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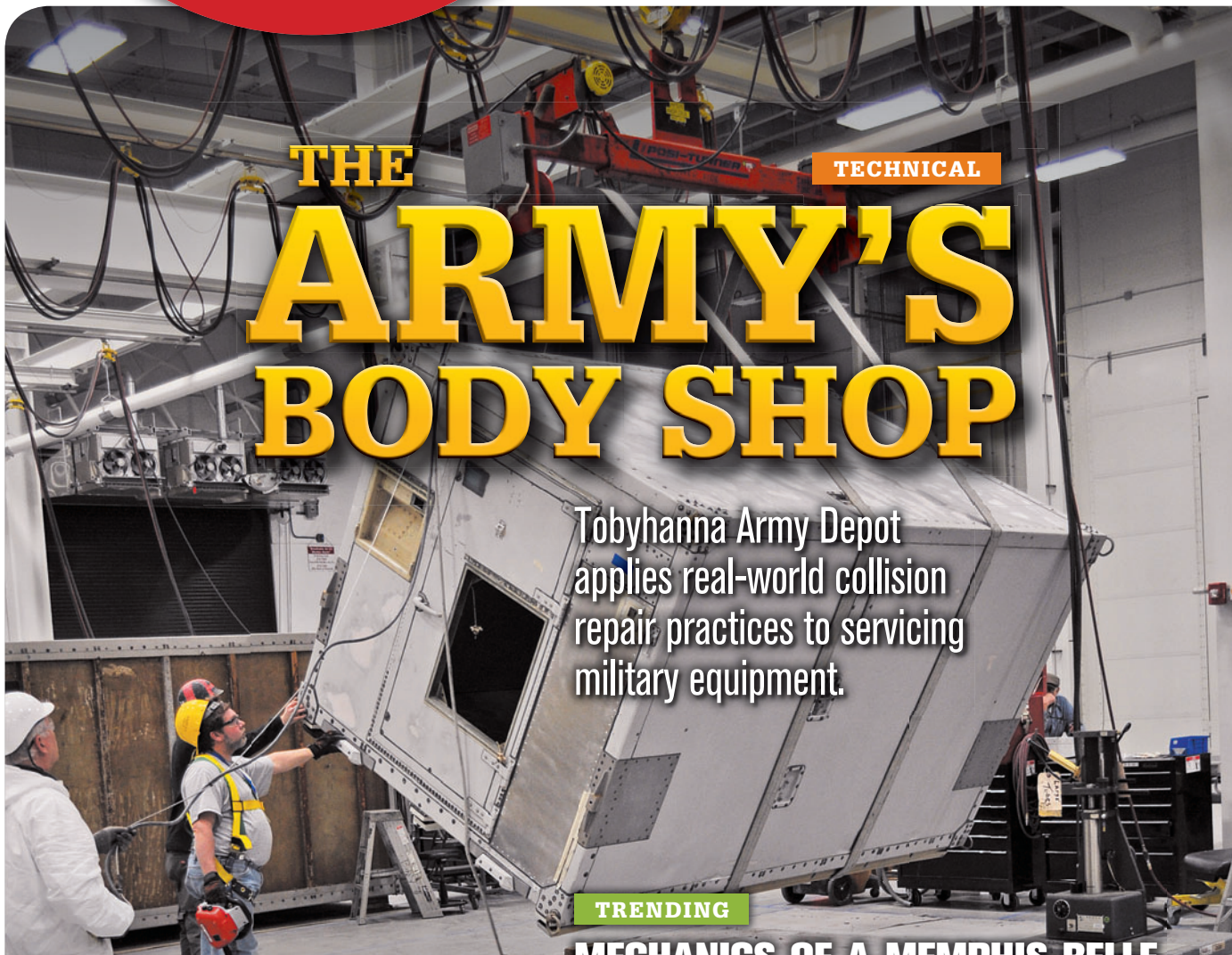
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Talk Shop Anytime



VOLUME 53 | NUMBER 5  
MAY 2014



## THE ARMY'S BODY SHOP

TECHNICAL

Tobyhanna Army Depot applies real-world collision repair practices to servicing military equipment.

TRENDING

MECHANICS OF A MEMPHIS BELLE  
A LOOK AT THE B-17 FLYING FORTRESS

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IN HONORING A SOLDIER, SHOP SETS ITSELF APART

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BY DONNY SEYFER | CONTRIBUTING EDITOR

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FEATURE

## GO BEYOND THE CALL OF DUTY TO SERVE YOUR CUSTOMERS

BY JAKE RODENROTH | ABRN TECHNICAL EDITOR

Working to restore a deployed soldier's Porsch 911 gives one shop the opportunity to set itself apart by going beyond orders to deliver a wow factor.

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**SALUTE FROM THE MSOS**

BY JOHN YOSWICK | CONTRIBUTING EDITOR

Multi-location repair operations stand tall to help veterans and military families.

**IN THE NEXT ISSUE OF ABRN**

**A** dedicated focus to collision repair paint and refinishing.

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**TECHNICAL TRAINING**

BY AL THOMAS | CONTRIBUTING EDITOR  
Tobyhanna Army Depot in Tobyhanna, Pa., applies real-world collision repair practices to servicing military vehicles and equipment.

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**HEROES FOR HIRE**

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**MECHANICAL FOCUS**

**A HERO'S OFFSPRING**

BY **NORMAN NORVILLE** | CONTRIBUTING EDITOR

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**NEW MEANING FOR ARMY GREEN**

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repairs reviewed by Pro Spot

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# A Moment of Clarity

Our industry's military connection is strong, and the stories have poured in.

**E**very so often I get one of those “Aah Haa!” moments when something I didn’t grasp or understand suddenly becomes crystal clear. I consider those to be my “How can I be so stupid?” moments. Last fall, I actually slapped my forehead after realizing that it was time for Advanstar Automotive Group to recognize the men and women who serve in the U.S. military, and all those veterans who came before them. It was startlingly obvious. The automotive industry has long been filled with vets and active duty personnel who have made sacrifices to give all of us a better life.

As a result of this moment of clarity our entire Advanstar Automotive Group has worked diligently on our special “Salute The Troops” issues for every property we produce in May. When we began compiling ideas, stories poured in immediately from across the automotive sector. Our publications, *Motor Age*, *Automotive Body Repair Network (ABRN)* and *Aftermarket Business World*, share with you shop owners, distributors, technicians, suppliers and others who in one way or another are tightly connected to the military.

But we didn’t want to stop there. We wanted to maintain our mission as the leading source of quality technical and business management information, but with a twist. So what you’ll find inside are some entertaining features on military technology and business operations that we hope you’ll enjoy.

Here in *ABRN* you’ll find Al Thomas’s feature on Tobyhanna Army Depot (pg. 38), a full-service repair, overhaul and fabrication facility. Al also shares

his story about his time in the military (pg. 46) and how his auto repair skills and painting knowledge helped him obtain his own personal Jeep in the service. And speaking of Jeeps, contributor Norm Norville shares the history of the Army Jeep (pg. 57) and how it became a staple vehicle for today’s consumers. Our mechanical repair coverage includes Technical Editor Pete Meier’s exploration of the electrical system and powertrain of the new ULV Research Prototype Army Concept Vehicle (pg. 61). And, if you want to read how our industry truly gives back to veterans, don’t miss columns this month by monthly contributors Mike Anderson of *CollisionAdvice.com* and Mike LeVasseur of *Keenan Auto Body*.

As always, we aren’t simply making this a print project. We have a special webinar May 22 at 8 p.m. EST on A/C Servicing Best Practices conducted by Pete in cooperation with MacDill Air Force Base in Tampa, Fla. We journeyed to the home of Central Command at MacDill and hung out with the airmen (and women) charged with keeping the base mobile. Due to base security, we had to record this webinar but we will be “live” and standing by to answer your questions.

We also have produced numerous video interviews with active and former military now working in the automotive sector. *ABRN* readers should enjoy our conversation with Sterling Auto Body’s Bob Benjamin, an Army Ranger who recently returned from his second deployment to Afghanistan. *ABRN* Managing Editor Krista McNamara caught up with Bob shortly after his tour ended, and his daughter’s tour as an Apache attack helicopter pilot was just beginning. See the video at [abrn.com/benjamin](http://abrn.com/benjamin).

We know we’ve only scratched the surface this month. So I’m encouraging you to continue sharing stories and goodwill initiatives with us aimed at helping active and former military veterans. It’s the least we can do to honor those who have sacrificed so much for us. 📱

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**Tell Me What YOU THINK**



If there's a topic you'd like me to address, I'd love to hear from you. 

Mike has been involved in the automotive industry since 1997. He was formerly Publisher and Editor-in-Chief of *Automotive Body Repair News* before assuming the role of Web Director and now Content Director for the Advanstar Automotive Group. In 2005, under Mike’s direction *ABRN* won the Advanstar Communications “Magazine of the Year Award.”

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ONLINE COVERAGE

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### AIR FORCE MOM RECEIVES RECYCLED RIDES VEHICLE

Jalisa Watkins, a Senior Airman with the United States Air Force stationed at Tinker Air Force Base, was selected to receive a refurbished car as part of Caliber Collision's Recycled Rides program.

