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# Tech

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## RAPIDS RUNNERS

Techs tackle rugged river

**Tech-adelic, Baby!**

Tech's billiards business booms

**Bag big buck**

Hunting tips from a pro

**Troubled waters**

Fishing through tough times



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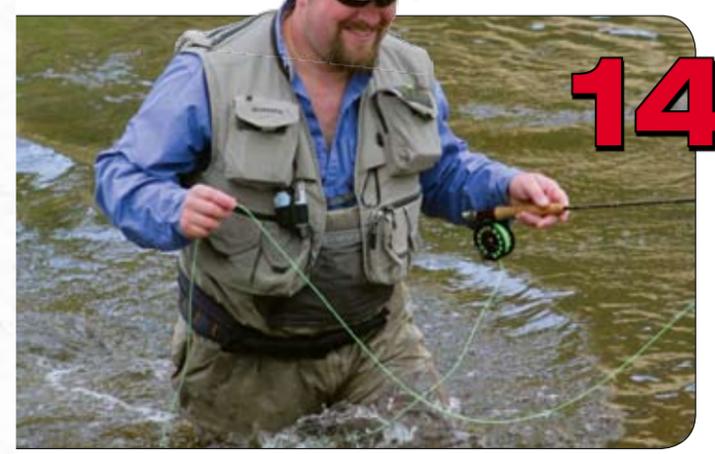
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**Snap-on** THERE IS A DIFFERENCE™



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Welcome to the fall issue of *Tech Magazine*.



As recently appointed president of Snap-on Tools Company, it's an honor to be able to open this latest issue with a few introductory thoughts. I feel a special connection to professional technicians, as I began my career as a tech in a new car dealership. I've served in various positions in the vehicle service industry, the last 11 years with Snap-on. Whether you service cars, trucks, motorcycles, boats, planes, heavy equipment or other powered equipment, I understand the important role you play in moving America forward.

At Snap-on, we also understand how challenging your job can be and the effort and hours you put into it. Your time is money. Snap-on's mission is to provide the most valued productivity solutions in the world. We work hard to constantly develop time-saving innovations that make your job easier. But it is our network of knowledgeable, professional franchisees that really delivers the most value for you. Your local Snap-on Franchisee is there at your place of work with the tools, information, programs and service you need, when you need them. We are committed to helping them help you.

Technicians are passionate about their profession. And they are passionate about what they do away from the job. Knowing that, Snap-on is glad to be able to provide this magazine to celebrate that enthusiasm and tell a few interesting stories along the way. You work hard and you deserve a magazine devoted to your profession, your lifestyle and your passions.

Thanks for your continued support of Snap-on, and thanks for reading. I look forward to sharing some thoughts with you in future issues of *Tech*.

Tom Ward  
President, Snap-on Tools Company LLC

## Share Your Story

If you're a professional technician and use Snap-on tools, we'd like to consider developing a story about you and your passion away from the job.

Tech readers are interested in learning more about what their fellow technicians do after hours. Interesting stories could focus on volunteer work, community service, coaching, youth education or sports. Are you a volunteer firefighter, paramedic, scout leader, vocational teacher ... someone who makes a difference in your community? Perhaps you're a reservist who served in Iraq or Afghanistan.

Speak up - we'd appreciate hearing from you. Drop a note or send an e-mail. Include a story idea, contact information, place of employment and the name of your Snap-on Franchisee.

### Tech Magazine

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# Tech

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## Volume 3, Number 3

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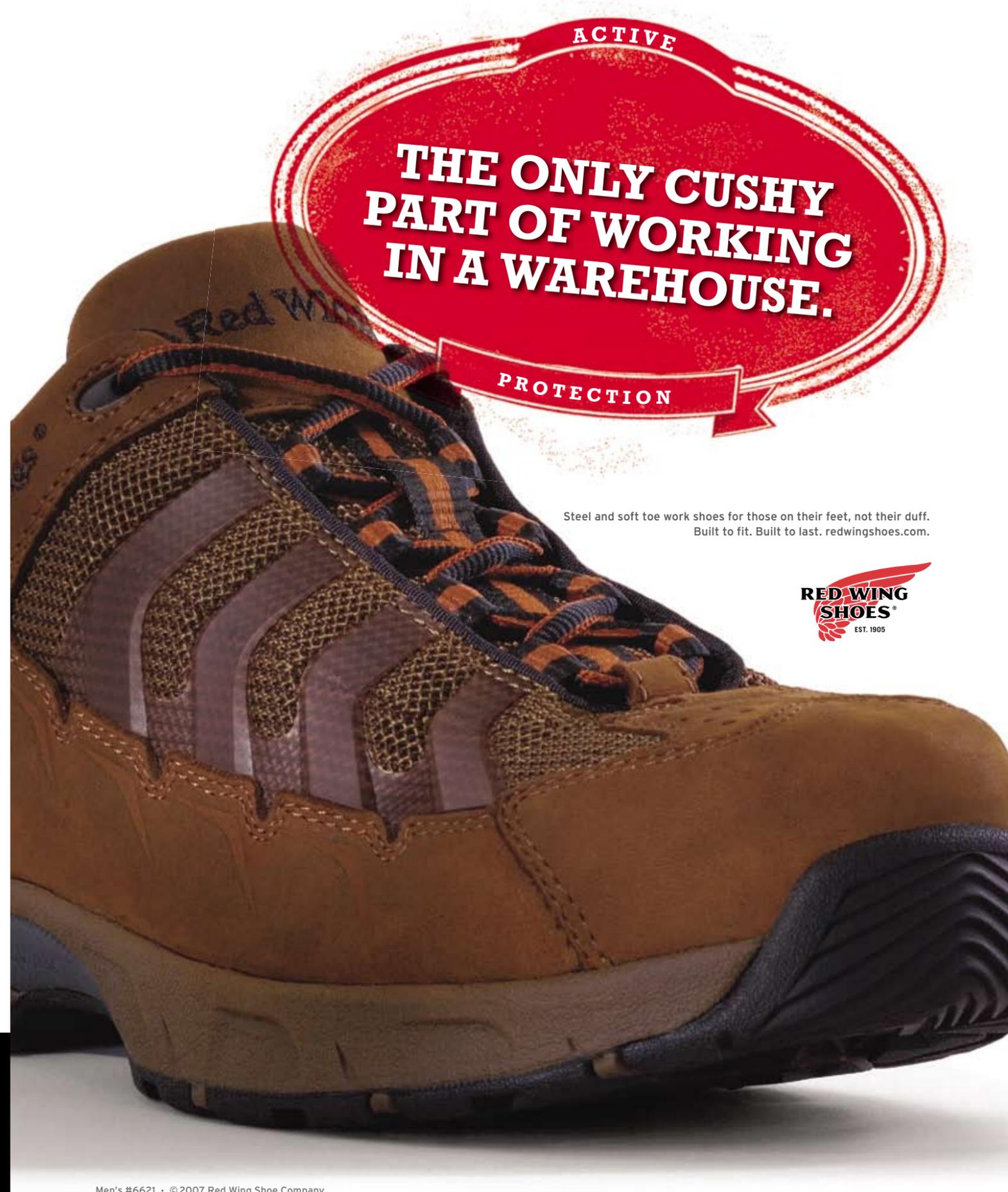
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## Yes, it's hot enough for you

Sauce made from one of the world's hottest – if not the hottest – chili peppers is now ready for your consumption. Entrepreneur Mark McMullan is marketing his Snake Bite sauce from Naga Morich peppers. It's a hot product, with 500 bottles sold online the day the sauce hit the market. According to McMullan, the Naga Morich pepper, which hails from Bangladesh, registers about 1.6 million Scoville Heat Units. That's roughly three times hotter than the previous world record holder, the Red Savina Habanero; 300 times hotter than a regular jalapeno; and only a few times less powerful than pepper spray.

**On the Web:**  
[thechileman.org](http://thechileman.org)



## An a-luring destination

Looking for a stop during next year's vacation? Consider a trip to the National Fishing Hall of Fame in Hayward, Wis. The grounds include a "shrine to anglers" – a walk-in muskie that is a half city block long and more than four stories tall. But there's more to do here than walk inside a huge fiberglass fish. The adjacent museum houses an inventory of more than 5,000 old-time lures; 300-plus antique rods, reels and angling accessories; and more than 400 fish mounts. Be sure to call first because the place is closed from November to mid-April.



**On the Web:**  
[freshwater-fishing.org](http://freshwater-fishing.org)

## Look who's 50

The '57 Chevy hit the market a half century ago. Back then, a 235 cid six-cylinder engine was standard. (Buyers also could choose from one of five optional V-8s.) The inline-six featured 3.56x3.94 bore/stroke; 8:1 compression; and 140 hp at 4200 rpm, with a 1-bbl carb, according to the website [superchevy.com](http://superchevy.com). The optional, high-end 283 cid V-8 featured 3.88x3.00 bore/stroke; 10.5:1 compression; and 283 hp at 6200 rpm with fuel-injection. List price for a basic two-door Bel-Air sedan back then: \$2,238.

**On the Web:**  
[superchevy.com](http://superchevy.com)

We're building our own '57 Chevy. See page 8 or log on to:



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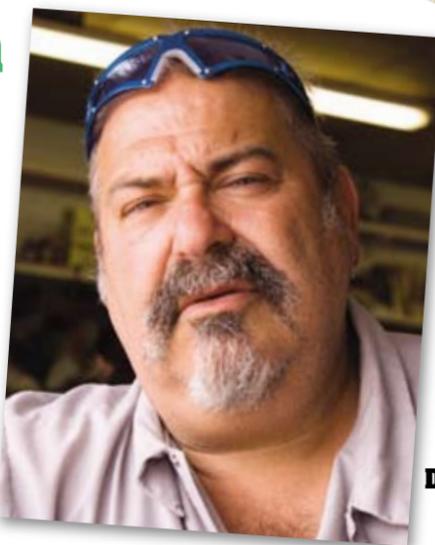
Alexis

Lookin' for some surfin' fun on the web? Just log onto **AintStreetLegal.com**. It's the fast and easy way to monitor the build of a very nasty '57 Chevy Nomad. You'll see this American icon as it undergoes a complete transformation into one wickedly wild wagon. And you're invited to participate.

