

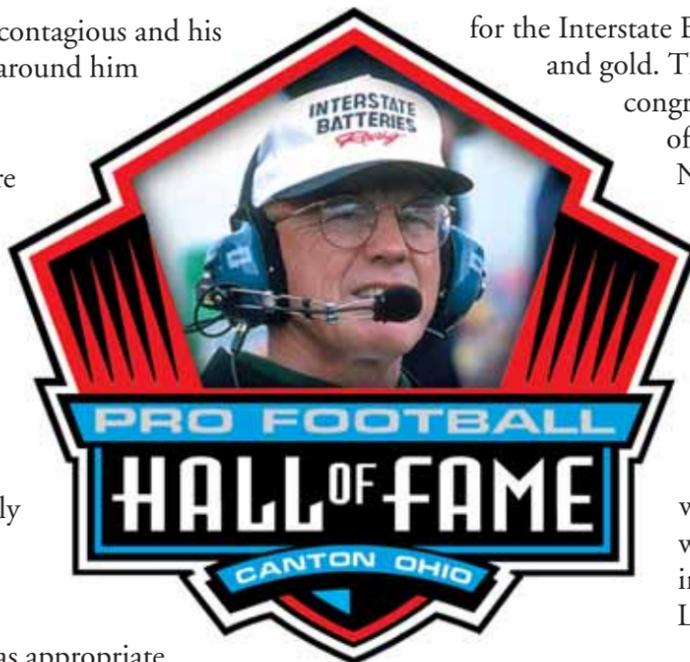


Interstate Celebrates Joe Gibbs' Induction into the Pro Football Hall of Fame

Joe Gibbs. His winning spirit is truly contagious and his ability to bring out the best in those around him is matched by few.

That's why all of us at Interstate Batteries are extremely proud to be associated with Joe, and why we're so excited to share the news of his induction into the Pro Football Hall of Fame. To celebrate his official entrance into football coach legendry, Interstate Batteries created a special one-time paint scheme for our #18 Winston Cup car, which ran during the Hall of Fame ceremonies weekend at the July 28th race in Talladega, Ala.

Since he celebrated three Super Bowl wins with the Washington Redskins, we felt it was appropriate



for the Interstate Batteries #18 to dress in Redskins burgundy and gold. The special design also featured a message of congratulations from Interstate, the entire crew of Joe Gibbs Racing and the thousands of NASCAR fans and racing associates who love and respect Joe Gibbs.

(Besides honoring Joe, we feel the special Hall of Fame car is likely to get lots of media attention, which is good for your battery sales, too!)

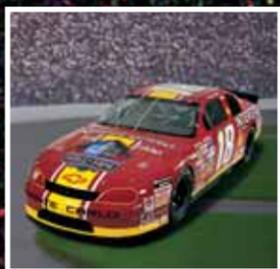
While all that excitement was going on with the Joe Gibbs Race Team at Talladega, we feel sure that the third-winningest coach in the history of the National Football League accepted the prestigious honor of

Please see **GIBBS** on page 3

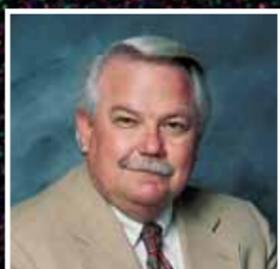
INSIDE THIS ISSUE



Meet Engine Builder John Wilson Pg. 2-3



Special Hall of Fame Race Car Pg. 3



TECH TALK Smart Battery Systems Pg. 6

"Beyond the Norm"

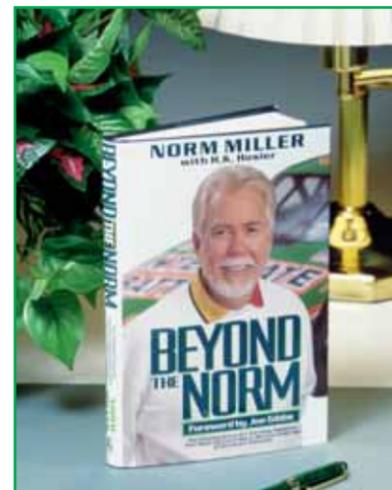
Norm Miller's road to becoming the man he is today was definitely unpaved, and what a ride it's been!

Back in the sixties, Norm Miller came to Dallas in hopes that his new job with Interstate Batteries would help him find a way to make a good living. Little did he know what an amazing story was about to unravel.

Now the Chairman of Interstate Batteries shares his tremendous story in a new book, "Beyond the Norm." If you've ever wondered what makes this company tick, you'll want to learn about Norm Miller, or as we call him, Ol' Norm. According to NASCAR Team Owner and former Washington Redskins Coach Joe Gibbs, who wrote the forward to "Beyond the Norm", "Norm's story is powerful.... His unique experiences in business and in life will definitely give you plenty of food for thought."