»» [ABRN.COM/WATKINS](http://ABRN.COM/WATKINS)

### REMEMBER THOSE WHO SERVE ON MEMORIAL DAY

Contributing Editor Brian Canning encourages readers to think about the men and women currently in uniform and about those who have served. "I'm not always sure that we are worthy of these men and women," he says. "I am very sure that they are our best and our brightest."

»» [ABRN.COM/REMEMBERSERVICE](http://ABRN.COM/REMEMBERSERVICE)

### 1956 THUNDERBIRD AUCTIONED TO RAISE FUNDS FOR WOUNDED WARRIORS

At SEMA 2013, DanAM Company, distributor of SATA spray equipment, unveiled a 1956 Ford Thunderbird painted by airbrush artist Mickey Harris. The car was displayed at Ford Motor Company headquarters before being auctioned by Barrett-Jackson to benefit the Wounded Warriors Family Support Fund.

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### FINDING GOOD TECHNICIANS

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## HISTORY REVISITED

# Mechanics of a Memphis Belle

BY **DONNY SEYFER** | CONTRIBUTING EDITOR

On a warm day in 1935, the United States Army Air Corps (USAAC) pitted three masterpieces of aerial destruction, prototypes built by Boeing, Douglas and Martin, against each other. The prize was a contract to manufacture a long-range bomber with the necessary firepower to protect itself. It had to be fast, durable and fly high, while carrying an enormous load of bombs.

The Boeing entry, dubbed a "Flying Fortress," ultimately lost the USAAC contract when the prototype crashed. But so impressed with the Boeing design — now known as the B-17 Flying Fortress — the USAAC ordered 13. This icon of the war was famous for its legendary ability to survive a number of hits that would cripple most planes and still return home with its crew in tact. The B-17 had a unique glass turret that allowed a wide range of firing angles; but even with all its firepower, the Fortress ultimately required a fighter escort to return home. In 1943, the B-17's match in both range and altitude — the P51 Mustang long-range fighter — took up the position. Air supremacy over Germany was quickly won by the allies.

The most famous B-17 is the Memphis Belle, which completed a 25-mission tour with her crew intact.

>> [CONTINUES ON PAGE 14](#)

## BREAKING NEWS

### VETERAN SUPPORT

## NABC GIVES BACK TO MILITARY HEROES

Led by the National Auto Body Council (NABC), the collision industry has come together to thank and honor veterans and active duty soldiers by providing support through the Recycled Rides and Operation Comfort AutoMotivation programs.

One of the major barriers for veterans to finding and maintaining employment is a lack of reliable transportation. Recognizing this need, NABC members across the country reached out through Recycled Rides to military and veteran support organization to identify service members who needed help.

Nick Notte, NABC president, says more than half of the 200 vehicles donated in 2013 through Recycled Rides were gifted to veterans or active duty military. Continue reading at [ABRN.com/NABCgives](http://ABRN.com/NABCgives).

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<sup>1</sup>2013 Aflac WorkForces Report, a study conducted by Research Now on behalf of Aflac, January 7 – 24, 2013. <sup>2</sup>Aflac Company Statistics, October 2013, One day processing turnaround based on business days after required documents are received. Online claims available for Accident, Sickness, Cancer & Wellness claims. Coverage is underwritten by American Family Life Assurance Company of Columbus. In New York, coverage is underwritten by American Family Life Assurance Company of New York. Worldwide Headquarters | 1932 Wynnton Road | Columbus, GA 31999

&gt;&gt; CONTINUED FROM PAGE 12

## MECHANICS OF A MEMPHIS BELLE

In the summer of 2012, I had the opportunity to ride on a B-17G, known as “the movie Memphis Belle.” It was used in the Hollywood movie of the same name and was completed at the end of World War II. She is owned by the Liberty Foundation and in 1989, she crossed the Atlantic with another B-17 to star in *The Memphis Belle* in England.

Today, her mission involves flying from state to state, taking history buffs and veterans for trips into the past or down memory lane. My visit with Belle was part of a press event that took place at Rocky Mountain Airport, near Denver. To warm up the engines, the plane gently took off and landed a couple of times, but was far too distant to get a look at. On its third landing, it taxied painfully slowly to where we were, stopping 50 feet away. The pilot turned the engines off, leaving nothing but the wind blowing on the tarmac.

After the pilots gave a brief history of the Belle, we were ready to take flight. We

watched as the pilot started the plane — one massive turbocharged Wright R1820 radial engine at a time, until all four were creating a gearhead’s symphony as they idled. The exhaust smelled a lot like diesel, rather than the high-octane aviation fuel the engines burn. We climbed into the plane’s small door, and the pilot throttled up and taxied out to the runway. As he sat idling, waiting for the all clear from flight control, the engines reminded me of muffled pro-stock engines idling. As he accelerated to take off speed, there was a difference (aside from the lack of padding in the coach seats on a commercial airliner). A jet airliner seems to just power its way into the sky. The B-17 reaches a certain speed, and the 75-foot-long bird, with a wingspan of 103 feet, seamlessly becomes part of the air. The only drama is the landing gear spinning down from take off and the drone of 4800 horsepower creating lift.

For a 67 year old, she cruises smoothly along. Once we were airborne, we grown

men got to play like boys. I walked along the narrow bomb bay catwalk through the business section, where 4,800 lbs. of bombs would have hung during a mission, to the Bombardiers targeting equipment. The view out of the glass front is breathtaking. It is hard to imagine the young men, who must have felt completely exposed, performing their tasks of defending the plan and pinpointing targets. As we flew and the thin metal skin of the plane waved, I gained a deeper respect for the vulnerability of a B-17 crew, even with 13 guns and a small herd of Mustangs out front.

We touched back down to the real world, and I reluctantly said goodbye to an amazing piece of history and one of the best experiences of my lifetime.

If you would like a ride on the B-17 or a P-51 Mustang visit the Liberty Foundation website <http://www.libertyfoundation.org> to see when the Memphis Belle or her escort will be landing near you.

## HIRING HEROES

## 3M CONTINUES SUPPORT OF VETERAN HIRINGS

The 3M Automotive Aftermarket Division remains devoted to helping veterans, having donated \$250,000 to its Hire Our Heroes program in both 2013 and 2014.

“The men and women who have served our country deserve our respect and an opportunity to use their skills and passion in a rewarding career,” said Dale Ross, U.S. Marketing Operations Manager for 3M Automotive Aftermarket Division. “It is an honor to be able to help support their training and employment in the collision repair industry.”

This year’s program emulates last year’s by awarding grants and collision repair training, and also is geared to create a job matching service to connect graduates of

the collision repair programs with auto body shop owners who seek skilled, qualified employees. To deliver on both counts, 3M has partnered with the Collision Repair Education Foundation.

Available for qualifying returning veterans and family members, grants are offered for practical purposes: tuition, school fees, tools, textbooks and equipment at qualifying technical schools.

Raising the money revolves around 3M distributors and collision repair shop owners. When they buy select popular 3M products, 3M contributes a portion of the proceeds to the Hire Our Heroes campaign. Distributors who lead the effort can earn a trip either to SEMA or to a NASCAR race in Bristol, Tenn., while participating shops owners will receive Hire Our Heroes promotional materials.

For more information on the 3M Hire Our Heroes campaign, visit [www.3mcollision.com/hire](http://www.3mcollision.com/hire).

## NEW PRODUCTS

## Midtronics releases battery products for military vehicles

Midtronics, Inc. released two new products with features designed specifically for the military market. The GR8-1100 MIL Battery Diagnostic Station and the MDX-600 MIL Series Battery Conductance and Electrical System Analyzers provide testing and

charging solutions geared to battery types used in military vehicles.

The GR8-1100 MIL is a portable battery diagnostic station offering rapid and controlled charging combined with battery state of health analysis. Preventive Maintenance Checks and Services (PMCS) are performed quickly and efficiently, identifying batteries nearing the end of their useful lives.

The MDX-600 MIL Series is a powerful, yet lightweight, handheld ana-

lyzer that promotes proactive testing of batteries and electrical systems, quick results and support for multiple vehicles, battery types and rating systems.

Both products feature custom algorithms to support standard military 6T, Group 31 and 4D/8D battery sizes; support for flooded, gel or AGM battery types; field-replaceable cables; and durable design to withstand harsh environmental/field conditions.



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# COLLISION REPAIR INDUSTRY Stats & Trends

More than **800 vehicles** have been donated through **Recycled Rides** since its 2007 inception, according to the National Auto Body Council.



## Go beyond the call of duty to serve your customers

In honoring a soldier, shop sets itself apart by delivering the WOW factor

BY JAKE RODENROTH | ABRN BLOGGER

Customers are interviewing everyone they come in contact with at a shop. They are about to hand over the second largest expense in a household, their car, which is a part of their daily life and often times has a name. Collision repairers often misunderstand this approach and assume customers are shopping around. But they are really looking for a shop that sets itself apart.

As a repairer, you have to be in a constant search for WOW — the look customers give you when they have just become your customer for life. As repairers, we can start by honing our craft — learning as much as we can about the collision process and developing a keen eye for the details. Having a detailer buff out a scratch you noticed as prior damage is an example of WOW. We get so caught up in the politics with insurers that we can lose sight of the guy in the middle, the customer.