## The Team

### Doc

Who better to build this tricked out wagon than the doctor himself, Doc Neon? He's an icon in his own right as the *Tech* profile in the fall 2006 issue (Volume 2, Number 3) confirms. Over the course of six months or so, Doc and Team Neon will be applying their many talents to this Snap-on project car. It promises to top the buzz generated by the Snap-on chopper (*Tech*, Volume 1, Number 1).



Doc Neon

### John

John Muldowney brings his NHRA credentials along with experience working on space shuttle engines, rebuilding vintage cars and restoring warplanes. Other look-cool-go-fast industry experts and a few celebs will lend a helping hand when the build schedule calls for their specialized expertise. They're tackling their daily tasks with an array of Snap-on tools and equipment that would be the envy of any tech.

## The Build

A custom chassis with Corvette C6 suspension and driveline components provides the platform for the soon-to-be, whacked-out screamer. Airlifts will help cushion the ride and adjust ride height. The Chevy engine will be a really high-tech small block that delivers some really big Ain't Street Legal performance.

You'll learn more about the engine's configuration in the next issue of *Tech*. While you're patiently waiting for your Snap-on Franchisee to deliver it, why not log on and interact?

### It's easy. You can:

- See some cool video clips
- Tell Doc what you think on his blog
- Participate in the Ain't Street Legal forum
- Download the ASL wallpaper
- Sign up for e-mailed project updates
- Talk with your peers in a Car Community forum
- Acquire some cool Ain't Street Legal stuff
- Link to project sponsors / product contributors

And if you'd like to assist a mercurial, temperamental inventor, give the good doctor a call. ☎



On the Web:  
[AintStreetLegal.com](http://AintStreetLegal.com)  
[GlowJob.com](http://GlowJob.com)



# Not exactly a Fat Boy



**Bob Fink didn't sit idly by as gas prices rose. He fought back with the creation of a motorized, fuel-efficient bicycle. Sure, walking would have been easier — but not nearly as much fun.**



And how, exactly, does one create such a bike, which gets 75 mpg? Don't ask Fink, an auto technician at Baum's Service Center in New Cumberland, Pa., for design plans. There aren't any. "It's just an idea that's born and you put it together with nuts and bolts until you're done," he says.

## As simple as that

Fink got the idea from the old "Whizzer" kits, on the market from the 1930s to the 1960s, that allowed a small motor to be added to a bicycle.

"I had one when I was 15," Fink says. "They were very under-powered and weak. I decided to make one of those reminiscent of the 1950s, but with all new, high-tech equipment."

So Fink went to work — got himself a Schwinn bicycle and started putting together the nuts and bolts until he was done.

He made some improvements to the original idea. The Whizzer featured an air-cooled 2.5 horsepower gasoline engine. Fink found the power and cooling unacceptable.

"The old Whizzers ran so hot you could fry bacon on them by the time you reached the first stoplight in town," Fink says. "Mine is cooled by an internal fan. It never gets hot. I can run it in town all day. It runs cool enough for me to lay my hand on the motor."

Fink says he can safely get the bike up to 50 mph — much faster than a Whizzer-powered bike ever moved. An automotive-style electric starter means he can take off without pedaling, something else that didn't happen in the old days.

Once the idea was hatched, shop owner Doug Baum supplied Fink with space and some timely welding. "He loved it," Fink says. "He helped me every way he could."

The shop's full complement of Snap-on tools also was at Fink's disposal. "We did all work in-house, exclusively using Snap-on tools," Fink says.

Completing the motorized bike took a year and cost about \$3,000 — mostly because of Fink's commitment to superior parts. The bike is titled, insured, inspected and licensed for unrestricted street use — designations that did not come easily.

Fink's building days are over, he says, because new emission-related federal regulations allow an individual to construct only one such bike per lifetime. Now all he can do is ride.

"I use it every nice weekend," Fink says. "Everybody wants to know, 'What is it, how much does it cost, and how can I get one?' Every time I take it out, a crowd gathers around."

Interested in making your own? Get the tools, a bike, some nuts and bolts and complete the job. Simple as that. 🛠️

## Specs

**Bicycle:** 1950s Schwinn Cruiser, balloon-tire frame

**Engine:** Tecumseh industrial, 195 cc, ohv, 6 hp

**Transmission:** Comet variable-ratio, full-automatic (from a snowmobile)

**Carburetor:** Mikuni 22 mm; uses expansion-chamber, custom exhaust

**Brakes:** Worksman cycle, drum and shoe

**Etc:** 120-gauge stainless spokes; low-lipped, forged-steel rims



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# 'An Obsession'

Collector has been accumulating Snap-on tools for years

**Name:** Sheldon Marne

**Location:** Hendersonville, N.C.

**Hobbies:** Collector of Snap-on tools, turn-of-the-century automobiles and Model T Fords

**How many Snap-on tools do you own?** Thousands

**Where do you keep them?** Some in the office, the rest in my workshop and warehouse

**What do you use them for?** My hobby, the cars, and honey-do lists

**How did you get started?** I have been working since I was 10. My first job was at Atlas Auto Wreckers, a salvage yard in Brooklyn. That's where I got my first Snap-on tool, in 1955. It then became an obsession.

**What was your first Snap-on tool?** A 1/2-inch ratchet and set of drive sockets.

**Where do you find the tools?** Most were purchased over the years from Snap-on Dealers, but I do find tools at garage sales and flea markets.

**The pride of your tool collection is:** A complete set of Snap-on 1/4-inch drive sockets

**The best deal you ever got on a tool was:** I purchased a complete set of 3/4-inch drive sockets at a flea market for \$50.

**What are some of the antique cars you own?** I have eight cars made before 1905: a 1904 Cadillac, 1904 Pierce, 1903 Orient Buckboard, 1902 Panhard et Levassor (10 h.p., 4 cylinders), 1903 Panhard (7 h.p., 2 cylinders), 1903 De Dion Bouton (7 h.p., 1 cylinder), 1904 De Dion Bouton (7 h.p., 1 cylinder) and an 1896 Fafnir Tricycle. I also have some rare Model T Fords and four 1926-27 Ford Model T Touring Cars and a Ford Model T Town Car and Couplet from 1915.

**What was the biggest restoration challenge?** I traded four early cars for parts to remake the 1902 Panhard, which is my pride and joy. It took four years to remanufacture the auto, using all the original parts. The Veteran Car Club of Great Britain issued a dating certificate that allows the car to participate in the London-to-Brighton rally, limited to vehicles made or delivered prior to Jan. 1, 1905.

*Learn more about the London to Brighton Veteran Car Run – the world's longest running motor event, at [lbvcr.com](http://lbvcr.com).*

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# FISHING THROUGH TROUBLED WATERS



## Tech's 'therapy' becomes competitive pursuit

**K**evin Lowe grew up with two passions: working on cars and fishing.

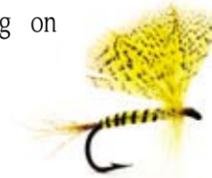
The car stuff came from his father, Jamie. "I started learning when I was real young from my dad," he says. "He wasn't a pro, but he worked on his own cars at home."

Kevin learned his other hobby, fishing, from grandparents and uncles. "I don't remember the first time I went fishing, but I hadn't been walking long," says Kevin, a technician at Phil Bachman Honda, Kingsport, Tenn. "When I got to be 9 or 10, I had seen people fly fish, and I told my grandfather, 'I want to do that.'"

His grandfather took a fly rod and helped Kevin learn to cast in the yard. "I loved it instantly," Kevin says.

Those lessons would lead him to pursue fishing as a hobby and even competitively. Fishing also would lead Kevin out of the most troubled time of his life.

"My dad was killed in a motorcycle accident in October 2005," Kevin says.



"After that, I really didn't know if I wanted to turn wrenches anymore. That's what we had done together. My father had a drag car, and we worked on that a lot.

"At my job, it was hard to work on cars. It was just really a struggle, and I didn't know if I wanted to do it anymore – if I COULD do it anymore. I was at a loss. Nothing made sense."

While the tech work bothered Kevin, fishing had the opposite effect. "Fly fishing was one of those things I had done a lot before. I used that to get my head back on. It was a big turning point."

Eventually the sessions of fishing and reflecting led Kevin back to his career as a technician – a choice he is glad he made. He is a gold-level, master-certified ASE technician. He also is Honda certified.

These days, he is fishing more for competitive reasons than reflection. In May, Kevin had an opportunity to find out how he stacks up against some of

*Continued on page 16*



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**FISHING THROUGH  
TROUBLED  
WATERS**



the country's best fly fishermen when he competed in a tournament in Newaygo, Mich. The top finishers advanced to another tournament – and those winners in October will make the Fly Fishing Team USA, which competes around the world.

Kevin discovered the competition while visiting fly-fishing websites. "One of the guys had posted stories about the competition," Kevin says. "I gave him a call and talked to him. He invited me to a practice and asked me to join them in Michigan."

Kevin agreed. He took 20th in the event, but only the top 10 advanced to the finals in Colorado. Kevin will give qualifying another shot in August, when the competition moves to North Carolina – a state with waters much more familiar to the native Tennessean than the frigid streams of Michigan.

Kevin expected being an "outsider" would put him at a disadvantage in Michigan, but he did have some good sessions and caught fish. During one three-hour period he landed 37 trout, but they were just under the "score-able" size. Other competitors struggled as well, in part because many bigger trout had headed to deeper waters. "The fishing was rough on everybody – even the pros were having some problems," Kevin says.

Maybe the competition reminded Kevin of a lesson he had already learned. "Sometimes, you just have to do your best and fish your way through it," he says. 🐟

**INTERESTED  
IN FLY FISHING?**

If so, technician Kevin Lowe has some advice to help you get started.