With the help of Writer H.K. Hosier, Norm shares what he's learned along the way in three exciting and successful decades at Interstate Batteries, which operates with some pretty innovative and inspirational business methods.

Radio commentator Paul Harvey said, "A good *businessman* can be a *good* businessman. Norm Miller has demonstrated that fact. Now the secrets of his success, personal

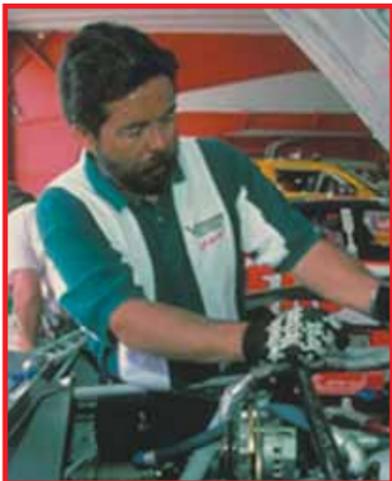


"Beyond the Norm" gives keen insight into what makes Norm Miller and Interstate uniquely successful.

and professional, are no longer secrets." "Beyond the Norm" is now available at bookstores nationwide. ■

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John Wilson Engine Builder

Though John Wilson isn't an official member of the pit crew for the Interstate® Batteries/Joe Gibbs Racing Winston Cup team, his job is crucial to the performance of the #18 on raceday. More than the engine builder for the shop's in-house program, John manages the engine shop by hiring employees, keeping track of equipment, staying on top of technology, and of course, overseeing the building and upkeep of the motors for Bobby Labonte's Monte Carlo. We wanted to learn more about John's important role on the fast-paced Interstate Batteries team.

What part of your job do you enjoy most?

I really enjoy going to the races, and I think all the guys in the engine shop do. We have this hands-on experience with an engine, getting it prepared for this moment, and it doesn't mean anything till we see it go around the racetrack. That's my favorite part.

Do you have any raceday responsibilities?

Not during the race. On Sunday mornings I check the engine out and make sure everything's fine. Once the race starts, I'm just a spectator.

What are the size and compression of a Winston Cup engine?

We start our engines off at 356 cubic inches, and according to NASCAR rules, an engine can never get up to 358 cubic inches. So we're working on a two-cubic-inch difference, but working on those two cubic inches we probably rebuild the engine 10 times. Now compression ratio at Daytona and Talladega is 14:1, but at any other racetrack you go to it's what you want it to be. About the most you can get anywhere is 15:1.

How similar are a street-legal engine and a racing engine?

They're 100 percent similar if you look at them – still the basic design that Chevrolet had back in 1954. But none of the parts that we use is in any kind of street car. The block, even though it's a copy of a 1955 Chevrolet block, is

What's the total horsepower of a Winston Cup engine?

Well, people's dynos vary a lot. A good Winston Cup open motor – something you'd take to Charlotte – is about 720 horsepower on our dyno and somewhere around 520 foot-pounds of torque. We can take that same motor to some

ports. They've got templates for the cylinder heads and manifolds, just like they've got templates for the bodies. In any gray area where there isn't a template, we're allowed to do whatever we want. But, NASCAR might sneak up on us and make an on-the-spot rule like "You can never do that again."

The "Engine" Behind the Engine

something Chevrolet made for racing. Actually, other than dow pins and a couple of fasteners, there's really nothing in an engine that comes from a street car.

How long does it take to build an engine from start to finish?

Well, you've got up to a week for machining the block, depending on how the block was when you started. Cylinder heads – you can have a week involved in those

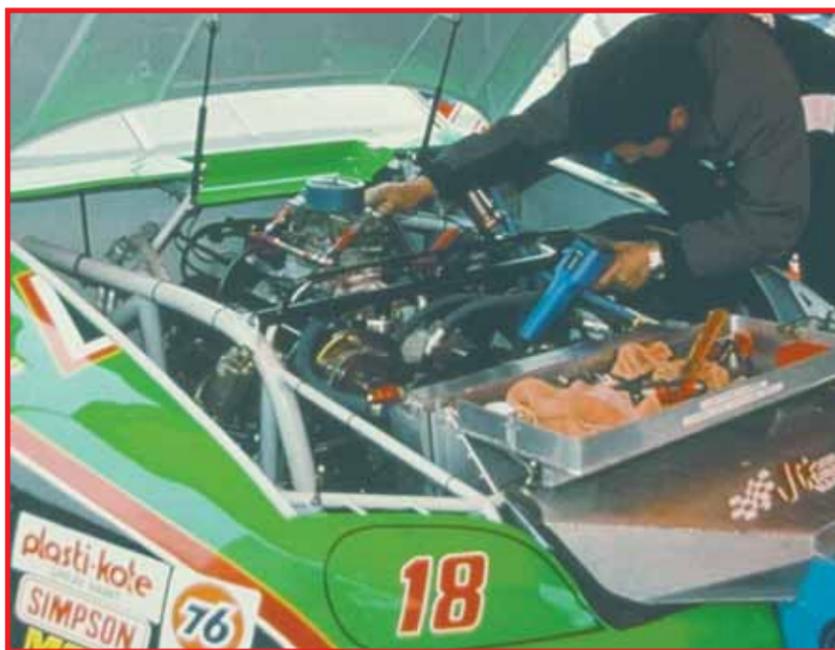
other shop and it might say 730 or 740, depending on how their dyno is set up.