Chad and Emily Coursey

One of the best professional opportunities for me to repair a vehicle involved a soldier in Afghanistan. The soldier's wife came into our shop inquiring about a paint job for her husband's 19-year-old Porsche 911. She explained he has always had a special place in his heart for the car and that he

>> continues on page 18

[abrn.com](http://abrn.com) BEST OF THE BLOGS

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### BEST OF THE BLOGS are articles written by bloggers on ABRN's community pages

#### Increase your bottom line

KATHI KANKIS

ALLDATA® is in business to support the automotive repair and collision industries with proven systems and services that make a positive difference. Over the years, we have learned a thing or two about what it takes to help a shop succeed. We are sharing a few of these "best practices" in the interest of keeping your business strong and healthy.

**Limit discounting.** Shops often offer discounts to family and friends, and you may occasionally feel obligated to discount your services. Before you create that discount line, consider that people are looking for fast, friendly, professional service, not just discounts. Check these huge mark-ups for products and services that consumers pay every day:

- Bottled water – 4,000%
- Movie popcorn – 1,275%
- Brand name drugs – 200% to 3,000%
- Coffee – 300%

Drivers are willing to pay a fair price for work that is done right, and you deserve to make a fair profit. Offer value, not discounts!

**Enroll with a few fleet companies.** This can be a great way to eliminate downtime and open the door to additional opportunities. Fleet work is usually discounted a bit, but generally increases your car count. Reach out to fleet management companies, such as ARI® or LeasePlan USA®, among others.

**Ask for testimonials and referrals from your loyal customers.**

When you build relationships, you may benefit from referrals, which are vital to business success. Each of your customers can potentially generate additional business from their friends, family, neighbors and co-workers. Referred customers can help maximize your profit on each ticket, because trust has already been established. And if you attract fleet business, you may also draw business from individual fleet drivers and their referrals.

**Create a positive customer experience.** Here are some tips to ensure a great experience for your customers:

- Educate and inform your customers. Explain additional recommended services and give them advanced notice of upcoming maintenance items. Print

and hand them the factory maintenance schedule reference.

- Always let your customers know that you value their business. Thank them in person and with follow-up emails, texts or letters.
- Maintain a clean, welcoming counter and waiting area. Don't lose business because of uninviting facilities.

**Stay on top of your inventory.** Inventory is money, so don't let unused inventory sit for too long. Ask vendors to pick up and immediately credit your returned parts. Consider selling stale parts.

Only you know what works best for you. Continue reading at [ABRN.com/ALLDATAtips](http://ABRN.com/ALLDATAtips).





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May 22, 2014  
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**What's new in  
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**THE  
SHOP OWNER**

MICHAEL LEVASSEUR

*Doing our part to  
give back*

PAGE  
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**PROFIT MOTIVE**

GEORGE ZEEKS

*When hiring a  
veteran is wrong*

PAGE  
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**T H E  
L A S T  
D E T A I L**

MIKE ANDERSON

*Giving back to  
those who serve*

**Go beyond the call of duty to serve your customers >> continued from page 16**

would be returning home at the end of the month from overseas. As a military history buff and Porsche gear head to boot, I jumped at the chance to put a smile on a soldier's face. The car was in rough shape body wise and had some evidence of poor bodywork and rust in its past. I also had to exhaust some serious research locating parts for the car. Once the car was painted, the entire shop pitched

in and did their part reassembling. I also kept a photo diary of the Porsche going through its transformation to hand over when complete.

At the end of the month, the soldier's wife brought him over when he got off the ship. The look on his face when he walked into our showroom and saw his car gave him away. Handing him the photo diary and shaking his hand gave me a true appreciation for WOW. 📷

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2014 WEBCAST SCHEDULE

• **How social media can help grow your business**

Val DuVernet, senior content manager with MOTOSHOP Technology Tools, explains how shops can get the biggest return from social media.  
Visit: MotorAge.com/Jan14Social

• **Why general sectioning guidelines no longer apply**

I-CAR's Jeff Poole explains the criticality of understanding repair techniques and their impact on structural integrity and passenger safety.  
Visit: ABRN.com/ICARSteel

• **Overcoming common estimating errors**

Mike Anderson offers tips to improve estimating skills and avoid missing bottom line dollars.  
Visit: ABRN.com/EstimatingWebinar



WEBCAST ARCHIVES

**MAY 13-15**

• **PBES Conference  
Baltimore, Maryland**

**JULY 29**

• **Collision Industry Conference  
Detroit, Michigan**

**JULY 31-AUGUST 2**

• **NACE/CARS 2014  
Detroit, Michigan**

**NOVEMBER 4-7**

• **SEMA 2014  
Las Vegas, Nevada**



2014 INDUSTRY CALENDAR

**abrn TOP VIDEOS**

**Social media marketing mythbusters**  
SEARCH OUR ARCHIVES OF OVER 800 ONLINE VIDEOS  
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• **Big win for small shop at Autorama**  
JF Launier from JF Kustoms and his 1964 Buick Riviera were named the 2014 Ridler winner during the Detroit Autorama.  
[[ABRN.COM/JFKUSTOMS](http://ABRN.COM/JFKUSTOMS)]

• **Do you know your parts?**  
AutoNetTV caught up with Eric Renaud, Senior Category Manager, Heat Transfer Products for Spectra Premium. He discusses the importance of knowing what you are buying.  
[[ABRN.COM/KNOWPARTS](http://ABRN.COM/KNOWPARTS)]

• **VISION 2014 tradeshow**  
Sixty thousand square feet of exhibitor space insured that VISION attendees has plenty to see and do this year.  
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*Noteworthy*

**READER FEEDBACK TO ONLINE ARTICLES**

**On LinkedIn, Dustin McInnis,**

a technician at Abenroth Paint & Body shop wrote: I have worked at 2 shops in my career; the first for almost 8 years and the second for 6 months now. I love both shops, but the work seems to be getting slower and slower in the door. I don't like to 'shop hop,' but how do you know when it's time to go?

**Bruce Laidlaw, industry consultant:** Sadly, as I have found out these days, there are no more bonus points awarded for loyalty. Follow the money... everyone else is.

**Peter Holman, owner, Holman's Auto Body and Fender Shop:** It depends on the market you are in. If this is a small community, you should stick it out a while. Your reputation is important, and if you are known as a job jumper, you will find yourself not welcome to come back in the future. Leave your job in better shape than when you came there, and on the best terms possible. I always look at past employment and tenure when I hire someone new. Every shop has a certain pecking order. If you want to be on the top in a shop, you should stick with them

through the rough times. You have to identify what you want out of a job and an employer and decide where you want to be with them in 5, 10 or 20 years.

**Terry Peterson, manager, Bruce Lowrie Chevrolet:** I would talk to your shop manager and let him know your concerns. I would also try to present a potential solution. It may not be the solution the boss goes with, but it will go a long way toward proving that you care enough to help get things moving in the right direction.

**Bruce King, president & CEO, King Collision Centers:** Employee migration hurts everyone involved and in most cases never had to happen. Why? Because although most people claim to be leaving over money, money is almost never the real reason. The reason most employees migrate from shop to shop is because they are desperately seeking real leadership and honest management. I suggest taking Terry's advice. Share your concerns. Maybe all he needs is a little push and some support. If you get unreasonable pushback, you can shift to Plan B, but I bet he'd welcome your concern and honest input. Good luck!