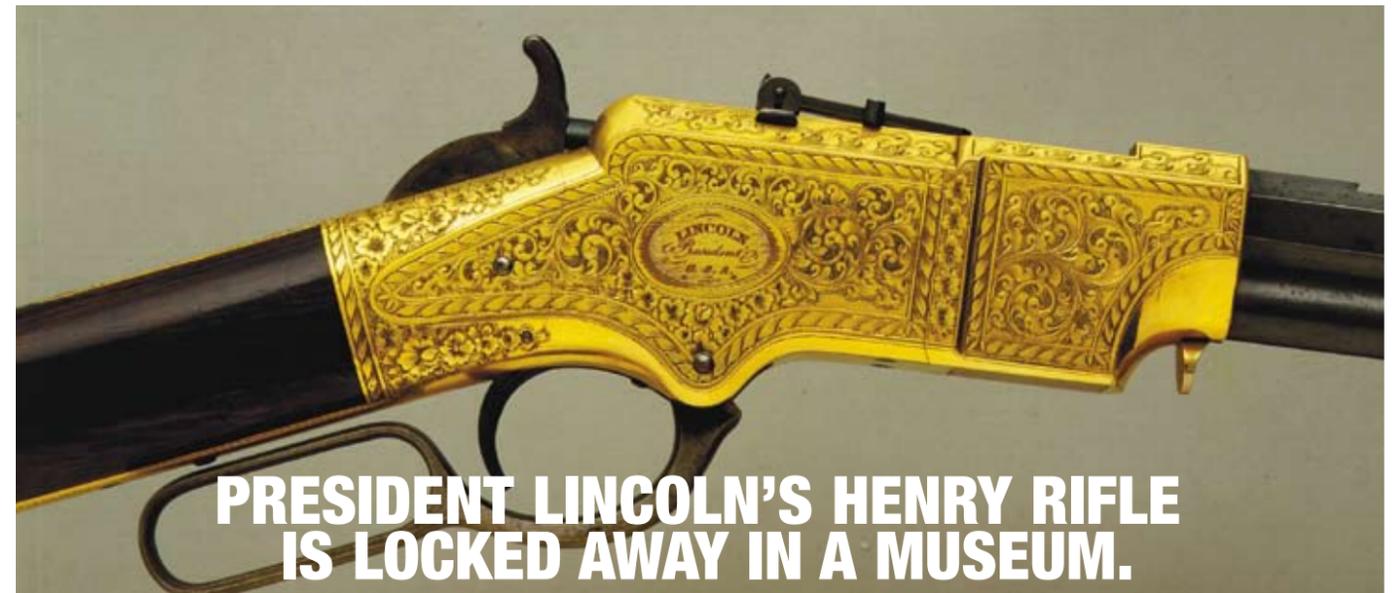
**TIPS:**

1. Look for inexpensive gear. It's out there. "A lot of people think trout fishing is an extremely expensive sport," Kevin says. "It's not. You can acquire a fly-fishing setup for the same price as a regular rod and reel."
2. Don't be intimidated by the perceived difficulty of the casting. "It's not real hard," Kevin says. "You can pick it up fast by practicing in the yard." It helps to learn certain techniques from someone knowledgeable. But that isn't the only way. "Many self-taught people are excellent casters," he says. Books help, too.
3. Keep it local. "The local fly shop is the best place you can go," Kevin says. "They know that area. The internet and books are great too, but the local places know the gear you'll need, whether you need waders, the size of fly rod you'll need and what flies to use in that area. Stay local."
4. Be a little bit of everything if you're going to get serious. "If you really want to get after it, you have to be a lot of things – a decent caster, own some good gear and even be a little bit of an entomologist." Why do you need to be a bug expert? "Trout are really picky. They might be feeding on one type of insect on top of the water, then go to the bottom. You need to know what that insect on the bottom looks like," Kevin says.

**On the Web:**

To learn more about the competition, visit [nationalflyfishingchampionship.com](http://nationalflyfishingchampionship.com)

The forum website Kevin Lowe visits is [southeastflyfishingforum.com](http://southeastflyfishingforum.com)



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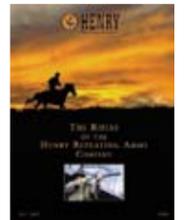
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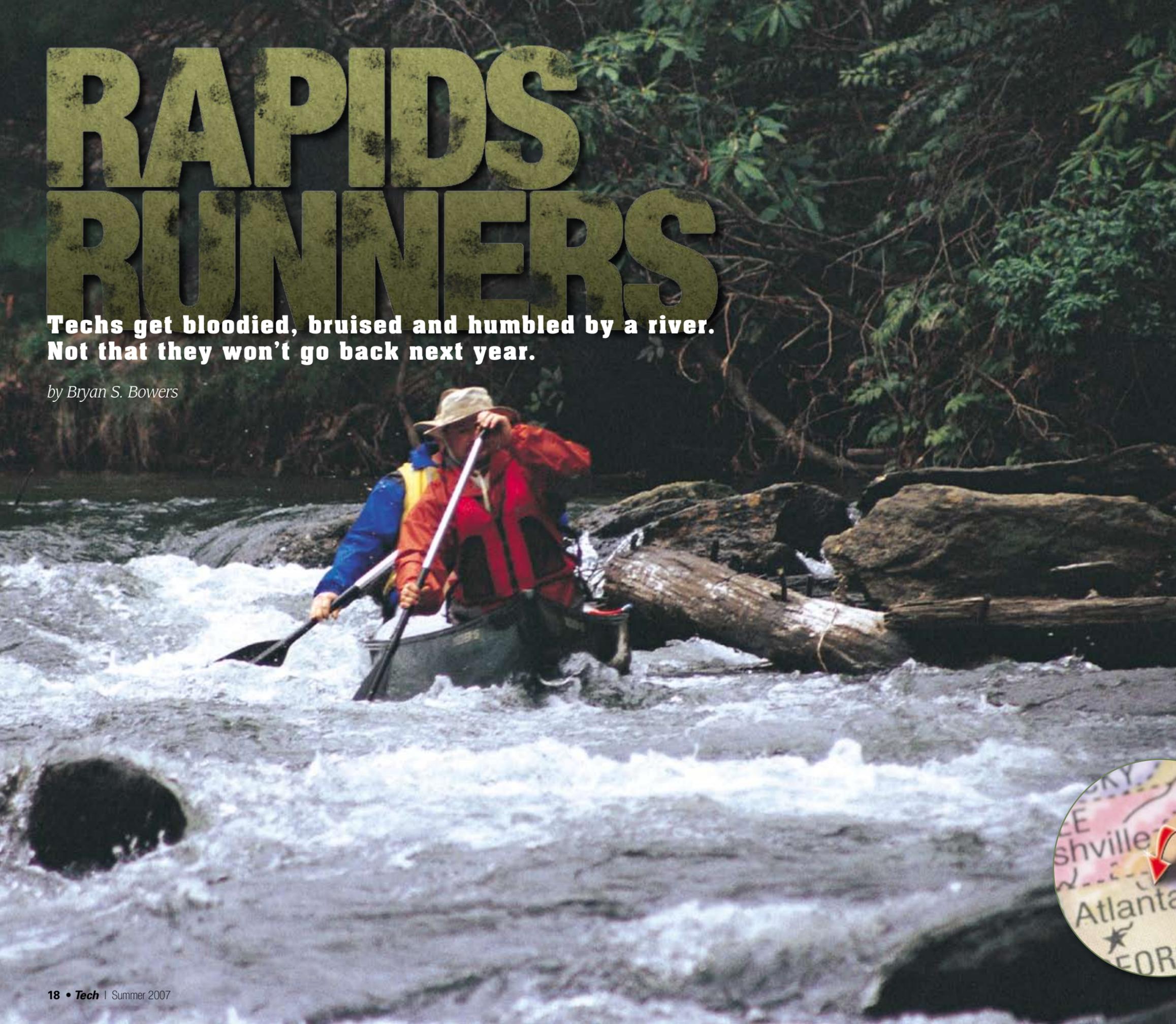
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# RAPIDS RUNNERS

**Techs get bloodied, bruised and humbled by a river. Not that they won't go back next year.**

by Bryan S. Bowers



*If the Chattooga River rapids don't inspire you to paddle like a madman, maybe the fact that the river is the backdrop to "Deliverance" will.*

**T**he icy Chattooga is not a river to be taken lightly. It features rapids as mild as class II (you might go down) and as wild as class V+ (you will go down and might come up). While most leave the Chattooga National Wild and Scenic River none the worse, some have (and will) lose their lives navigating its treacheries. Many safety precautions were taken on this particular outing, and everyone should know their limits before entering the Chattooga – or any such potentially dangerous body of water.

Five of us met in April at a camping area on the West Fork of the river for a weekend of whitewater terror in open canoes. The others are Jamie Thames, Sam Snider, Bobby Hernandez and Jamie Bowers.

We are a mixture of engineers, managers, and industrial technicians with two things in common: We all own and use Snap-on tools, and we all love the outdoors. We are proof that all types of technicians use Snap-on tools, and that guys who say "dude" too much aren't the only ones who love spending time on mountain rivers.

## Friday

After a night of little sleep (in a camp set up in the dark), we drop off a truck and trailer at the takeout on the Georgia side of Earl's Ford. Late morning we slip our canoes into the West Fork of the Chattooga.

Finally.

The canoes glide forward and we find ourselves bumping and spinning off a shallow, rocky bottom. This makes it difficult to get into a rhythm – especially for the novices, and we have some.

In one 16-foot canoe are two guys (Jamie T. and Sam) with little paddling, and no whitewater, experience. In another 16-footer are an experienced whitewater canoe paddler (Jamie B.) and Bobby, who have not been in a canoe before – ever.

*Continued on page 20*



# RAPIDS RUNNERS

I am alone in a 12-foot whitewater solo canoe, which most certainly was not meant for anyone 6-feet tall and over 200 pounds. Still, I wanted to try it. This is a training day, and there will be plenty of swapping of partners and vessels before we're done.

## Getting into it

We come to our first class II rapids, Dam Sluice, 10 minutes into our paddle.

I enter first so I can snap photos of the guys making their first run. Though not particularly treacherous, Dam Sluice does require a technical right turn halfway down to avoid a large boulder.

Stroking forward, my little canoe enters all right but is quickly tossed around and I go into the drink after making the right turn. I bounce across

a rocky bottom and flounder in the cold current like a break-dancer (a really bad one).

It feels like I'm sliding down an oversized washboard. When I'm finally spit out on the other side, my hand is bleeding, and it strikes me that it's very early in the game to mix my blood and the cold waters of the Chattooga.

The others make it without a hitch, smirking at my failure and hurting my pride more than my hand. Our first swap of vessels occurs; I yield the little canoe to Jamie B., who is much more suited to the passenger requirements.

## Another baptism

The river flows steady, the water deepens and the confidence of all improves. The next rapids is another class

II called Big Slide – which is basically a river-wide canted boulder.