We're real careful here about testing being *testing*. You can do lots of things to make a big number just to make yourself feel good. But we look at our dynos to repeat from day to day, run to run, so when we do make a change on the engine and see a plus or a minus, we can believe that. We've probably got one of

We're pretty restricted which, to a point, is a pretty good deal. If you don't have a rule and decide to step beyond that boundary, you're going to make more horsepower than the next guy.

How many engines does Joe Gibbs Racing have?

Well, we don't have enough! We started this thing a little late; we weren't even supposed to be doing the engines this year but next year instead. Right now, we've got four restrictor plate motors and eight open motors. We're a little low on the open motors, but what we're trying to do is have eight quality ones instead of having eight quality ones and four that we don't particularly care for, plus a couple more that we'll never use. We've got four motors that we're proud of, and we're working on getting the other four up to those standards.



Setting the timing on one of the Chevrolet engines, John Wilson does his part in preparing the team for raceday.

things.... So if you spread it all out and one person does it – block cylinder heads and all that stuff – it could take a month. But luckily we've got enough people so that somebody's working on the block while somebody else works on the heads, etc. If we've got all the parts in the shop when we decide to build a new engine, it takes a little over a week.

How much does the engine cost?

If we were going to sell one of these motors, we'd have to sell it for somewhere between \$35,000 and \$40,000. That's minus the clutch, the carburetor – just a basic motor. But a restrictor plate motor would cost more.

the lowest-reading dynos on the circuit, but we like it that way. For instance, at Michigan where we qualified fifth, we were the fastest Chevrolet, and we did it with 718 horsepower. Well, there were people there saying they had 740. It just depends on the dyno.

How heavily do NASCAR rules affect your job?

They affect everything! NASCAR pretty much has things mandated to their liking. They leave the bore and stroke of the engine up to us, just so we don't go over the cubic-inch limit. Really, the only freedom we have is what we do to the cylinder heads and the manifold, but still there are rules for those as far as height of the

How much time do you get off in the typical year?

I guess I haven't had a vacation since 1988. Taking time off just depends on the circumstances. I became a head engine builder in '88 and kept telling myself that as soon as I got caught up I'd go ahead and take a week or two off, but it just hasn't happened yet. A lot of times, though, I'll take my wife Donna to a race, and that's almost like a vacation.

Why do you have a qualifying engine and a race engine?

A qualifying motor might have some parts in it that are a little bit lighter, that might accelerate a little faster. The parts aren't quite as reliable, but they might make just a little bit more horsepower. They'll be able to make that one practice and those two qualifying laps, and then it's time to get it out of there and put something in that's more reliable and stronger, so you can run that 500 or 600 miles.

Please see **WILSON** on page 3

Gibbs Joins Hall of Fame Legends



being inducted into the Pro Football Hall of Fame in the same spirit as he celebrated his Super Bowl wins: crediting the teams that shared his success.

One of his former players, Eric Williams, summed up the team's general opinion of their charismatic leader: "In a game with a lot of liars and cheaters and crooks, Gibbs was different.... He was a shining star. He was honest. He was brilliant at what he did. You couldn't ask for more of a coach or a human being."

Although Joe shocked America when he retired at such a successful point in his football coaching career, it was no surprise that he was voted into the Pro Football Hall of Fame in his first year of eligibility.

H.A. "Humpy" Wheeler, president and general manager of Charlotte Motor Speedway, said of Joe, "His teams were

winner on the playing field because he was a winner in life. I'm sure Joe feels a little awkward being inducted into the Hall of Fame as an individual. He has emphasized "teamwork" in all his endeavors.... Joe Gibbs possesses all the qualities people