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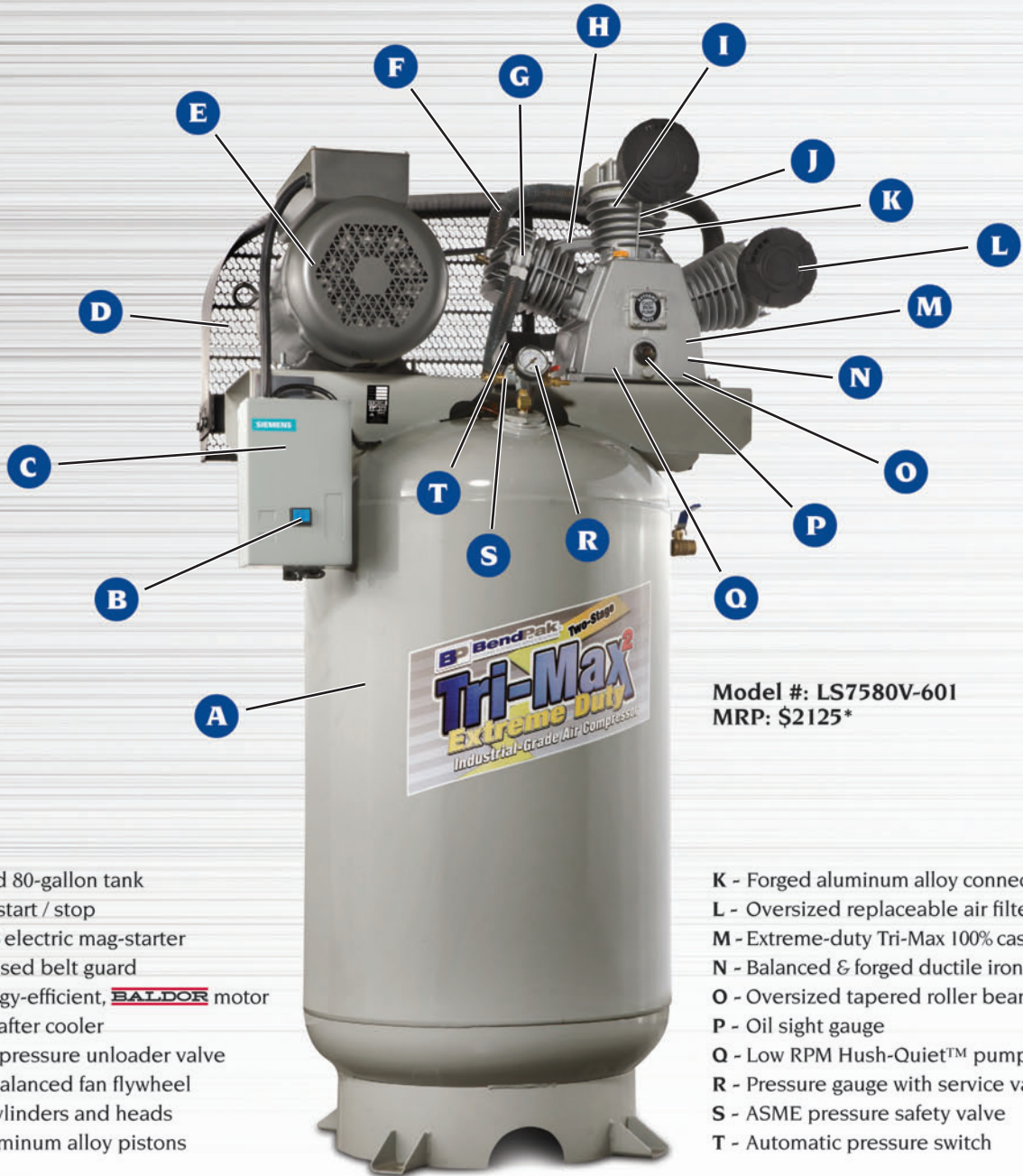
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Q+A WITH

# ROBERT BENJAMIN

COLONEL, UNITED STATES ARMY;  
VICE PRESIDENT OF OPERATIONS,  
STERLING COLLISION CENTERS

## MANAGING TWO DEMANDING CAREERS IS MADE EASIER BY INDUSTRY SUPPORT

BY KRISTA MCNAMARA | MANAGING EDITOR



**C**ol. Robert Benjamin spoke with *ABRN* about juggling both a career in collision repair and duties as a soldier in the Army Reserves. Benjamin returned in late February from Afghanistan, his second year-long deployment overseas. **Watch the complete interview online at [ABRN.com/Benjamin](http://ABRN.com/Benjamin).**

***ABRN:* Tell us about your most recent deployment.**

***RB:*** I spent one year in Afghanistan, responsible for about 8,000 contract linguists. This was much different from my previous deployment, where I was a commander on the battlefield leading soldiers. This time it was much more relaxed and easy going. I was in a more administrative role and led a team of 17 senior officers and sergeants. We provided contract linguist support to all the warfighters in the area. I was responsible in Afghanistan, Kuwait, Iraq and all through the Middle East. It was about an \$800 million contract, and our focus was to try and reduce the number of linguists and drive down costs. I think it was my business experience and combat leadership experience that got the department of the Army focused

on Col. Benjamin to come in there and do this particular role. By the time I left, I had reduced annual expenditures from about \$800 million to \$400 million.

***ABRN:* Implementing lean is something you head up at Sterling. How have you applied your experiences from the Army?**

***RB:*** I came on with Sterling in 2000, and I came out of manufacturing where I was making automotive parts. That's where I learned lean. The key concept between lean and the military that I was able to implement with the team at Sterling is the leadership and the focus on teamwork and the work ethic and respect and taking care of our people and our leaders as well as our customers.

***ABRN:* How have you been able to manage these two careers at the same time?**

***RB:*** Sterling is a wholly-owned subsidiary of Allstate, which has been very supportive of my time with the military. They value not only me serving my country as a reservist, but also the leadership and operations experience I gained and brought back to Sterling. It is difficult in that I've always had

two jobs. Both the Army and Sterling have been very collaborative in trying to find the time to allow me to do my advanced training and education and both of the jobs have meshed pretty well. It has also been very fun to be a part of Recycled Rides and Operation Comfort as both a military officer and collision professional.

***ABRN:* Why are Operation Comfort and Recycled Rides so important for those in the military?**

***RB:*** Sterling has been involved with Recycled Rides, sponsored by NABC, for six years. At Sterling, we've given multiple cars every year, and we seek opportunities to give those cars to veterans or military families.

Operation Comfort works in conjunction with BAMC (Brooke Army Medical Center), the local military hospital in San Antonio, Texas. This project has been key in taking our warriors who are injured and teaching them new skills, giving them the opportunity to try new things, to learn automotive repair, whether it's body or paint work. It's been very good at getting some of these soldiers out of a slump they may be in, especially after being injured, whether physically or mentally. 📧



# Doing our part to give back

NABC programs offer opportunities to say thanks to members of the military

**G**ratITUDE for those who serve (or have served) this country was the catalyst for us to get involved in the National Auto Body Council (NABC) "Recycled Rides" program back in 2009. We knew early on that we wanted the first recipients of the vehicles we refurbished to be veterans and military families. After years of war in Afghanistan and Iraq, we saw many veterans coming home, some from multiple tours of duty. Some had injuries but lacked reliable transportation to get to their doctor's appointments. Others fell on hard times, and desperately needed a vehicle to get to work or get their children to school.

We knew our company had an opportunity to give back to some of those who have given so much for all of us.

Craig Camacho, our company's marketing director who now serves on the NABC Board of Directors, got in touch with the United Service Organizations, Inc. (USO) of Pennsylvania and Southern New Jersey. That organization created a committee to choose the recipients of the vehicles we refurbished.

"They've come through for us four times over the years, choosing very good recipients," Craig says.

The first year, for example, we donated a refurbished Ford Focus to an Army veteran who had served three tours in Afghanistan and Iraq; he'd come home with shrapnel in his shoulder, and was having a hard time getting to and from his medical appointments.

In 2012, we provided a Honda Civic to a young woman who'd been in the U.S. Army National Guard for four years; she'd sold her own car in order to pay for

care and medications for her mother.

Our company is regularly involved in charitable efforts, but Craig and I both noticed a difference in the level of enthusiasm among our employees when they learned the recipients of the "Recycled Ride" were associated with the military. Many of them donate their time on the projects, and nobody ever questions whether the results of their efforts were going toward a worthy recipient.

"It was a no-brainer for them to support the military," Craig says.

We've also helped the NABC raise funds for Operation Comfort. Based in Texas, Operation Comfort's AutoMotivation is a unique program that provides wounded soldiers with a positive, motivating opportunity to work on automotive projects and receive training that can help them gain jobs in the collision repair industry. Craig has visited the Operation Comfort facility and met on several occasions with veterans in the program.

"These are soldiers who in some cases have lost an arm or leg, but they're out there motivated to learn," Craig says. "It would be easy for them to sit home or fall into a depression, but their attitudes are fantastic. They feel like they have a purpose again."

Thanks to more than \$100,000 in donations from our industry, Operation Comfort's AutoMotivation program has relaunched this year in a new facility. Now all the funds raised through NABC for this program will help ensure the program's continued success.

We created a fund-raising campaign for Operation Comfort that involves not just our employees, but our customers as well. Anyone making a donation of \$1 or more can put their name on a specially designed card. Those cards, which feature a U.S. flag with a silhouette of a soldier, are then hung on the office walls in each of our locations. Our company has pledged to match every donation, dollar for dollar. As of earlier this year, our total contribution to Operation Comfort had already exceeded \$2,000.

In addition to these efforts, I want to send a shout out this month to the nine military veterans who work with me at Keenan Auto Body. Achilles Berrios, Jim Conover, Dan Fitzpatrick, Jim Jackson, Jerry Jones, Tim Moore, Matt Padden and Phil Shire all have served our country in the military, and I'm proud to have them as part of our team. 📧

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Mike LeVasseur is president and COO of Keenan Auto Body, which has 11 shops in Pennsylvania and Delaware.



# SATA® Spring Promotion

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OPERATIONS STAND TALL  
TO HELP VETERANS AND  
MILITARY FAMILIES

Caliber Collision Centers earlier this year donated a “Recycled Ride” to Jalisa Watkins, a Senior Airman with the United States Air Force who lacked a car to get to her work at Tinker Air Force Base in Oklahoma.

PHOTO: CALIBER COLLISION CENTERS

BY JOHN YOSWICK | CONTRIBUTING EDITOR

**MSO IS JUST** one letter off from “USO” in what is a fitting coincidence.

For more than 70 years since it was created by President Franklin D. Roosevelt as the United States headed into World War II, the USO has served out its mission of “lifting the spirits of America’s troops and their families.”