The run is straightforward and all make it easily. On the other side Sam tries out the solo boat. He ferries out to the base of the rapids and the tipsy little canoe claims its second victim. He pops up smiling. No blood this time, just a good old fashion Chattooga River baptism.

## Section II

Downstream of Big Slide, the West Fork joins the main stem and section II begins. The river widens and the water slows, making for a nice break.

The first hour on this stretch is spent mostly floating and eating sardines and Vienna sausage. We catch a few trout, too.

We hear the sound of turbulent waters long before we can see the trouble: a rapids called Turn Hole.

The line to run on Turn Hole is river left, but difficult to see. All canoes find the line except for Sam and Jamie T. They decide it's easier to run dead-center instead of coming up with a plan of attack. They get hung up on a ledge and fill halfway with cold water, though they somehow make it.

We hit a few smaller rapids and then hear the most ominous thunder ahead of us. It's Big Shoals, our first class III rapids.

An island and several large boulders in the middle of the river split Big Shoals. On river left are a large drop and a technical right turn to contend with. On river right is an even larger drop with a cross current and several boulders

guarding the exit. This means forcing a 16-foot canoe through a hole most kayakers would struggle to hit.

It doesn't take Bobby long to opt out. He watches from the island and resumes the trip on the other side.

Sam and Jamie T. attack using river left and are successful.



Jamie B. and I try the impossible and run river right. We paddle furiously, hoping to beat the cross current and stay straight. At first we do, but upon meeting the squeeze the front launches up, and up, and up on the exposed boulders. Then it goes down, and down, and down

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as the canoe seesaws before rolling.

The force of the water sucks us down and I bounce off every underwater obstacle in the exit of the rapids.

I pop up, out of breath and hurting. Jamie B. surfaces about the same time, bug-eyed and stunned. We give each other a half-hearted thumbs-up and start the swim to the island. The spectators on land look stunned.

I have a goose egg on my shin and Jamie B. is bleeding from a busted knee, but the adrenaline prevents any real pain.

After watching this spectacle (and sitting it out), I can see in Bobby's face that section III tomorrow will not be for him. I don't blame him. In fact, knowing this will be THE NORM tomorrow, I consider making the same decision – but not for long.

*Continued on page 22*



# RAPIDS RUNNERS

## Night camp

Back at camp we meet up with Gilbert Miller, an experienced Chattooga canoeist, and his son Jessie. Accompanying the Millers are brothers Justin and Jason Carter.

The younger guys are students at Clemson University and members of the school's whitewater club. They are going to be in kayaks and help us with our next day's run on the much more difficult section III. The Millers and Carters are all very experienced, and it's a precaution I'm glad we took. Gilbert, meanwhile, has brought whitewater canoes – which means we can get rid of the 12-foot nightmare.

It is barbecue night, and low-country barbecue pork is a wondrous end to a great day. All eat well and I can feel my body soak up the desperately needed fuel. Sleep comes easily, and morning arrives much too soon.

## Saturday

We head down to the river on the South Carolina side of Earl's Ford. The three Clemson students discover a rope hanging from a tree over the river and show off their youth and athleticism. It is slightly unnerving to see the kayakers we are depending on for our safety – especially on this section of river, which is tougher than what we faced the day before – have such ill regard for their own well-being. But the air is sweet, the sun is warm and the previous day's accomplishments so fresh in our minds that we all feel a little invincible. Down the river we go.

Arriving at the first of many class IIIs we will see this day, the routine is quickly set. Two of the three kayakers enter the rapids, with one eddying out mid rapids and one waiting at the finish. The other kayak waits at the entrance, ready to sweep up any spills.

This rapids is called Warwoman, a name only slightly more menacing than the rapids itself. Gilbert, paddling solo in his old tandem canoe, makes a clean run. His experience shows as he maneuvers through turbulent waters and around buffalo-sized boulders.

Jamie B. and I follow with a run that is not quite as graceful but successful nonetheless. Next, the guys with only one day's experience (in rapids mostly smaller than this) give it a shot. The Old Town canoe goes straight, sideways, left, right, and splash.

The paddlers, with slightly inflated egos from staying dry the previous day, get one hell of an introduction to the cold waters of the Chattooga. (They must enjoy the soaking more than they



let on because they repeat their performance on the very next class III we run a few minutes later.)

## A class of its own

A rapids or two later we arrive at the weekend's only class IV run, Dick's Creek Ledge. One of the kayakers hops on a boulder to scout this monster and shows me how to beat it.

It goes something like this: "Drop in the rapids off this ledge right here and catch the eddy immediately on the right. Be careful 'cause if you miss it you will go over a nasty ledge and land in some sharp rocks. Exit the eddy right and take that little waterfall there and hold on. You ought to be OK after that."

My reply: "I'll take a pass." I'm not running the class IV, and neither is anyone else in a canoe – including Gilbert.

Things go smoothly after that. Sam and Jamie T. manage to stay dry. Jamie B. and I wipe out again, allowing the rookies to gloat.

Our takeout at Sandy Ford comes into view all too soon. We are saddened to leave the river that has been so gracious – and pretty brutal, too. But we'll be back. 🍷

**On the Web:**  
[chattooga-river.net](http://chattooga-river.net)

## OUTFITTERS

Many area outfitters offer everything from canoe and kayak rentals to guided trips. The two recommended by writer Bryan Bowers are:

**Chattooga Whitewater Outfitters**  
Long Creek, SC  
(864) 947-9083  
[www.chattoogawhitewatershop.com](http://www.chattoogawhitewatershop.com)

**Sunrift Adventures**  
Travelers Rest, SC  
(864) 834-3019  
[www.sunrift.com](http://www.sunrift.com)

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*The Primal Scream*

# LIVES ON

Henry Repeating Arms .22 a perfect fit for veterans, newcomers

by Ted Nugent

I slithered across the coarse hayfield behind my dad on that sunny, warm, mesmerizing summer day, way, way back in August of 1954. Stalking the elusive groundhog on Uncle Morris's farm was the thrill of a lifetime for young 6-year-old Theodore Anthony Nugent.

All I could see was a brown lump in the sea of green, an eternity away in the distant rolling Pennsylvania fields, but Dad said it was a woodchuck, a groundhog, and we were gonna kill it. My father was quite the sniper. As a gung-ho drill sergeant in the U.S. Army Cavalry, he took his shooting seriously, and his marksmanship, hunting and stalking skills imprinted on me powerfully.

The big groundhog had disappeared into his burrow, and Dad motioned me to hurry to the fencerow where the long grass would hide us and the slight hump in the terrain would provide

a solid rest for his Winchester single-shot bolt rifle that he had purchased at Montgomery Ward. He insisted on shooting .22 shorts from the little gun, enjoying the challenge of getting a little closer than usual to maximize the thrill of the hunt. A future bowhunting addict was paying attention!

Dad killed that fat groundhog with a perfectly placed shot at about 50 yards with open sights, and many more like it with a precision shot to the ear or eyeball. Refusing to waste any of the cherished meat of anything he killed, he instilled in me the proper and responsible hunting ethic that is alive and well in tens of millions of American families to this day. God bless my Dad.

Squirrel season is when it has always erupted at the Nugent sacred hunting grounds each September. A firestorm of thrilling memories scorches a happy mind with images of my cherished

Continued on page 26

# IF YOUR FEET CAN'T WORK, YOU CAN'T WORK.



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Lever-action Henry rifles



children as I baptized them into the glorious world of marksmanship and hunting discipline with simple .22 rifles. This is a time-honored tradition, lifestyle and heritage that is literally sacred to us. My greatest joys come from sharing these precious experiences with my own kids, grandkids and other children, seeing the heartfelt spirituality of the shooting discipline and hands-on conservation awareness that touches their souls. It is the greatest thing a family can do together.

And everyday on my website (tednugent.com), I field inquiries about how to introduce kids and other new shooters into the wonderful sport that they witness us having so much fun with. Without hesitation, I guide them to the thrill of a single-shot bolt action or lever-action .22 rifle to properly introduce them to the mechanical functionality, basic understanding, inherent safety and sheer fun of this type of firearm.

Nearly 53 years later, my absolute love of .22 plinking and small-game hunting is actually more intense now than way back then as a mere child. The primal scream lives on.

I have a Henry .22 sitting in my pickup truck all the time, and it is ideal for dispatching vermin in my trapline each day, and just all around shooting fun on the ranch. I highly recommend a Henry rifle for yourself and as a great gift for any shooter on your list. 🍷



Henry Acu-Bolt

A perfect example of this fun gun for both novice and veteran shooters alike is the Henry Repeating Arms .22 Acu-Bolt. With ultra-simple single-shot loading, an easy functioning bolt-action and plunger-type striker one must hand-cock per shot, it's just like that old Winchester I was introduced with. It teaches a well defined, rudimentary procedure and a sure-fire system of safety. It's a well balanced little rifle at just over four pounds loaded, a short 36 inches overall with a 20-inch stainless steel barrel. The one-piece checkered gray fiberglass stock sports a unique wide, flat-bottomed for-end that assists in control and accuracy at the bench and in the field.

This is a very handy, rough and ready little plinking and small-game rifle that comes with a cantilevered scope mount, including a 4X scope to boot. Most of the time I prefer the easy to use Williams Fire Sight optic open sights just for nostalgic reasons. The whole package costs right around \$350.

Out of the box, a slight and simple windage and elevation adjustment was done with my pocket knife and I was punching various .22 rounds into the same hole at 30 yards off a sandbag. My shorts and longrifles, even the ultra-quiet CB caps, all went into the same hole. Only the high-velocity type bullets were a hair off, still deadly accurate enough for woodchucks and squirrels at average ranges. My 16-year-old son, Rocco, really enjoyed the open-sighted lightweight rifle and said he couldn't wait for squirrel season to open this fall. Me either!

Witness Uncle Ted enjoying shooting and guns of all types on his "Uncle Ted's Favorite Guns" segments on *Ted Nugent Spirit of the Wild* on The Outdoor Channel three times every Tuesday, or visit [tednugent.com](http://tednugent.com) for all things Nuge.



# Tools professionals can recommend



In the mid-1920's, Blue-Point tools were solid, affordable choices. Today they still are. Blue-Point socket and wrench sets, extensions, and wrenches provide a quality alternative to the tools found in hardware stores and home centers, and are perfect for the boat, the camper, and the brother-in-law.