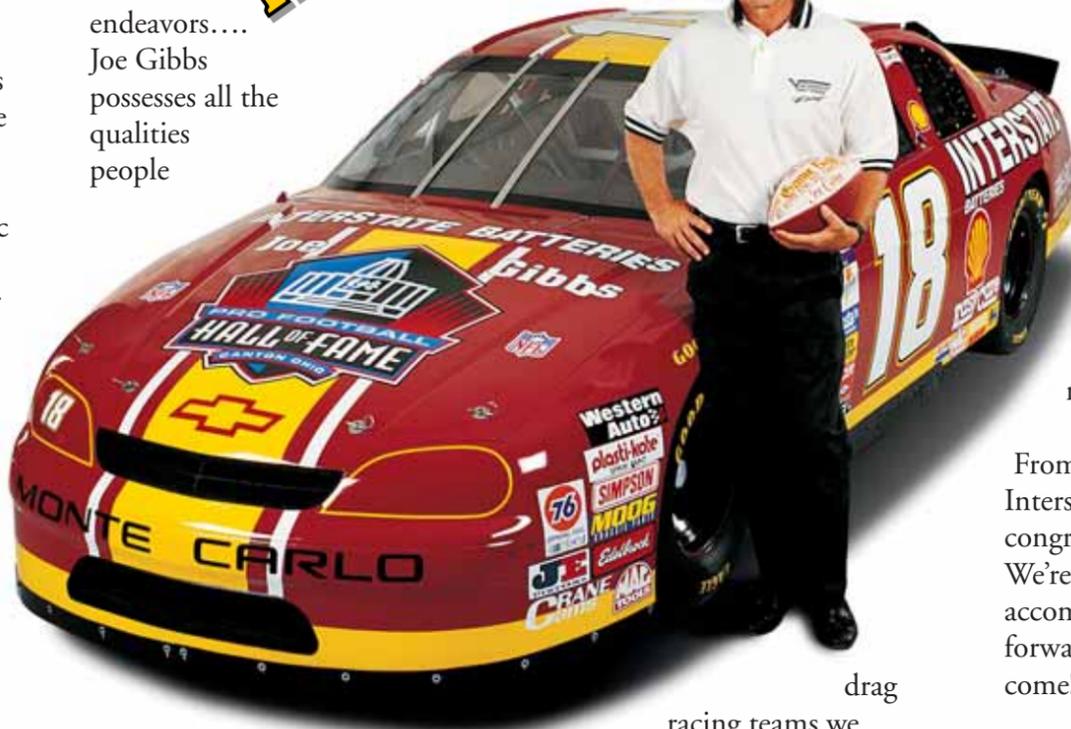
brings to our race team as owner of the Winston Cup and

NFL's most prestigious distinction: a great ability to assemble teams and motivate them to the top.

Chairman of Interstate® Batteries, Norm Miller, said, "While some of today's professional athletes may not be role models for youngsters (and us oldsters too), Joe sure is. He is truly a man to admire and respect. Interstate is privileged to partner with Joe in sponsorship of his Winston Cup racing team."

From Norm and all of us at Interstate, our heartiest congratulations, Coach Gibbs! We're proud of all your football accomplishments and look forward to all your race wins to come! ■

Special Edition Hall of Fame Race Car

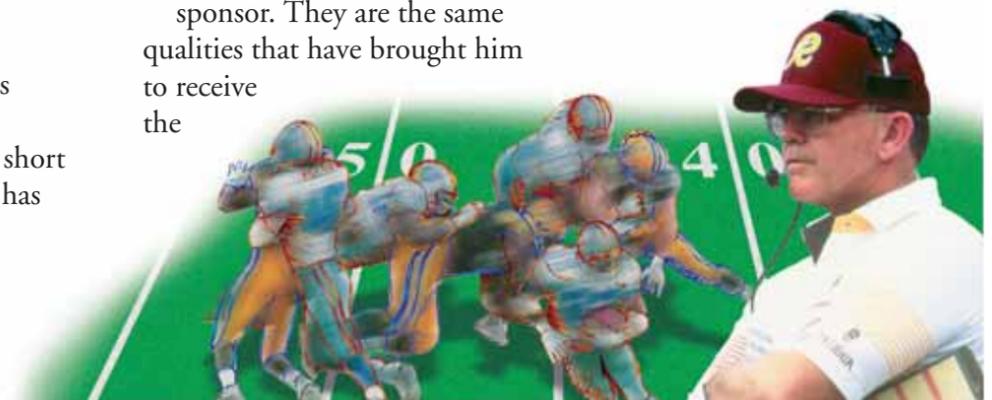


drag

racing teams we sponsor. They are the same qualities that have brought him to receive the

look for in a friend and leader. The motorsports community is proud to have him as a representative now. In his short tenure in auto racing, Joe has had a major impact."

All of us at Interstate Batteries appreciate the excellent qualities Joe



You've been working in motorsports for 20 years. How did you get started?

I started out racing when I was 13 years old, going to drag races with my cousin. He was older, and he taught me about engines. Later when I got old enough, I had my own drag car and did the engines in that. Then I finally got an opportunity to do it professionally. I went to work for an engine company out in California, left there and went to work for a better-known company in California to do Busch motors for Dale Earnhardt's car. I came out here to Charlotte in 1986 for a Busch race to take care of the motor in Earnhardt's car. Rick Hendricks was interested in that V-6 program, and I ended up going to work for Hendricks Motorsports a few months later. But I didn't really get to do much V-6 stuff, because I ended up going with Geoff Bodine's team in '87.