Many of the multi-shop operators (MSOs) in the collision repair industry are doing their part to demonstrate respect and help the country’s military, veterans and their families. Here are just a few examples.

### Working with “Recycled Rides”

Last year was the second time LaMettry’s Collision donated a vehicle through the National Auto Body Council (NABC) “Recycled Rides” program. LaMettry’s, which operates eight shops in the Minneapolis-St. Paul, Minn., area, worked with its vendor partners to fully refurbish a 2008 Chevrolet Uplander to present to U.S. Army veteran Scott Adams and his family.

In 2007, Adams was in a Humvee that hit two anti-tank mines in Iraq. He received a Purple Heart, but also endured 38 surgeries.

### Franchises do their part

Many of the CARSTAR franchises make special efforts on behalf of the nation’s veterans. Wicklund’s CARSTAR Collision

Repair & Glass holds an annual military appreciation celebration each fall at its shop in Liberty, Mo. The shop works with its vendors and local restaurants to host active military and veterans for an evening of food, drinks, music and door prizes as the shop’s way of saying thank you for serving.

Like the Wicklund family, other CARSTAR franchisees give back to America’s veterans. Last fall, 21 CARSTAR locations in the Puget Sound area of Washington State worked to restore a 2002 Ford Winstar van for a military family. The recipients were Craig and Maria Sotebeer, both U.S. Army combat veterans who served in Iraq as medics. Craig is a disabled veteran and a Purple Heart and bronze star recipient. He was having trouble making his ongoing medical appointments because the family’s car had given out.

And Marshall’s Autobody CARSTAR in Billerica, Mass., collected donations to purchase iPods, iPads, Kindles and other electronics for military members recovering from injuries at Walter Reed National Military Medical Center.

“The gift of an iPad, Nook or Kindle, or even magazines and books, provides some much needed distraction from the grueling rehabilitation processes these soldiers face,” said shop owner Jim Marshall, himself an Air Force veteran.

### Metal of Honor project

CollisionMax Autobody & Glass Centers this year is complet-





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ing a year-long Metal of Honor Project through its 11 shops and its GlassMax mobile glass repair business in Pennsylvania and New Jersey. Each month for a year, Collision Max selected a military veteran to receive free vehicle repairs.

The company set up a website for the project ([www.metalofhonorproject.com](http://www.metalofhonorproject.com)), which enables anyone to nominate a veteran in need. The website also includes video interviews and other information about each of the winners.

The winner from the CollisionMax Oxford Valley shop, Jerry McMullin, was

hit by a mortar shell in 1969 while serving in the U.S. Marines in the Vietnam War. Despite significant injuries, after multiple surgeries he was returned to active duty until his discharge in 1972.

McMullin acknowledges his return to civilian life was difficult, contributing to his divorce, a series of part-time jobs and even eight months of homelessness. But he eventually turned his life around, retiring in 2000 from a long-time job and now living in Bensalem, Pa., with his wife and their 27-year-old son, who has Down's Syndrome.

CollisionMax repaired a variety of damage and rust on McMullin's 2002 Chevrolet Silverado, and put in a new windshield.

"I use the truck to take my son back and forth to work, and now it's looks better than new," McMullin said.

**Gift of reliable transportation**

Texas-based Caliber Collision Centers donated 17 refurbished vehicles to those in need last year through the NABC "Recycled Rides" program. One of the first such vehicles it did this year went to Jalisa Watkins, a Senior Airman with the United States Air Force stationed at Tinker Air Force Base in Oklahoma.

Watkins' husband has been struggling to get work, and their family – which includes a 17-month-old son – has been facing mounting debt. Without a car, Watkins was finding it a challenge to get to her work at the base.

She sought help from Operation Homefront, a national support organization for military families, which nominated her as a recipient for Caliber's Recycled Rides program. Caliber presented Watkins with a vehicle that had been donated by Farmers Insurance and refurbished by Caliber employees volunteering their personal time.

Todd Dillender, vice president of Caliber Collision, which has more than 160 shops in six states, said that lack of reliable transportation can be a huge barrier for a struggling family trying to regain its financial stability.

"We hope this gift will ease the burden of transportation and help Jalisa and her family get back on the road towards a brighter future," Dillender said.

**Support for VFW**

Don's Auto Body, which has five locations in San Francisco and San Mateo, Calif., gives back to its community by supporting a number of charities and



**Darrell Amberson (left) of LaMettry's Collision in Minnesota presents a "Recycled Ride" to U.S. Army veteran Scott Adams, who was wounded during his service in Iraq.**

PHOTO: LAMETTRY'S COLLISION



**At a golf tournament it sponsored last summer in Minnesota, Auto Body & Glass helped raise more than \$30,000 to benefit "Helping Paws," which works to connect service dogs with disabled veterans.**

PHOTO: AUTO BODY & GLASS



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non-profit groups. One of those organizations is the local post of the Veterans of Foreign Wars of the United States. Since the 1920s, the VFW has used a "Buddy Poppy" program to assist veterans. The VFW works with disabled and needy veterans to assemble artificial flowers, providing income to those veterans and helping fund the VFW's other work on behalf of veterans, including state and national veterans' rehabilitation services and the VFW National Home for orphans and widows of veterans.

In a letter to Donald and Cynthia Shinazy, owners of Don's Auto Body, Richard Argo of the VFW Post 1205 thanked them for their "generous" and "continuous" support of the Buddy Poppy program. "The program is designed to help veterans and their families in time of need," Argo said in his letter to the Shinazys. "They are the ultimate beneficiaries of your kind support."

### Vehicle helps tow memorial

Collision Centers of America, which operates more than 20 shops in Illinois, also worked with State Farm and the NABC to refurbish and donate a vehicle last year. But rather than giving that vehicle to a single veteran, the company instead donated the 2007 GMC Yukon to the Military Order of the Purple Heart of Illinois. That group's membership is made up of solely of combat-wounded veterans.

The newly-refurbished GMC is used to tow a trailer that transports a 40-foot "Memorial Wall of Honor" commemorating those members of the military from Illinois who died in WWII, the Korean War, the Vietnam War, Operation Iraqi Freedom, Operation Enduring Freedom and Operation New Dawn.

"May we never forget the great sacrifices made by our men and women who serve our country," Dave Mulder Jr., chief operating officers for Collision Centers of America, said. "We are proud to be a small part in remembering those who served all."

When the vehicle is not towing the memorial, it is used to transport Purple Heart or other veterans to medical appointments and other veteran-related activities.

### A car for special circumstances

There were several unique twists to Sterling Autobody Centers' refurbish-

ment and donation of a car to a veteran last year. First, it was no ordinary vehicle. It was a handicapped-accessible Ford van. Technicians at one of the company's 61 shops, along with some of the company's vendor partners, gave the van a complete make-over, including new wheels, tires, brakes and parking lights, as well as a stereo system and exterior wrap.

The recipient was retired Navy veteran Charlie Harcus. Harcus served 26 years as an aviation weapons system operator in the Navy. His service included several tours in Iraq and Afghanistan, and throughout his military career he made 23 water rescues. The rigors of combat, including being involved in several helicopter crashes, left Harcus with a bad back and chronic knee pain.

But the other unique aspect of Sterling's donation: It wasn't Harcus' injuries that necessitated a handicapped accessible van. Harcus' wife, Missy, fell four years ago, and her knee injury resulted in seven surgeries leaving her largely bed-bound.

As he accepted the vehicle, Harcus said the van represented freedom for Missy, allowing her to get out of the house because of his own difficulty moving her and her wheelchair in and out of their car.

"I think we came full circle that day," Marcia Ensely, a communications consultant with Sterling Autobody Centers wrote about the van donation on the company's blog. "We gave the gift of freedom to a veteran and his family for all he did to protect ours."

### Finding those in need

Service King, the Texas-based MSO with more than 80 locations, worked with the "Helping A Hero" organization to find a worthy recipient for the vehicle it donated through the Recycled Rides program last year. Helping A Hero helps those wounded during their military service find, build or adapt homes to accommodate their special needs. But they partner with other organizations, such as the Rotary, to help meet those military families' other needs as well.

It was through this organization that Service King learned of Army Sergeant First Class Scott Lathan who served four years in the Marines, returned home to become a decorated police officer, then

spent eight years in the Army including two tours in Iraq.

In 2006, an explosive device penetrated his Humvee while on patrol and he received shrapnel to his face and neck. He returned to duty, but once he medically retired the following year, it was determined he had a traumatic brain injury, severe post-traumatic stress disorder, and hip, knee and spinal damage not apparent at the time he suffered the other injuries.

Service King presented Lathan with a refurbished car to help him, his wife and two children continue to recover and rebuild from his service to the country.

### Golf tournaments give back

Minnesota-based ABRA Auto Body & Glass also has done its part to help veterans and their families. The company's shops in Washington State, for example, were the title sponsor at the Enterprise Golf Classic held last summer in Bellevue, Wash. Proceeds from the event went to the charity branch of the Fisher House at Joint Base Lewis-McChord. The Fisher House provides "a home away from home" that enables military family members to be close to a loved one during hospitalization for an illness, disease or injury.