Folks who don't make their living with their tools still appreciate quality, and now they can find it on a Snap-on truck or on the web at [snapon.com](http://snapon.com). Matched sets in convenient carrying cases keep commonly-needed tools at hand. It only makes sense to buy tools from the people who know the most about them.



Tools you can recommend, available only on your local Snap-on truck **Snap-on**

# Ready, Set, Hunt!

## Tips to tag your biggest buck ever this season

by Mike Hanback



is a great sign, and four or more huge rubs in a tight area are better yet. They tell you at least one mature animal is living close by, likely within 300 acres. Hunt in there.

### If you could set your stand in only one spot, where would that be?

George, Mo.

Somewhere on a hardwood ridge where the wind is in your favor, and where you can watch down into a creek or river bottom with thick cover and fresh deer sign. Across America, whitetails are bottomland animals.

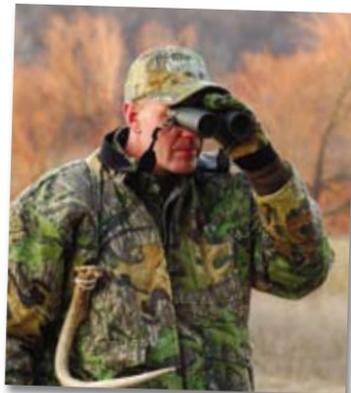
### I've spotted two small 6-pointers, two 8-pointers and one giant non-typical together in a bean field all summer. Will they be around when bow season opens in October?

Will, Iowa

That "bachelor's club" will start breaking up in late September, and by mid-October the boys will be traveling solo as the rut approaches. Some of those bucks will move a mile or more to new winter range while some of them – maybe one of the 8s and hopefully the big freak – will stay right there within 200 acres or so. Keep glassing the field and hunting in the surrounding woods. Your chances of tagging one of those deer are good.

### What kind of tree stand do you suggest? Ken, Va.

Anybody who hunts land with lots of stout, straight trees can't go wrong with a climbing stand. Hook the two parts to a tree, strap in and work your way 15 to 20 feet up in minutes. "Climbers" are faster and simpler to set up than fixed-position stands, which require you to pack in and install screw-in steps or ladders. You can also get a climber down a tree in minutes and move to a new location, which makes you a more mobile hunter. Wear a safety harness at all times in any type of stand.



### Is it true that a huge rub was made by a huge buck with a huge rack?

Karen, Ohio

Sort of. A mature buck with a thick, powerful neck most certainly thrashed a tree as thick as your calf or even your thigh, but the size of his rack is anybody's guess (might be so-so 8 points, might be huge with 10 or more tines). But in any case, a big rub

In the dark of opening morning sneak into the chosen spot and set up a tree stand, or just sit on a hill where you can see and shoot a good way. The throng of people that hunts the opening days will stay a couple hundred yards off the roads and trails. As they move around and shoot, they will drive deer back into the cover-thick area you're watching. Hunt all day for two days and you're apt to shoot a buck fleeing the pressure anytime.



### What precautions do you take to eliminate your scent?

Mitch, W.V.

Scent can't be totally eliminated, but you can knock it back and fool a buck's nose. I wash my camouflage in a scent-eliminating detergent; I dry the clothes outside, store them in plastic bags and toss in a pine or earthen cover-scent wafer until it's time to hunt.

Also, I shower and scrub my body/hair with scent-away soap before a morning hunt, and I try to shower again at midday before the p.m. hunt. In the woods, I spray my day pack, safety harness, tree-stand seat, etc. with an odor-killing solution. Any brand works OK, but I generally use Scent Killer Autumn Formula from Wildlife Research Center. Dick's, Wal-Mart, etc. sell all the scent-control products you need.

### I want to try a trail-monitoring camera. Where should I set it? Gerry, Mich.

Before and during archery season set it a few yards off a main deer trail that enters a corn field, soybeans or a similar feeding area. Later on during the rut, move it to a big scrape that you find on a secluded ridge. Biologists who have taken tens of thousands of trail-cam photos tell me scrapes are by far the best spots. Leave your cam running for a month in November and you'll photograph most of the bucks that live on your land, as well as many of the vagabonds that pass through.

### I'm looking for a rifle cartridge that will work well for timber whitetails and also for mule deer out West. Recommendations? John, Neb.

The 7mm Rem. Ultra Mag. (RUM), introduced in 2001, is one of my favorite under-the-radar rounds. It has an impressive muzzle velocity of 3,425 feet per second, and the 140-grain Rem. Core-Lokt bullet drops only 5 inches at 300 yards. It's perfect for long pokes at mule deer, or 100-yard timber shots at whitetails.

You can't go wrong with a rifle chambered for .270, 7mm Mag. or .30-06. These old-school rounds have dropped more deer than all other hunting cartridges combined. With any of these, sight-in a 130- to 150-grain bullet to hit 2 inches high at 100 yards; then hold on a buck's shoulder and drop the animal out to 250 yards.



### Got any tips to help me rattle up a buck this fall?

Mark, N.Y.

It's all about timing. Bang horns from Halloween to Nov. 18 or so. The more randy bucks are on the move and challenging each other in the rut, the better the odds that one will hear your mock-fight and come to it.

A couple more pointers: You'll rattle in the most bucks on cool, still mornings, from around 7-10 a.m. Rattle from a tree stand or ground blind in remote timber or brush. The less hunting pressure in an area, the better your chances. Use medium-size shed antlers or synthetic fakes to mimic a pair of 2- or 3-year-old deer squaring off.

### I've heard that deer see in black and white. Is this true? What color hunting clothes should I wear? Barb, Mont.

University of Georgia researchers found that deer have only two cones in their eyes (humans have three) and this allows for limited color vision. Deer are essentially red-green color blind. They can likely distinguish blue from red, but not green from red, or orange from red.

Therefore, it is best to wear some green and/or orange clothing (in gun season). But scientists associated with this study say the actual color of your clothes is relatively unimportant as long as you blend in with your surroundings and sit still. Camouflage is best; solid, light-colored clothes are worst. The scientists point out that blaze-orange camo is great for fooling a buck's eyes, but it is not legal in many states.

### I'm going to do all my hunting from the ground this fall. Should I use a pop-up tent blind or go natural? James, Okla.

Forget a blind, which looks like a big, out-of-place blob. It spooks a lot of whitetails and makes others super-leery. Instead, go natural. Hide behind a tree in a good spot and build a small, low-brush blind around you. Sit or stand still in your little hide and most deer will walk within gun range. A few will tip close enough to shoot with a bow. Good luck! 🍀



# Save time, knuckles

**Variable Length Extensions require no adjustment**



## “The techs who have tried them are believers”

**S**nap-on will go to any length to save techs time. Literally. The new Snap-on Variable Length Extensions are simple yet innovative tools that allow technicians to work more quickly and easily. Compatible with all Snap-on 3/8-inch ratchets and sockets, the extensions are great for working around water and fuel pumps and turbo mounting bolts. One tech estimated a Variable Length Extension could save an hour on some of those jobs. “And technicians are going to find time-saving applications that we don’t even know about yet,” said Dan Eggert, the product development manager for hand tools at Snap-on.



Cutaway view of new Variable Length Extension

These unique tools are an innovative new approach to extensions, which have typically been available only in set lengths. The Snap-on

Variable Length Extension is spring-loaded into a socket base so the tool remains in constant contact with the recessed bolt. The extension automatically compresses as the fastener is ratcheted – and the clearance disappears.

“There have been a lot of similar product ideas in the past, but they were in a locked range,” said Dave Ross, hand tools engineer with Snap-on. “They also required a lot of adjustment.” Engineers use the spring to eliminate those adjustments. “As soon as we finished that prototype, we said, ‘Yeah, we’ve got something,’” Ross said.

The technicians who field tested the new extensions agreed. “They liked them instantly,” said Sean Ryan, director of hand tools product management. “Their only question was when quarter-inch extensions will be available.” (The answer: this fall.)

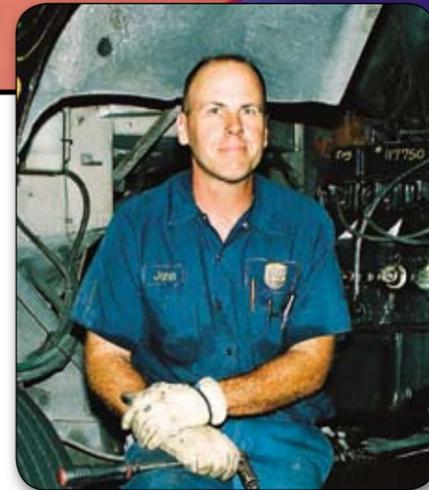
The Variable Length Extensions are made in Milwaukee and feature cold-forged construction for solid performance and chamfered drive ends for easy engagement. The extensions are nickel/chrome plated and knurled for easier hand turning. They are available in a four-inch, which compresses to three inches, or in a seven-inch, which compresses to six inches. Techs can purchase them individually or in a two-extension set.

“The techs who have tried them are believers,” said John Ficcamenti, product manager for hand tools. “They benefit immediately.”

The Engineering New Product Development Team responsible for the Variable Length Extension includes, seated: Rick Franzen, Lab Test Tech and Steve Wente, Prototype Maker. Back: Dan Eggert; Rick Hopper, Product Designer; Dave Ross; and Mike Mowry, Lab Test Tech.



# Runnin' the Table



## Custom billiards business booms

**J**ohn Conod of Eustis, Fla., does plenty of wrenching as a fleet technician for UPS. After hours, he runs his “custom theme” billiard table business: eXtreme Custom Billiards Inc.

The company has built 14 tables so far, with plenty more in development. Conod recently told *Tech* some of the stories behind the eye-popping tables.

Continued on page 32

**Q. How did you get started?**

A. It began as a personal project – restoring an old wooden pool table that was weathering on our lanai.

**Q. Do you play a lot of pool?**

A. Yes, I have played since I was 8 years old. I have played some amateur 9-ball tournaments and still play for fun when I have time.

**Q. What kind of table do you have?**

A. At one time I had four tables set up in the house for promotional purposes. My wife was ready to kill me; currently we do not have any. The table that I envision in my home will look like it is made of wood and have the appearance that it is burning from the legs up.