The next year, that team split up and I ended up staying in the engine shop a lot more. The crew chief, Gary Nelson, wanted to start an R&D team, but they didn't have any engines. So I ended up doing engines over there at night. Later Rick decided to sell that team to Felix Sabates, and I went along with it. I was the head engine builder over there, and I was there from October 1988 until coming to Joe Gibbs Racing at the end of '94.

What are some of your hobbies, or do you have time for any?

There are a lot of things I'd like to do for a hobby, but there's just not enough time for it. I do like to go home. We bought a new house about three years ago, and we've still got boxes in the attic that have never been opened. I've always got plans for painting this wall or doing this in the yard – but if it weren't for my wife, nothing would get done!

What was involved in starting the engine program for Joe Gibbs Racing?

Well, it was a big project. They had just moved into this nice, new shop, and in the rear was a 6,200-square-foot, empty room – completely unfinished, no plumbing, just a big cinder-block room. I spent the first three months working with builders and ordering equipment. Then I tried to line up some people to start when we finally got the building done.

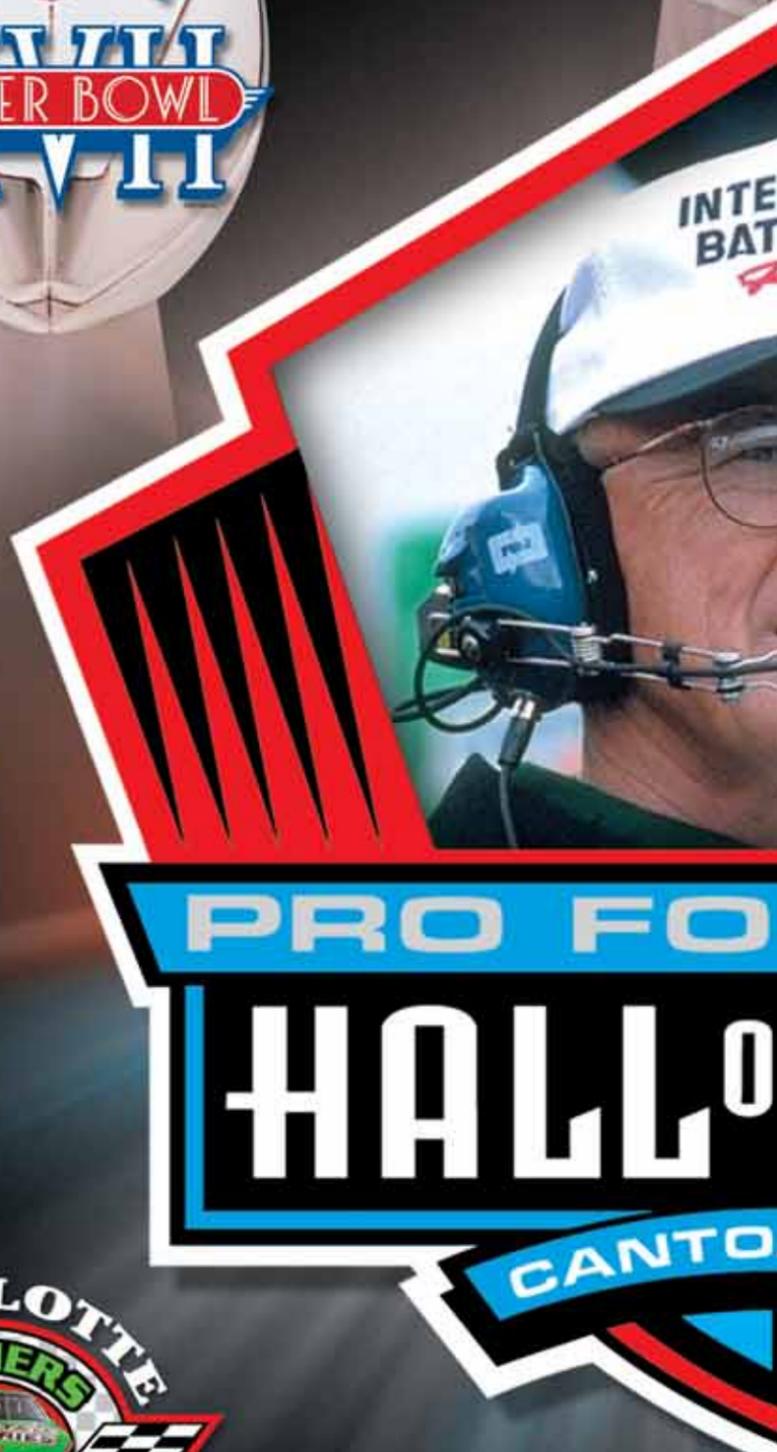
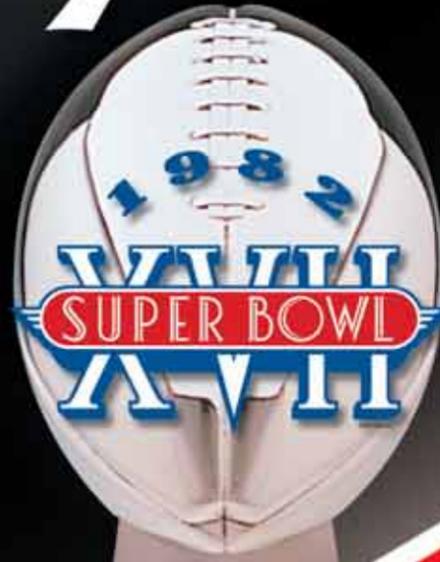
Joe has made things real easy for me because he believes in his race team and he believes in the direction that we're trying to take. So far we've been pretty successful with the engine program even though it's in its infancy. Joe has given us the opportunity to add a lot of very expensive equipment, and once we get the equipment, naturally we've got to get some people to run it. So we've got a

