt and started asking about weights of semis and other trucks," he said. "It turned out that a semi tractor and a dump truck both produced the kinds of axle loads we were interested in. The dump truck was

*(Continued on page 48)*





PATRIOT

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heavier than the semi.”

That weight, in the case of the dump truck, was 20,960 pounds, divided up as 9,000 pounds on the front axle and 11,960 on the rears. Dave’s mission was to do the calculations to make sure that the weight at each tire could be carried by whatever Snap-on roll cab the product manager wanted to use.

“I wanted to use the Masters series KRL1022 Roll Cab because it is one of our most popular boxes,” Mark Knapp explained. Knapp is the product director for the Tool Storage group. “Our rated capacity in our catalog is 4,800 pounds, which was close to what the truck weighed at each corner. Just to be sure, we did some laboratory testing for safety and knew that the box could actually hold about 8,000 pounds.”

So, with the basic concept in mind, Doerflinger was left with one simple question: How do you get a 21,000-pound dump truck up on four tool boxes?

Fortunately, the people at Peterbilt liked the idea of having their truck on the Snap-on boxes – two brand leaders working together. So Dave asked them for some ideas on lifting the truck. It turned out that lifting big heavy trucks up in the air in the field is a military specialty. They don’t always have access to a garage, so they use heavy-duty mobile column lifts. Dave’s next stop was the local National Guard armory where he saw the lifts in action.

“They look like a combination of a big pallet jack



and a forklift,” Dave explained. “They have the two extended foot sections in front like a pallet jack, and forks that travel up the column to do the lifting. You can connect several of them together with cabling to synchronize them so that you can lift the vehicle without tipping it – nice and smooth.”

So Dave got on the phone and found Interstate Lift and Equipment Company in Niles, Mich., right around the bottom of Lake Michigan from the Snap-on offices in Kenosha, Wis. They agreed to furnish four Patriot

Hydraulic Column Lifts and do the job.

Doerflinger’s job wasn’t over yet. Next, he had to figure out how the extended feet would get under the tool boxes. The only way to do it was to build a platform that they could fit under. So he designed a platform built of 2-by-12 planks. Then, there was the issue of the tipping axle.

“On the back axle, we had planned to use one box under each corner,” Knapp explained. “As we worked through it, though, we realized the wheels on the back axle pivot, and if only the rear wheels were used for support, the front section of the tandem would drop down and it would look funny. So we added another set of boxes to keep the rear wheels level.”

“The other issue was the contact patch of the tires,” Doerflinger said. “All the weight on each of the tires sits in an area 9-inches square. We needed to spread that 9 inches over the top of

the cabinet. Because of the weight of the truck, we had to go with inch-and-a-quarter steel road plates. We calculated that thinner ones might deflect.”

Each road plate weighed in at 529 pounds, so now the total weight being carried was up to 24,134 pounds.

So, with the cooperation of a truck maker, a lifting specialist, and Mother Nature, the lift was scheduled for a brisk fall afternoon in the Snap-on parking lot. Despite a rainy morning that gave way to a windy afternoon, all the pieces came together. The four column lifts raised the truck high in the air; the platform and the boxes were put in place, the truck was lowered and the column lifts rolled out of sight. The skirt went on the platform and the photo and video shooting began. The drawers on the boxes opened and closed smoothly, and what originally seemed far-fetched or even impossible was done.

And the damage? “There was no damage to the boxes. The only thing we noticed was the tires left tread marks in the paint we used on the road plates,” John Landree, the product manager for the Masters product line, told us. “We were really happy to have a way to demonstrate how our boxes can handle heavy loads.”

When you get a chance, ask your Snap-on dealer to see the full tool box video program. It will tell you the whole story on Snap-on quality and offer some interesting results in product comparisons.

Oh, and one more thing. As they say, don’t try this at home. ☺





# Donor Rescues Derelict

1939 Lincoln Zephyr convertible



**W**hen Mick O'Neill of Yakima, Wash., acquired a derelict '39 Lincoln Zephyr convertible in 1991, he got even less than he bargained for. Although he knew the engine, transmission and rear end had been removed, he discovered many other parts and components were also missing.

Undaunted, Mick forged ahead with a six-year restoration project. Since only 640 convertibles were built and his is one of 20 or so still known to exist, the project was considered worthwhile. A '39 sedan served as the donor car for the fenders, hood and many other parts.

The exterior appears stock except for the '41 Lincoln bumpers. A late-

model 429 cu. in. engine, transmission and rear end equip this unique find for reliable highway cruising. The car has been driven about 5,000 miles per year since completion. The comforts of A/C, cruise and power windows add to the drivability.

During the restoration process, Mick learned that the body was welded to the frame at the factory making it the first "unit-body" car. Under the direction of Edsel Ford who envisioned a "world car" that could be sold on every continent, this new unibody concept was formally introduced in 1940 as the Lincoln Continental.

Mick owns O'Neill's Diesel Service in Ellensburg, Wash. The firm specializes

in on-highway truck and heavy equipment repair, both shop and field. "I've used Snap-on tools for more than 35 years," said Mick. They're top quality, none better. What I like most is that Snap-on and my dealer stand behind everything I buy." 

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