**Q. Do customers come to you with an idea for a table and then you take it from there?**

A. The customers always ask, “Can you do this?” The answer is always yes, unless it’s something immoral or there is a licensing issue. I and the others involved design the tables on a computer simulation program, so customers see exactly what they will

get. Then we build it. Sports themes are the most popular requests.

**Q. Can you describe how you manufacture the tables?**

A. We experimented with a couple of processes to manufacture our custom tables. The final and most effective method was fiberglass construction, the same way boats are built. I spent two years building the molds with the help of a friend who is an expert fiberglass producer. The pool table parts are built in the molds – then removed, milled and trimmed into a pool table.

The rails, cabinet and legs are all independent from one another. The slate, felt and pockets are purchased from other suppliers. Some of our tables are made of actual diamond-plate aluminum and I think we have the only diamond-plate tables in existence.

**Q. Are these tables high quality by performance standards as well?**

A. The tables meet Billiard Congress of America standards. They are strong enough to hold a parked car – we plan

to actually photograph this and post it on our website. The tables also play very well; the fiberglass is an insulator, so it absorbs the energy produced by the balls, which makes the table very quiet and creates smooth rolling.

**Q. Do you have one that is the most eye-catching or “out there”?**

A. The #88 UPS-themed pool table is our greatest achievement thus far. Unlike the race car, which utilizes vinyl graphics, the #88 table is all custom painted. The cabinet has six different colors on it; my painter really hated me for that one.

The craziest and funniest table we’ve done would have to be the “hippie” table for the Discovery Channel show “Monster House.” That one is custom painted and took a lot of work to complete. We are also very fond of the New Orleans Saints table. The gold, black, and white custom-painted table has a stunningly rich appearance. It’s a jaw dropper.

**Q. Have one or two tables proven particularly challenging?**

A. The “hippie” pool table for “Monster House” was the most challenging. That table had to be built, shipped and set-up on a California TV set with only three weeks notice. There were about 30 people involved with that project, and it went off without a hitch. However, after it was over, I was exhausted from the stress of it all.

**Q. You must take a great deal of pride in the finished products.**

A. I do. After every table is built, I stand back, look at it and say, “WOW!” I love them all.

For example, we built a table for a Vietnam vet who served in the Marines. The table was black and had jungle camo rails with the Marine Corps symbol used



for the sights. The cabinet included his name, years served, the Vietnam service patch and the Marine globe and anchor. The pockets were black leather with his rank on the shields.

When we set up that table for him, he just stood and stared. I saw a hint of tears in his eyes. I was not prepared for that kind of reaction.

**Q. How long does it take from start to finish?**

A. It normally takes four to six weeks for most tables. Anything wild takes longer.

**Q. How do you build outdoor tables?**

A. Our outdoor tables are the same with a few exceptions. The pockets are a leather-look vinyl and the cloth is a marine



cloth called Sunbrella®. We can still use special paint and install custom vinyl graphics on our outdoor tables.

**Q. What is the price range?**

A. Our custom pool tables start at around \$3,500 and go as high as the customers’ imagination. For example, the #88 custom table sold for \$12,500. It all depends on what the customer wants.

**Q. What kind of Snap-on tools do you use?**

A. I use a wide variety of Snap-on tools for my daily job at UPS and with the manufacturing of XCB tables.

**Q. Why do you like Snap-on?**

A. There is no better tool than Snap-on; they feel good in the hands of a craftsman. As a professional automotive technician and craftsman, I rely on quality tools and equipment to achieve the required standards. Snap-on is my preferred tool.

**Q. What would you tell others interested in starting their own business?**

A. The building of XCB has been the greatest challenge of my life. It has consumed a tremendous amount of time and energy. I have received a ton of greatly appreciated support from my family and friends. Like many businesses, it began as a hobby, then a dream, and, then, reality. If you want to achieve something great, the pursuit will be just as great. 🍷

**On the Web:**  
[xtremecustombilliards.com](http://xtremecustombilliards.com)



**In the making**

eXtreme Custom Billiards (XCB) is working with Tony Stewart and the Home Depot® team, along with Borderline Billiards and Bristol Motor Speedway, to create a #20 custom pool table. It will be signed by Tony and auctioned off Aug. 25 after the night race in Bristol. Follow developments at [xtremecustombilliards.com](http://xtremecustombilliards.com).

**Share Your Story**

Do you have a story idea for Tech?  
E-mail us at: [TechMagazine@Snapon.com](mailto:TechMagazine@Snapon.com)



# Breaking the Mold

**Kenneth Clawson of Greenville, N.C., went from U.S. Marine technician to cookie-cutter extraordinaire. How? We better let him explain.**

By Kenneth Clawson

In high school I got my start working for a car stereo shop. (This is where I met my first Snap-on Dealer.) I really had no career plans after high school and always thought I would install car stereos. I purchased the necessary tools, and thought in terms of quality because I didn't ever want to buy them twice and figured I would be in the stereo business forever.

I worked there for a few years, then went into the U.S. Marines. Somehow I ended up in a heavy-equipment platoon – working on everything imaginable, and learning how to weld and fabricate.

The unit was in bad shape tool-wise, with low funds, and I often ended up purchasing my own equipment to get the job done. So, again, I accumulated Snap-on tools that I would later find other uses for.

During my last few months as a Marine, my wife, Melissa, came up with a crazy idea to bake Labrador-shaped cookies for her work. (She worked for a veterinarian.) We lived out in the boonies, 45 minutes away from a Wal-Mart or any other place where you could possibly buy a cookie cutter.

I sat there, looking at a Halloween pumpkin cookie cutter and figured I could make one. I took an old coffee can and cut it into strips with a set of tin snips. I spent hours

bending it – and cutting up my hands. Eventually I welded the ends together and had one crude, instrument-of-death Labrador cookie cutter. It took me forever, but I did it.

The very next weekend Melissa asked if I could make a beagle cookie cutter, since I did “such a good job on the last one.” I laughed and did as I was asked.

This went on for months – making one a week and eventually one or two a day.

Somewhere in the middle of this I did a tour in Iraq. After my honorable discharge, I went looking for a job and ended up at Briggs Construction Equipment (a J.I. Case dealer) doing roughly the same thing I did in the Marines. About the same time, I also found out that Melissa and I were expecting our first child.

My wife was excited and scared but more than anything she was determined to be a stay-at-home mom. I told her there was no way this could happen unless she found some way to work at home. She thought it over and was convinced she could successfully sell the dog and cat cookie cutters online.

The plan scared me. I had saved every cookie cutter, but I would be frightened to put them in the hands of a child – or even an adult. They were sharp!

Also, it took me about an hour to make each one. That's fine for a hobby but too long for a business product. And how could I replicate them exactly – and profitably? They were made out of tin and cut with tinsnips. They were jagged, rough – and rusted if you didn't clean them.

Researching the methods used by other manufacturers provided some insight. All used either copper, tin or stainless steel and connected the ends with rivets or soldering.

I got the bright idea that I could take copper door kickstops, cut them with air shears and bend and solder them. Low and behold, it worked!

For a few months I made every cutter out of copper. It was soft enough to bend, thick enough not to injure anyone and thin enough to be a functional cookie cutter.

Copper was easy to work with, so that sped up the process. But at the same time I also began using Snap-on roll pin punches. They became my best friend. I used the punches to bend the metal and replicate the curves, and it worked perfectly. I also bought a new BluePoint torch to solder the ends together and complete the loop.

The new tools and new material – plus just becoming faster myself – meant the job took five minutes, instead of the hour when first starting. Maybe this was possible.

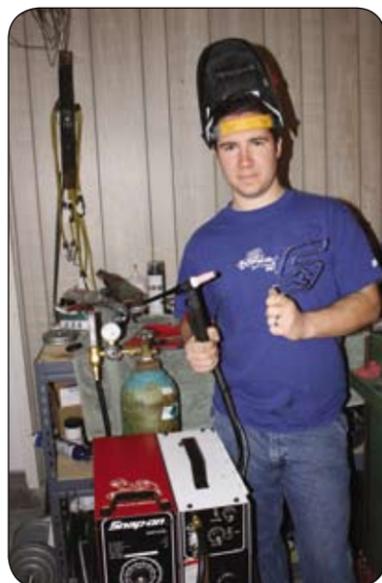
Melissa got the website running. She took pictures of every cutter and posted them, and like magic – days after my daughter was born – we had our first order. Order, after order, after order – and then more orders later it turned into exactly what my wife was hoping for: a full-time job.

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I made cookie cutters all weekend, and some nights after work. Melissa polished them, boxed them and handled all the orders. When we had enough business I bought a metal shear and started buying copper in sheets from a metal house.

Around Christmas I got the bright idea that I could make them out of stainless; it doesn't tarnish, so you would never



On the Web:  
[bowwowsmeows.com](http://bowwowsmeows.com)



have to polish it. The only problem was my hand-me-down welder was old and on the fritz, and I couldn't get the parts I needed. Soldering the stainless cutters wasn't an option because the oxidation turned them black. Drilling and riveting took too long.

I decided to invest in the Snap-on Muscle Mig with the TIG attachment. It works beautifully. Now, I believe I am the only person in the world who welds their cookie cutters.

More and more bakeries and stores started inquiring about purchasing the cutters wholesale. At this point I realized I was selling a tool people were going to depend on, and – like Snap-on – I was determined not to let them down. I also wanted the name on our product to be a sign of quality. From then on, I started stamping all cookie cutters with our logo and offering a lifetime warranty.

To this date, we have not had one complaint – not so much as a broken solder joint or weld – from the 1,000-plus cutters we have made.

The business is work, and getting started took some time and creativity. But it's going well and has allowed Melissa to stay home. When I look back to the first Labrador, I realize we've come a long way. 🐾

# Networking through the maze of multiplexed signals

Diagnostic tools now more crucial than ever

by Matthew Ragsdale

Modern automotive diagnostics can be very interesting, challenging, and fun. To be a top tech today, you need the right mix of tools, training, and understanding of complex information. That's because today's cars come with advanced systems like multiplexing for on-board computer communications.