couple more people lined up. It's just a constant building process for all of us on the team. ■

#18 New Addition

Interstate welcomes Race Team Member Peter Jellen to the #18 pit crew as Transport Driver / Gas Man! Peter's a great addition to our team, taking the place of Rodney Pickler, who moved on to be a partner in an over-the-road trucking company. We wish Rodney well and are glad to have Peter on board!

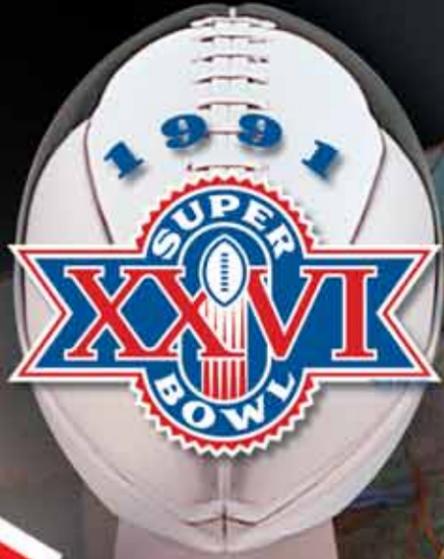
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CONGRATULATES JOE GIBBS

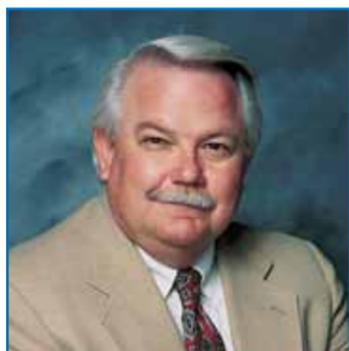
Super Bowl trophy photo ©Michael Burr/NFL Photos

TECHTALK

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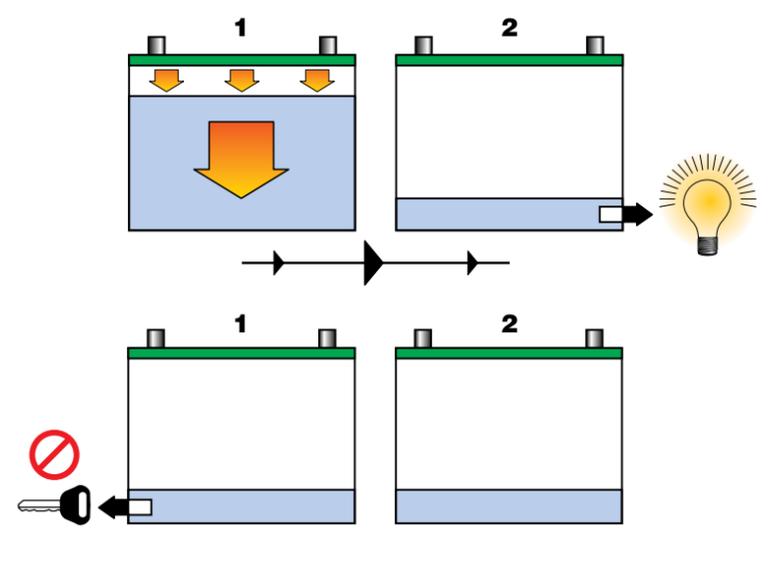
I receive a number of calls each week from people requesting information on special or unusual battery applications. One of those that comes to mind was a call from a government agency needing to separate 12-volt accessory batteries from starting batteries. They needed 10 hours of power to operate all of their on-board surveillance equipment.

Not every call I receive is that unusual, but it is a good example of using multiple-battery 12-volt systems. More typical examples include vehicles with “boom boxes,” emergency vehicles and tow trucks. These vehicles have individual discharge needs which normally require one starting battery and one or more deep cycle batteries to power accessories.

Parallel Battery Systems

When two or more batteries have all (+)'s connected to (+)'s and all (-)'s to (-)'s, they are parallel to each other. The strength of this system is derived from its total current capability. For example, if two 600 Cold Cranking Amps (CCA), 120-min. Reserve Capacity (RC) batteries are connected in parallel, the total current would be 1200 CCA and 240 RC. The weakness of these systems is the voltage level's inability to exceed the weakest battery. If one of the batteries has a weak or shorted cell, the total voltage of the system is limited to the weakest battery. In other words, one battery will discharge current to

FIGURE A



Accessories connected to battery #2 rob power from battery #1, your starting battery, leaving you with two dead batteries.

maintain the other. The most efficient parallel systems have batteries with equal capacities, voltages, group types and ages.