At another golf tournament last summer in Minnesota, ABRA helped raise more than \$30,000 to benefit "Helping Paws," which works to connect the "healing power" of service dogs with disabled veterans suffering from post-traumatic stress disorder.

"Supporting these training dogs to help heal our heroes is a privilege," Duane Rouse, CEO of ABRA, said.

In 2012, ABRA repaired a van donated by Geico Insurance for Sandra Hamilton, whose active-duty husband was serving in Iraq and who had no way to transport their five children.

"It's the first time in about a year now we'll have a vehicle that can transport the little ones safely, so we're not in three different vehicles or borrowing somebody else's car to go somewhere," Hamilton said when given the keys to the vehicle. "It's a God-send."

These and other MSOs in the collision repair industry are demonstrating that just like the USO, they are working to "lift the spirits of America's troops and their families." ■



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PROFIT MOTIVE: YOUR COMPASS TO FINANCIAL SUCCESS

# When hiring a veteran is wrong

Making the “right” choice takes commitment and leadership

BY **GEORGE ZEEKS** | CONTRIBUTING EDITOR

**B**oy, that title doesn't even look right...or does it? Before we go any further, let's get it straight. Everyone knows it's good and important to hire veterans, but we need to get past the politically correct speak and look at whether it's good for you.

As a veteran and team leader to one of ATI's coaching teams, I've dealt with shop owners for more than 30 years, and the one thing most of them had in common was how they hired people. If you lose an “A” technician, what skill level do you want to replace them with? That's right, an “A” tech. If you lost a seasoned manager, estimator or service advisor, who do you want to replace them with? Someone with years of experience, so you can just plug and play. But what if this perfect candidate is not available right now, when you need them? If you can change the way you think, you may begin to see why veterans can be one of the smartest hires you make.

When I first started in automotive, I knew nothing about cars. I graduated college with a degree in marketing and promptly joined the Army. I had a great time, but thought the skills I learned had no value in the business world. I stumbled into the automotive world while selling sprinkler systems. I was at a potential customer's home discussing the particulars and he said, “I have to think about it.” Knowing that I was the third person to talk to him, I wasn't ready to leave my commission to chance. I took my jacket off and asked his wife for a cup of coffee and told him to

go right ahead. An hour and one big check later, the deal was done. He asked if I knew anything about cars and would I be willing to come and run one of his auto shops. He owned five at the time. I told him I knew nothing about cars or auto shops and wasn't sure I even wanted to learn. That's when he started selling me. It was the beginning of my next 30 years.

**Are you ready to teach them?**

You see, he knew business and saw something in me. He hired for basic sales skill and attitude, knowing he and the crew could teach me the industry knowledge I would need. That is our strength — veterans know how to learn. The military is very good at teaching and refining skill sets, so they are ready and willing to learn new skills. The real question is, are you ready to teach them?

A veteran will commit to you because they want to get started on their new career, but you have to really commit to them and their education in your field. There is a learning curve, but it's not as steep as you might think.

**Are you ready to lead them?**

The next challenge is for you to lead them.

Your veteran knows what hard work is. They know the importance of getting the mission accomplished. They can also sniff out a poor leader in a heartbeat. A poor leader to them means frustration, disappointment and things being harder than they should. It's not a matter of your leadership style, but you have to care. What does that look like? Simon Sinek's book, *Leaders Eat Last*, is a great place to start. If you care about your people, their success, their growth and their happiness, then a veteran hire will try to will perform miracles for you. They know what sacrifice is; they have done it and are willing to do it again. The reward for you is huge, satisfying and profitable.

Now, back to that title. It all boils down to pride. Almost every veteran I have met is proud of their branch, their service and themselves. They want that from you. If you can give a veteran an environment that they can be proud of, a leader they can be proud of and work they can be proud of, then hire away and reap the rewards. If you at least try, they will help you become better. If you don't care or care only about yourself, then don't even try to hire a veteran. They'll know who you are, even if you don't.

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# SHOP PROFILE

A snapshot of one of the industry's leading shops

HAWK FRAME & AXLE, INC. / FAIRPORT, N.Y.



## Military skills go mainstream

Navy service sets a course toward conquering heavy duty vehicle repairs

BY JAMES E. GUYETTE | CONTRIBUTING EDITOR

**D**rafted in 1965 and shipped out to Spain and Morocco aboard the Navy's 6th Fleet as a top-secret communications specialist, Bill "Woody" Hinchcliffe has leveraged skills he learned in the military to achieve success in the heavy duty collision repair business.

"I learned to type," he deadpans, noting that having that ability did indeed provide a career assist as he rose through the ranks to become a co-owner of Hawk Frame & Axle, Inc. in Fairport, N.Y.

"I also learned people skills; you have to go along to get along," says Hinchcliffe. And while his responsibilities

at this 50,000-square-foot, full-service heavy duty repair operation keep him plenty busy, Hinchcliffe is honoring his long-ago shipmates by making the time to volun-

teer at the Veterans Outreach Center in Rochester, N.Y.

"It helps disabled veterans and guys down on their luck," he explains. "It teaches them real-life skills, and they have an Art Center for these men and women for relaxation."

It's unclear who gets more out of these efforts – Hinchcliffe or the troops. "They're very receptive," he notes, insisting that he merely plays a minor role. "I'm just glad to give back. It helps where the Veteran's Administration doesn't and picks up where the other groups don't. I find it rewarding, and I'm thankful that I'm personally not in need of their services."

Making sure that big rigs remain on the road and keep construction sites



Bill "Woody" Hinchcliffe

### AT A GLANCE

**Hawk Frame & Axle, Inc.**

Name of shop

**Fairport, NY**

Location

**Craig Relyea, Bill Hinchcliffe,  
Steven Relyea, Mark Relyea**

Owners

**1**

Number of shops

**52**

Years in business

**25**

Number of employees

**50+**

Number of fleet accounts

**50,000**

Square footage

**\$4,500**

Average repair ticket

**Axalta Imron**

Paint supplier

**Car-O-Liner**

Frame machines used

**Bee Line, Hunter**

Alignment/wheel machines used

**Mitchell, Yada Profit-Net**

Estimating systems used

**www.hawkcollision.com;**

**www.hawkframe.com**

Websites







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humming is a constant concern of everyone at Hawk. "Downtime on equipment is a direct cost to the customer's business and reputation, so you better know what it takes to keep the repairs moving," Hinchcliffe points out.

"The biggest challenge in being prof-

itable is knowledge. Our fleet customers know and understand what it takes to repair their vehicles, and they pose very few problems. Most insurance adjusters are pretty good and some possess a great deal of knowledge about trucks and equipment. Heavy vehicles scare most adjusters, but the truth is they are easier and simpler to deal with than passenger cars," he says.

"When an appraiser/adjuster writes an estimate with little or no knowledge of the vehicle, it becomes a big problem and a time-consuming task to educate that person, providing they are willing to listen. Mistakes are very costly in time and money; replacement trucks rent for several hundred dollars a day – if they are available. Some adjusters will not approve a supplement until they see it, and in New York they have 48 hours to look it over. Those 48 hours can cost thousands of dollars, and the cost is not recoupable."



Fleets that have "a high exposure rate" and vehicles "that see rough service" are prime sales prospects.



Having a vital piece of equipment idled can be very costly for a customer, which is why "every move counts" as Hawk's staff works to accomplish quick, efficient and complete repairs.

"Our technicians continually learn of new technologies and methods of repair so they can be up to date," he reports, adhering to an overall message of "professionalism in our duties."

"Our customers are professionals in their fields, and we are professional in dealing with them and their situations. The employees are family to us; most of our staff has been with us most of their careers, and we value each of them and their families."

Obtaining OEM and industry training certifications is a continuing endeavor, yet the heavy duty element



Hawk's pursuit of fleet accounts range from school districts for buses, highway departments, trucking firms and construction contractors.



Hawk's fabrication shop has an 8-foot shear, a 10-foot hydraulic press and a lathe along with all the other necessary tools to build one-off applications to customer specifications.



Hawk's heavy duty refinishing department is equipped with 60-foot and 30-foot downdraft paint booths applying spraying Axalta Imron paints.

### Fleet power

Direct repair programs (DRPs) in the heavy duty equipment realm are few. "I know of only three or four DRPs from insurance carriers that serve trucking companies, and they are regional in nature or serve a truck dealer network," Hinchcliffe says.

Thus Hawk's 50-plus fleet accounts are what drive the business, located minutes from Interstate 90 along the bustling corridor between Syracuse and Buffalo. "Our fleet customers range from the small local service industries to the national trucking fleets and everything in between. We have three salesmen calling full-time on fleet accounts ranging from school buses, highway departments, trucking companies and construction companies," says Hinchcliffe, who serves as vice president and sales manager.

### Ahead of the field

"Rental fleets for truck, trailer and construction equipment provide a continued flow of work for our shop. We seek industries and businesses that would likely have a need for collision repairs, refinishing, maintenance and occasional modifications to their vehicles." Fleets that have "a high exposure rate" and vehicles "that see rough service" are prime prospects.



makes the practical educational requirements challenging to achieve.