Multiplexing reduces the amount of wiring and number of parts required to build a car. Think of multiplexing as sharing between systems. More than one system needs to know a particular operating parameter. For example, the antilock brake computer recognizes that the driver is applying the brakes based on a signal sent from the brake switch. Other on-board computers such as the engine and transmission control modules need to know that braking is happening as well. And almost every computer on a late-model car needs to know how fast the car is traveling. Thus they all receive a speed sensor signal from the computer that owns the raw signal.

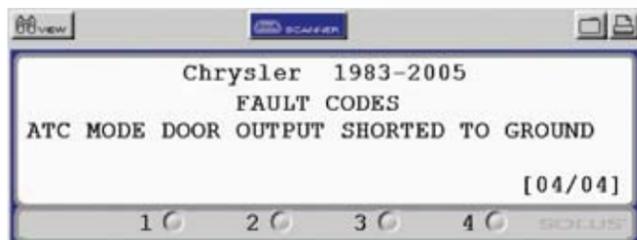
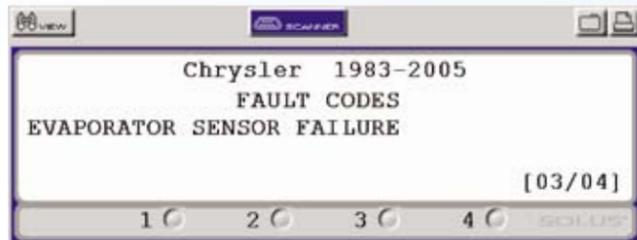
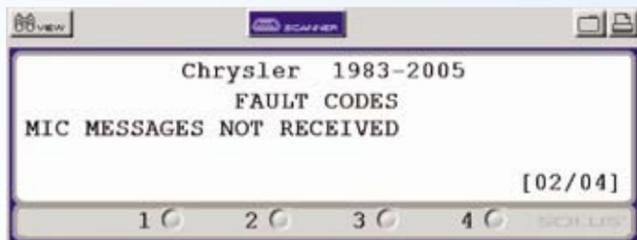
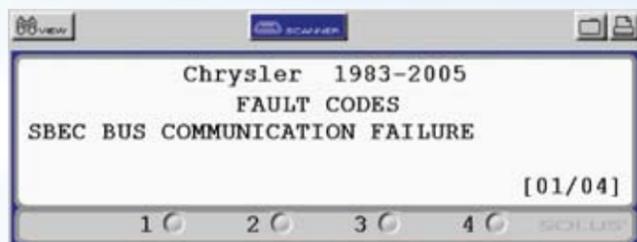
Rather than having dedicated switches or extra wiring to each controller, the module that owns the input communicates with all other networked controllers that the driver is applying the brakes.

To diagnose problems on cars that use multiplexing, the professional technician must have the tools to access the computer data and the signals they read. In turn, technicians must make efficient use of the information that the vehicle is capable of delivering.

My knowledge of multiplexing and scan tools enabled me to have some fun diagnosing a vehicle with a list of complaints. The patient was a 2001 Chrysler Sebring Sedan equipped with a 4ITE computer-controlled automatic transaxle. The customer's complaints were as follows:

- The gear selector display (PRNDL) did not work properly.
- The speedometer needle was erratic.
- The headlamps did not work properly.
- The car would lose power and cut off at times.

As always, the first thing I did was verify the concern while using my Snap-on SOLUS scanner during the test drive. SOLUS has great coverage of Chrysler systems. It also has a fast update rate in graphing mode that enables me to identify problems efficiently that I could miss with other scan tools.



I placed the vehicle into drive and started to leave the parking lot. Immediately I noticed both the PRNDL display and the speedometer began acting erratically. After driving a few miles, the engine cut out. I also noted that higher electrical demands made the symptoms more pronounced.

Using SOLUS to read codes in several computers, I documented the following laundry list of DTCs:

#### The Body Controller stored the following codes:

- SBEC Bus Communication Failure;
- MIC Messages Not Received;
- Evaporator Sensor Failure;
- ATC Mode Door Output Shorted To Ground.

#### The Engine Controller stored the following codes:

- P1695 No Body BUS Messages
- P1698 No Transmission BUS Messages

#### The Transmission Controller stored the following codes:

- P0120 Throttle Position Signal
- P1792 Battery Was Disconnected

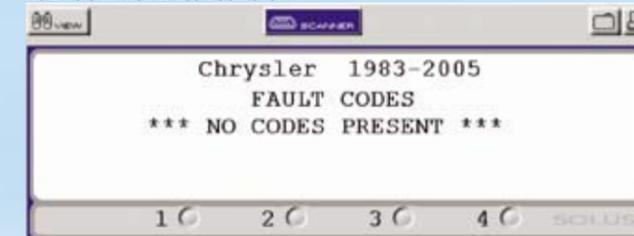
No DTCs were found in the Antilock Controller.

Since the speedometer was erratic, I wanted to watch scan data related to the speedometer to see if the speed signal matched what the instrument cluster displayed. More importantly, I wanted to see if there was a correlation between the erratic speed signal and an increase in the electrical loads in the vehicle. Sure enough, the greater the electrical load, the more pronounced the symptoms.

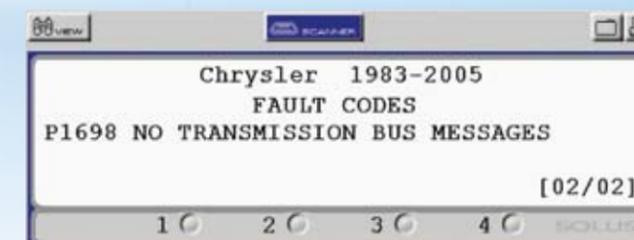
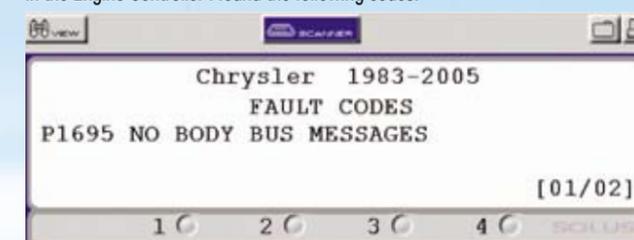
Now I had enough information to take a focused direction. I attempted communication with the transmission control module when the problem occurred and noted that the communication would drop out. This particular system uses a shared vehicle speed sensor on the communications bus. The TCM is what translates the speed sensor information and converts it to vehicle speed. This signal is transmitted to the PCM via a dedicated line. Further, the TCM supplies other modules with vehicle speed data via the PCI bus. This allows BCM, MIC, and CAB modules to make use of the data.

Since the speed signal was coinciding with the symptoms, and the symptoms became more pronounced as electrical loads

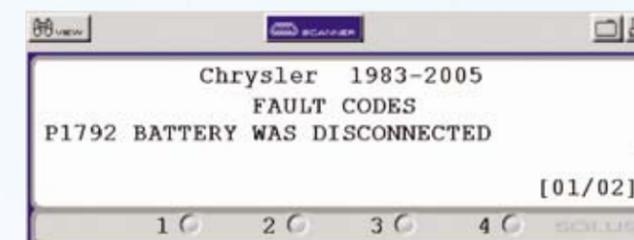
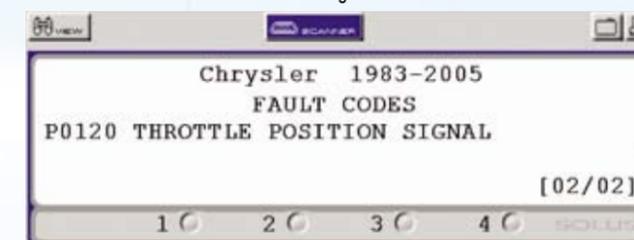
#### No DTC's in the Antilock Controller



#### In the Engine Controller I found the following codes:



#### The Transaxle Controller had the following codes:



Continued on page 38

# 1 HYDRAULICS

# 2 ROTORS

# THREE LINES, ONE DIRECTION.

# 3 FRICTION



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increased, I decided that a close look at the power and ground connections at the TCM would be in order. For this job, I chose to use the Vantage PRO. Vantage PRO gives me the versatility I need should the diagnosis require more than performing simple voltage drops.

On the TCM, I first performed some voltage drop tests at the ground pins. The results from that testing indicated that the voltage drop would vary between 1 and 12 volts depending on the electrical load on the system. The graphing and recording capabilities of my Vantage PRO allowed me to perform some other checks simultaneously without having to concentrate on both readings. That's because Vantage PRO is always measuring and recording data in the buffer.

A quick glance at the service information identified G108 as the ground responsible for those circuits. It's located right below the TCM itself.

In this case, the ground was loose; I could turn the fastener by hand. I cleaned the ground and tightened the fastener to specifications. This eliminated my excessive voltage drop on the ground circuit and resolved all of the customer's complaints.

When diagnosing cars that use multiplexing, having the ability to access multiple systems with a scan tool like SOLUS is more important than ever. It displayed the data in a useful manner, which allowed me to be more efficient, more focused, and made the diagnosis a fun challenge. Adding the versatility of Vantage PRO once I needed to perform component-level testing made the job a snap. 📸

*(Matthew Ragsdale is a World Class Certified General Motors technician. He also holds an ASE Automobile Master with L1 and certifications from various other OEMs. He works as a technician for Big Wyoming Buick, Pontiac, Cadillac, GMC in Casper, Wyo.)*