Simple Parallel Systems

When used as a single-purpose discharge load, such as starting, a simple parallel system will develop

high levels of current and may be charged as one unit. The current from the charging unit will divide among each independent battery depending on recharge needs (state of charge). The problems originate when this type of system is used for multiple-discharge loads as in starting and accessory use (See

Figure A). This often leads to a no-start condition when the starting battery shares the same discharge load as the accessory battery. It's often necessary to use different capacities and group types of batteries in the same system, which is not acceptable in a simple parallel system.

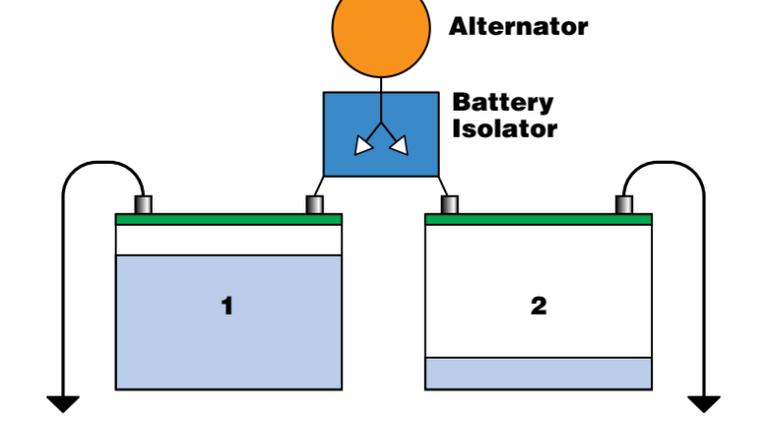
Complex Parallel Systems

When different battery group types and capacities are needed, I recommend that some type of component such as a magnetic relay or an electronic isolator be used to connect, yet separate, the independent parallel systems. The most effective and widely used is an electronic isolator type (See Figure B). From a generic view, an electronic isolator contains two diodes that are connected, at the anode side, to a single contact point. This point ultimately connects through a cable to the positive side of the 12-volt charging system.

The cathode side of the diodes connects individually to separate connection points to the (+) side of the parallel battery system. This permits each system to be charged independently, yet respond to different loads (in amps and duration) without discharging the other. In other words, the accessory discharge load does not interfere with the starting loads due to the one-way electronic diodes, permitting current flow in only one direction.

Parallel battery systems can be a tremendous advantage when you have large current requirements to supply accessory or starting power. When dealing with multiple-discharge load banks, you'll achieve the best results by utilizing a component such as a magnetic relay or an electronic isolator. The electronic isolator is more efficient in its efforts to equalize both batteries. ■

FIGURE B



A battery isolator acts as a check valve through two diode legs, one on each line. Both batteries receive current from the alternator, and the voltage will equalize throughout the system while the alternator is in operation.



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Clinic Date	Clinic Location	Clinic Date	Clinic Location
Aug. 27, 1996	Memphis, Tenn.	Sept. 24-26, 1996	Boise, Idaho
Aug. 28-29, 1996	Jackson, Miss.	Oct. 8, 1996	Toronto, Canada
Sept. 10-11, 1996	Dallas, Texas	Oct. 9, 1996	Brampton, Canada
Sept. 16-19, 1996	Boston, Mass.	Oct. 21, 1996	Sacramento, Calif.
Sept. 23, 1996	Columbia, Wash.	Oct. 22, 1996	Sacramento, Calif.
Sept 24, 1996	San Francisco, Calif.	Oct. 23, 1996	Concord, Calif.

Dear Interstate...

The Car Didn't Make It.



The Battery Did.



To Whom This May Concern:

I would like to thank Interstate® Batteries for making a reliable product.

On July 31, 1995, I was involved in a serious car accident. My car was totaled as well as my body! The driver of the other car involved was at fault; she ran a red light and proceeded to turn left in front of me. The amazing thing was that even though the car was impacted mostly on the right-hand side, causing the battery to be completely smashed, my car still started and I was able to drive it home.

This impressed many of my friends. Not one of them can recall ever seeing a battery smashed and still working properly. Thank you.

*Sincerely,
Sheila Huckaby
California*

Dear Interstate:

I saw your write-up from satisfied customers in the Current. In April of 1996 I finally had to replace my boat's starting battery. The boat is a 1976 24-foot Formula with a Ford 351 that has 233 horse power. This engine requires two batteries. When I brought the battery into Interstate Batteries of Twin Ports, everyone came out to look the battery over. I was surprised to see the battery was 13 years old.