“Unique knowledge is found where you can get it,” according to Hinchcliffe. The Truck - Frame & Axle Repair Association (TARA) provides a wealth of effective repair techniques and personal mentoring. Visit their website at [www.taraassociation.com](http://www.taraassociation.com).

“Our number of members is small, but you can’t find more diverse knowledge about this industry anywhere else that I know of. Several of the major manufacturers are instrumental in joining us and helping to educate our members.”

Hinchcliffe is TARA’s immediate past president and the current secretary/treasurer. The company belongs to several other HD national, state and regional organizations, along with automotive association affiliations, including the pursuit of I-CAR Gold status.

“We have always repaired aluminum truck cabs and trailers, but now the trend in autos is focused on aluminum construction. The need for certified shops is evident so we hope to be ahead of the field.”

### Framing success

As Western New York’s largest body shop, Hawk has been repairing cars, collector cars, light trucks, vocational trucks, heavy equipment and precision vehicle applications for more than 50 years.

“We operated on ‘lean’ procedures before we knew what they were,” Hinchcliffe recounts. “Since our repair tickets are substantial, it is imperative that every move counts. To our customers, their trucks, trailers and equipment are a revenue-generating asset that needs to be back in service as quickly and cost effectively as possible,” he continues.

“To our good fortune, the heavy vehicle models don’t change as rapidly as an automobile, so repair standards are easily built in on an ongoing effort. Our services include certified welders for both steel and aluminum; we also offer limited mechanical services in conjunction with collision repairs. All work is done in-house with very little sublet,” says Hinchcliffe.

“Our capacity is only limited by the door size, and ours are 20-feet by 16-feet high.” The largest piece of equipment repaired was a Caterpillar 770B quarry

truck “that had rolled off a cliff in New Jersey.” Arriving on two drop-deck trailers, the dump body alone weighed in at more than 22,000 pounds. “Hawk was able to straighten the frame when no one else in the area could attempt it. A replacement quarry truck at that time was worth over \$500,000, and totaling it posed a problem for the owners.”

Backhoes, loaders and crane booms are other repair opportunities that come rolling through those big bay doors, as are requests for customized fabrications.

An expansion project in the late 1980s resulted in two new 50-foot frame cages being built into the structure. The late owner, Gerald Relyea – who estab-



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The shop has long specialized in repairing big rig cabs and trailers, especially those constructed of aluminum. Hawk is poised to further apply its aluminum skills to the increasing amount of passenger cars made with the metal.

lished the shop in 1962 – came up with the cage designs and had engineers draw up the final blueprints.

“These cages are capable of withstanding 150,000 pounds of pressure anywhere within the cage,” says Hinchcliffe, still in awe of Relyea’s invention. “This gives Hawk a capability to repair frames and equipment that no other shop within a 500-mile to 700-mile radius has. In repairing heavy vehicles all the straitening is done with pushing as no one makes an affordable pull cylinder strong enough to repair some of the heavier equipment,” he says.

“A shop in Calgary, Canada saw our frame cages on the Internet and called about selling him blueprints as he was building a new shop and wanted to repair some of the oil/gas well equipment being used in the Western Canadian provinces. He has done well with his frame cages in the Northwest,” Hinchcliffe reports.

After mustering out of the Navy in 1968, Hinchcliffe applied his shipboard-

learned attention-to-detail skills to pursue a career as a vehicle appraiser, drifting into the heavy duty aspect. Taking note of his industry acumen, Relyea recruited him into Hawk in 1986. It hit Hinchcliffe hard when Relyea died in 2011; currently Gerald’s sons Craig, Steven and Mark share ownership duties along with Hinchcliffe.

“The biggest challenge facing our industry is the workforce,” he says, adding that “if trucking companies can’t hire drivers that eliminates their exposure to incidents that would require our services.”

Hinchcliffe concludes by emphasizing that every American city is served by truck. “Manufacturers are making equipment easier to drive – automatic transmissions are more prominent in trucks in an attempt to get more women interested in trucking careers: Trade schools need to make this industry more interesting, and the auto repair industry needs to get more involved with the education system.”



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TRAINING  IN FOCUS**TOBYHANNA ARMY DEPOT APPLIES REAL-WORLD COLLISION REPAIR PRACTICES TO SERVICING MILITARY EQUIPMENT**BY **ALFRED THOMAS** | CONTRIBUTING EDITOR

Have you ever wondered how and where the Armed Service does its equipment repairs? I knew from my time in the service that at most supply areas there was a Direct Exchange (DX) depot, where old or damaged equipment could be exchanged for not necessarily new, but often reconditioned or upgraded units. Most of the exchanged equipment on overseas bases is not repaired in country, but shipped someplace stateside for repairs.

The Tobyhanna Army Depot in Tobyhanna, Penn., is one of the Army's body shops. The military established a presence in the Tobyhanna area as far back as 1912, when Ma-

yor Charles P. Summerall established an artillery training camp there. By 1913, Congress authorized the purchase of the camp and additional land, which eventually grew as large as 23,000 acres. Some units other than artillery were stationed at the depot for short periods of time, but for the most part, it remained an artillery training depot.

By 1949, despite local efforts, the government moved ahead with its plan to abandon the site. The land was transferred to the Commonwealth for recreational purposes and the Tobyhanna State Park was established. When the US Signal Corps lost its depot in Baltimore, it re-acquired 1,400



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Owner Scott McDaniel explains, “The fact is I went with Blowtherm because of the sheer quality, performance and overall construction of these spray booths. Our painter is getting more production and up to 50% more efficiency out of the Blowtherm booths. Our cure time and energy use is down considerably.”

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acres of the former Tobyhanna army reservation to develop a \$35 million supply depot. By February 1953, the Tobyhanna Signal Depot was officially established.

Today, the depot is a C4ISR facility, which stands for Command, Control, Computers, Communications, Intelligence, Surveillance and Reconnaissance. Tobyhanna configures shelters, or assets, which contain the equipment for modern electronic warfare. Because of the sensitive aspects at many of the areas of the depot, security was tight when I visited the depot, guided by Retired Airforce Servicewoman Jacqueline Boucher and Mike Romonczuk, body shop manager and a civilian, but a Vietnam Veteran.

I was interested to see how the technicians repaired, repurposed and reconditioned military equipment and how similar its shop procedures were to those of the collision repair industry. I was granted permission to visit



the area of the facility that took care of the enclosures for signal equipment. That equipment has not changed much — on the outside — since I used it during my service in 1968 and 1970. However, over the last 40 years, the interiors have had to be reconfigured several times, as the signal and listening equipment has changed. These enclosures are constructed with aluminum support beams inside and outer and inner aluminum sheets. They can be placed on a wheeled trailer or on vehicles for quick deployment. They can also be configured to meet the particu-



lar mission's need, and may be deployed as single units operating individually or configured in multiple units as the mission requires.

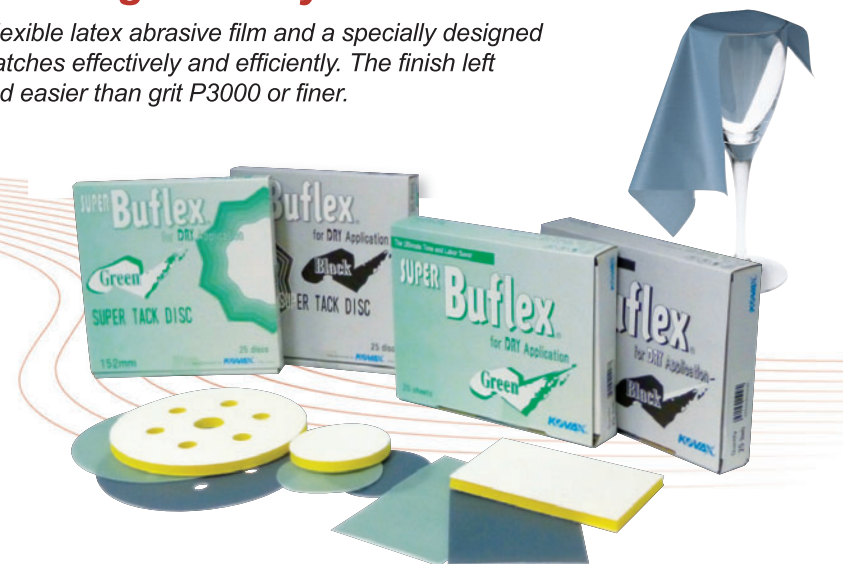
The facility is a state of the art, efficiently run unit using all the same business principles used in a modern body shop. I saw such concepts as just on time supply, ISO quality and through-put tracking. They blueprinted each job and tracked it as it passed through the repair plan. There were task-specific toolboxes; areas that repaired different phases of each job; and downdraft paint booths, which