Loose ground wire



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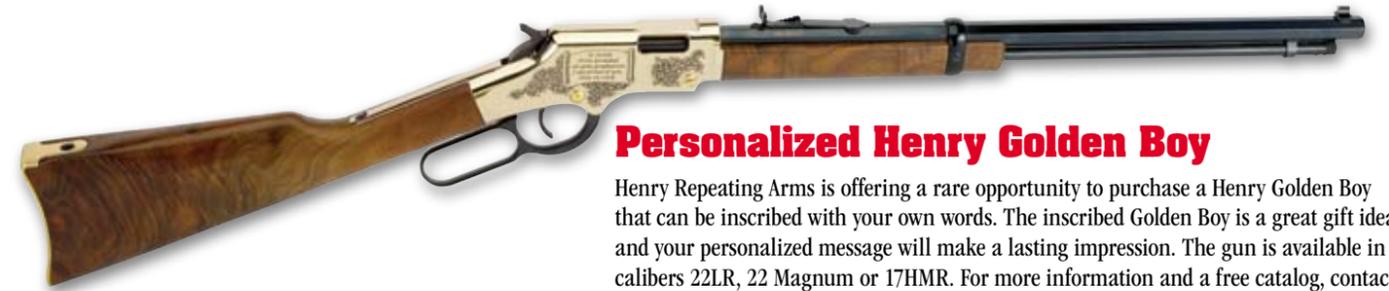
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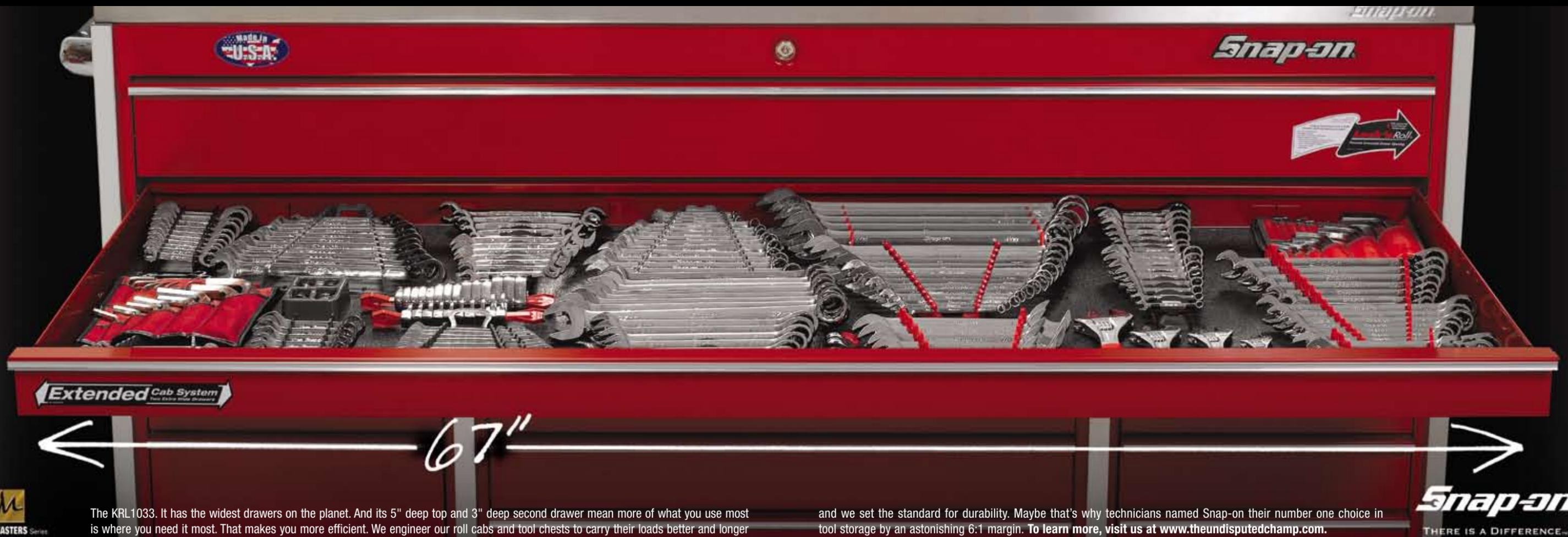
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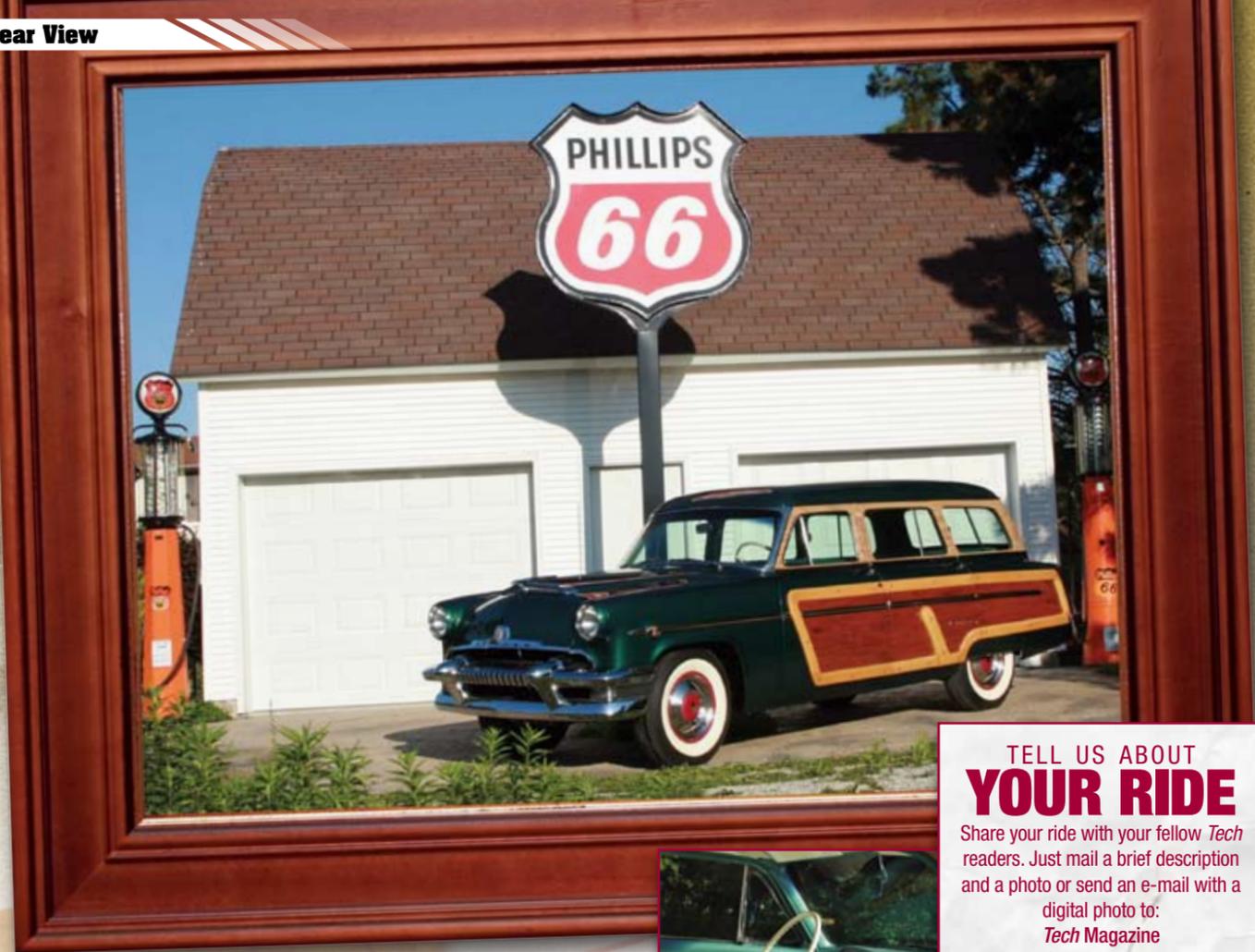
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# MAPLE MARVEL

In 1979, Bob Kuehn of Stanton, Neb., acquired his first car, a 25-year-old Mercury. Now with six at age 42, it's fair to say that the owner of Kuehn Auto Body is a certified '54 Mercury fanatic.

A beautifully restored woody wagon is an outstanding example of Bob's penchant for detail. With the exception of dual exhausts, the car is all original including the 6-volt electrical system. A third seat is the only factory-installed option.

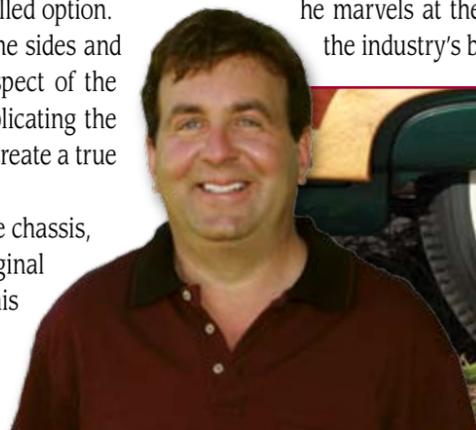
The two-tone maple panels that grace the sides and the rear tailgate were the most difficult aspect of the frame-off restoration. In the process of duplicating the originals, a local cabinetmaker helped Bob create a true maple marvel.

Bob also did a masterful job restoring the chassis, running gear, body and interior to their original showroom quality. Although rock solid, this

rare wagon suffered some serious damage after years under the Arizona and California sun. Approximately 300 were built using real maple before the 1954 conversion to fiberglass. How few remain is uncertain.

With only 90 miles on the odometer since completion, this wagon is no daily driver. In a rare showing at the World of Wheels in Omaha, Bob and his marvelous Monterey captured awards for best-restored original car and best-restored interior and picked up the people's choice trophy in his class.

From his 20-year-old 3/8-inch socket set to his most recent purchase, Bob's tools of choice are Snap-on. On a daily basis, he marvels at the quality, reliability, dealer support and the industry's best warranty. 



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For some people, turning wrenches is in the blood. And Allen Heeke, a 38-year associate of Jasper Engines & Transmissions, now in the Authentic Custom Drivetrains Division, comes by it honestly. You see, his father also worked for JASPER . . . for nearly 48 years!

Even without the shared history, though, Allen's career choice makes sense. "My roots are in the classic muscle cars of the 60's & 70's. When I was younger, I had a 1969 Cyclone with a 428 Cobra Jet engine." Talk about early influences!

"I really love getting back into the classic and muscle car engines," Allen says. "I enjoy helping custom enthusiasts."

And no one does it better than Allen and Jasper Engines & Transmissions. "Our Authentic Custom Drivetrains Division can provide complete photography of the entire remanufacturing process, from teardown to finish. Part of my job is to make sure that the castings

are perfect and that the castings and parts numbers exactly match the originals. When we're done, it's as close to original specs and equipment as it can be."

Allen doesn't leave his passion at work, though . . . check out his beautifully restored 1968 Mercury Cyclone!

Of course, what's a muscle car without muscle? "I did exactly what I tell custom enthusiasts not to do," Allen admits. "I upgraded from a 390 c.i. to a 427 c.i. Ford engine with a larger, solid-lifter cam and added a JASPER Class II automatic transmission with a Ford 9-inch 3.5:1 differential. Hey—you're not going to print that, are you?"

Of course we are, Allen.



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