This boat is used on Lake Superior, and the Interstate batteries have given me excellent service. My boat didn't have exceptional wintertime storage. But even if the battery was left in the boat or stored in the basement, it always held its charge. Hats off to Interstate!

*Sincerely,
Wes Johnson
South Rouge, Wis.*

Dear Interstate Batteries:

Whenever I find a product that does not stand up to claims made by the manufacturer, I will let them know. The same applies when a product excels in performance as does your Interstate battery.

I purchased your 60-month Mega-Tron battery on Dec. 28, 1989, for my 1986 Ford Tempo, and it's still performing without one single failure since Day One. Considering the very cold winters in New York, I must say I'm completely satisfied and then some. It's already one year to date past the 60-month warranty period.

I will continue to purchase your batteries and recommend them to others.

*Sincerely Yours,
Angelo Stallone
Elmont, N.Y.*

Dear Interstate:

Our business is excavation and used car sales, and we move many different kinds of vehicles. A few years ago we started using a major brand of batteries for our equipment and trucks, and we found that the batteries were not lasting for more than two years under normal use.

Many times these batteries would be seven-year batteries and they would have some reason not to warranty them. We decided to change to the Interstate line and have since become Dealers. We have not had a bad battery since!

*Sincerely,
Timothy F. Desormo
Watertown, N.Y.*



Dear Interstate:

Two years ago my brother was cruising around Storm Lake in my father's boat. For some reason the electric anchor let go and wrapped around the prop of the motor. The motor stalled and as my brother went to the back of the boat to untangle the anchor, the boat took on water and eventually sank. My brother and his wife were rescued.

The boat is 13 feet long and sat in 14 feet of water for 12 hours. When the boat was pulled out of the water, the light and bilge pumps were still on. When the motor dried out, that same Interstate battery started the motor right up. The battery was at least two years old, and my father still uses it today.

We tell everyone about your product.

*Thank You,
Helen Campbell
Storm Lake, Iowa*

If you have an interesting Interstate battery story or comments, we'd like to hear from you. Please write to:

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Own An Official Racing Clock!



Step into race time featuring the colors and style of Interstate's #18 Monte Carlo driven by Bobby Labonte!



This clock has a Winston Cup flair that features a bold "Interstate Green" face and Bobby Labonte fans' favorite time – 18 o'clock! At just \$79.95 each, these clocks are sure to rev up every minute of any race fan's day. But time's a racin', so you'll want to order today!

To Order:
Call 1-888-266-6388
OR
Fill out the form below and mail along with payment to:
Neil Bonnett Racing Collectables
1927 11th Avenue North
Bessemer, Alabama 35020

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Ship to: Name _____ Address _____ Phone (____) _____

ITEM	QTY	PRICE EACH	SUBTOTAL (Qty. x \$79.95)
#18 Tire Race Clock		\$79.95	
Shipping/Handling*			\$9.95
Tax (8% AL only)			
TOTAL			

*Please allow 4-6 weeks for delivery.

Check or money order made payable to Neil Bonnett Racing Collectables

VISA/MasterCard

Cardholder's Name _____

Expiration Date _____

Account # _____

Credit card orders may also be faxed to: **(205) 425-7533**

Don't Get Cut Out of Extra Profits!

While warm weather is in full force and green grass continues to thrive – you've found a great way to power up your customers' lawn mowers with Interstate's highly-rated Lawn & Garden batteries. As an Interstate® Batteries Dealer, you can offer your customers these products that, as with any Interstate product, have the highest quality you'll find anywhere.

One Interstate Dealership in particular is going strong! K. & T. Saw Shop in Somerset, Ky., sold more than 500 replacement units in 1995 and is well on its way to exceeding that mark in 1996; IBS of

Somerset Distributor Butch Tyson stays busy just trying to keep up with them!

Since the shop's beginning in 1990, K. & T. owners Kevin Caudill and Tim Beasley have specialized in all types of outdoor power equipment, such as riding mowers and string trimmers, and White Outdoor Products recently presented them with a national award for being their No. 1 Dealer.

As Kevin and Tim would say, you can count on Interstate Batteries for the best products that are always backed by strong service. Now that it's nearly time to think about Fall,



Distributor Butch Tyson and Dealers Tim Beasley and Kevin Caudill make Lawn & Garden battery sales count!

you may want to ask your local Interstate Batteries Route Sales Manager to find out how you can power up your customers'

automotive and *specialty* battery needs with Interstate's Fresh Power. Guaranteed! ■

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Look for us on the Internet at www.interstatebatteries.com

"For Christ also died for sins once for all, the just for the unjust, in order that He might bring us to God, having been put to death in the flesh, but made alive in the spirit."

1 Peter 3:18

For information about how you can find salvation through Christ Jesus, please contact Jim Coté at INTERSTATE® BATTERIES, 12770 Merit Dr., Ste. 400, Dallas, TX 75251-1292 or call (214) 991-1444.