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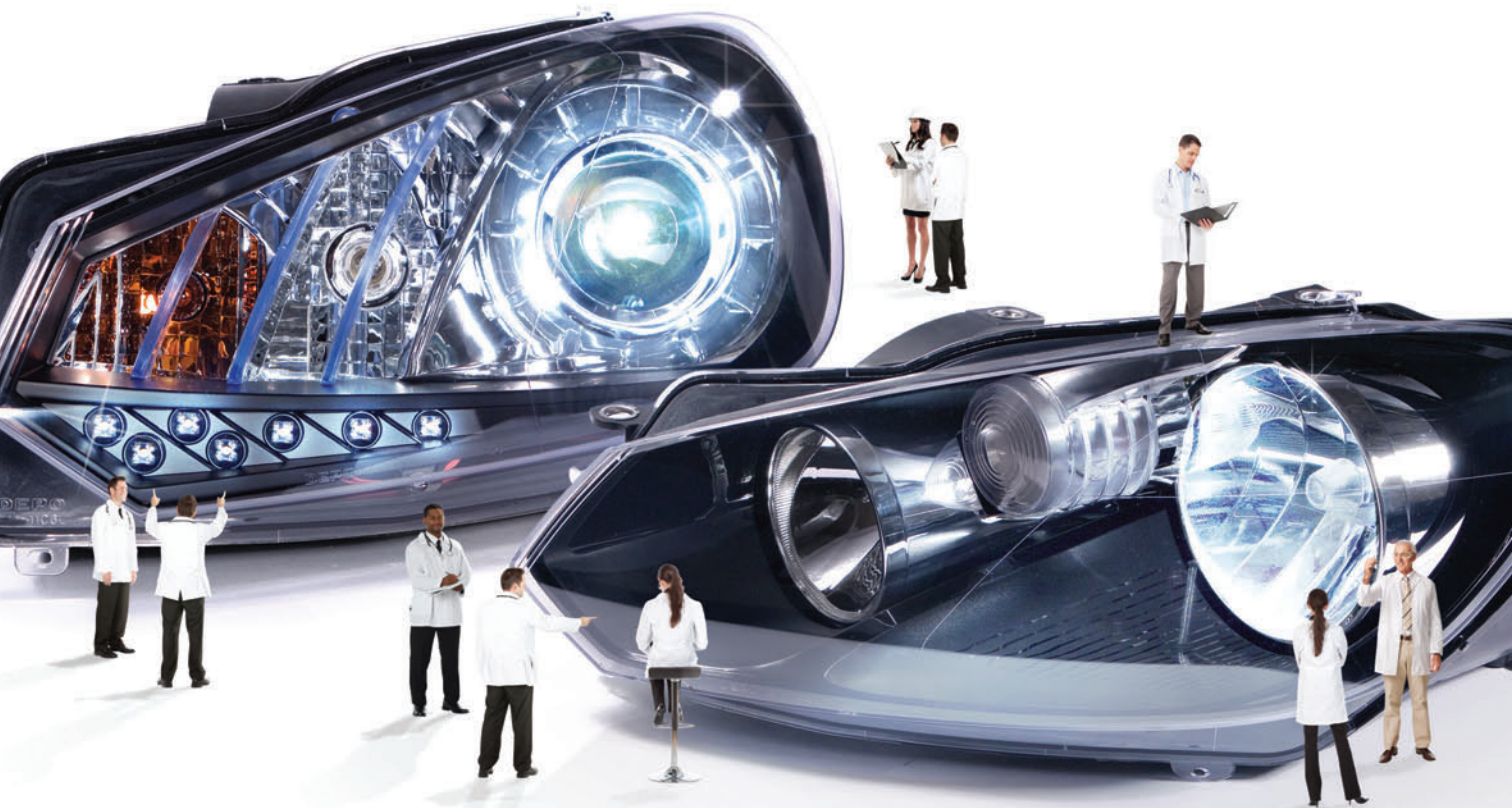
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were heat and humidity controlled. The booths were similar to those used in our industry, but bigger — 30 feet tall and just as wide, and what I would estimate as 60 feet long. Some of the equipment painted in these booths is so large that there are "man-lifts" in them to help the technicians position themselves for painting.

There is a high regard for safety in the shop. Every employee had the appropriate safety equipment, sanders with respirators, steel toe shoes, gloves, hat, paint suit, safety glasses. Also in use when needed were hard hats and harnesses and safety lines for anyone working more than three or four feet off the ground. Before I was allowed on the work floor, I was issued hard toes for my shoes and safety glasses. The facility is also remarkably quiet with sound baffling in the ceiling to protect the workers' hearing.

**Reconditioning**

When assets are brought into the facility, they are stripped of the equipment inside and the enclosure is sent to the body shop. A technician inspects the piece for damage and makes a repair plan. Some of these assets need to have the outer skin and insulation removed where the internal structure will be inspected for damage and replaced or repaired. Though there is a stamping and cutting area outside the paint shop that makes replacements parts for these assets, the shop itself has a full complement of steel-cutting shears, breaks and other forming equipment on hand for the technicians to use as needed (**FIGS 1, 2**).

Some parts will only need stripping and refinishing. Though no chemical stripper was used, there were two media blasting booths (the same size as the spray booths) for that purpose. For sensitive equipment, a laser stripper is available. It is capable of vaporizing paint from metal surfaces quickly and with no dust or debris remaining. The smoke that is generated from the machine is vacuumed away and the vapors cleared.

When the asset is stripped and repairs have been completed, it is sent to the prep/masking area. Here the asset gets an epoxy sealer and is then painted. The film thickness requirement is strictly monitored; it is tested to assure quality at each step, sealer and paint.

Through-put is also closely monitored. A flow chart shows the repair process for each asset, which is also marked with a colored tag — red (behind schedule), orange (late) or green (on time).

**Work stations**

Each work station is designed and set up to accomplish specific tasks, with the needed tools and equipment and supply carts (**FIG 3**). Workers follow Standard Operating Procedures (SOPs) for each task. SOPs ensure each job is done exactly as specified for that procedure, and quality control can be closely monitored. Each asset is tested before being shipped back to duty.

The needed supplies to stock the work stations are centrally located. Air, vacuum and electricity are conveniently located on moveable tracks. Ergonomic placement



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If you'd like to see if your territory is available and discuss the SPI line further, please give us a call at 706-781-2220. In the meantime, Google search Southern Polyurethanes aka SPI and you'll see how we grew 30% in 2009 when the industry tanked 30%.



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of tools and equipment optimizes ease of use and allows all surfaces to be accessed.

Masking stations and paint stations promote the highest quality and efficiency. The paint area features a digitally automated paint mixing and re-

ducing computer that feeds a pressure spray system for the painter.

**Testing**

Though quality control is integrated into every step of the repair process at Tobyhanna, assets are tested before

being cleared following repair. One such test monitors pressure, where a testing machine is hooked up to the shelter and a prescribed amount of air is pumped into it. If the pressure drops over time, a leak is present and must be located.




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- Salvage and Re-Use Parts
- Reduce Need for Toxic Solvents
- Save on Consumable Costs



In the paint department, paint film thickness is monitored, along with strict standards for gloss (low outside, for the camouflage, and high inside), texture and flow. To meet the SOP standard and tasseur the component's configuration before it is put inside, the shelter is tested for water leaks in a large water test bay (**FIG 4**). Water pressures from a gentle rain to monsoon storm conditions can be simulated.

Tobyhanna Army Depot is a large facility providing support to all the armed services for electronic equipment. While I only detailed the shelters that they provide for the varied electronic equipment (used today in battle, surveillance and security worldwide), I came away with a renewed assurance that our troops are well supported in their mission of keeping our country safe.

Thank you to the armed services personnel and civilian employees at Tobyhanna for their service, and thank you for letting me share this glimpse into what you do. 

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TRAINING  IN FOCUS

# PAINTING MY WAY TO STAFF SERGEANT

The equipment bunker with two air conditioning lines going in kept the equipment cool and operational in 100+ degree heat.

## ONE SOLDIER'S AUTOMOTIVE KNOW-HOW PAYS OFF IN RANK

BY **ALFRED THOMAS** | CONTRIBUTING EDITOR

The plane ride back to Vietnam for my second tour of duty was strikingly different than my first. My first trip was in early 1968; I was heading into Saigon, and it was no longer a safe rearward area to be in. Everyone on the plane was apprehensive; the 17-hour flight was nearly silent.

The second trip was less anxious, as the fighting had calmed, and flying into Saigon was considered safe. We were not armed and the plane could even taxi to a stop and shut down its engines. I was a bit older than the gaggle of 18-year-olds, and a sergeant (E5). But neither my age nor rank was the giveaway. On my left arm, I wore a MACV (Military Advisor Command Vietnam) unit patch, which meant I had served previously with the unit. I also wore a CIB (Combat Infiniti Badge) over my left pocket — an award only given to infantry and Special Forces who had served in direct combat. I was returning to the 525th Military Intelligence Unit, Vietnam.

I was a communications specialist and trained to use all U.S. military-issued radios; I had also learned to use Russian and Chinese radios, as well. During my previous deployment, I had gotten a reputation for not only being able to set up and transmit, but also keep them running in “unfavorable” conditions. This helped me rise from Private (E2) to Sergeant (E5) in less than a year. I also became known as a scrounger for the unit. When certain hard-to-find supplies weren't available through normal channels, I was able to find and barter to get what we needed.

Once in Saigon, I was taken to Quang Tri City to see if I could get an unreliable radio working. Though I was trained

to fix radios, I had always been a tinkerer. This time, I was heading to a unit that was “advising local farmers on ways to be more productive with their rice crops.” When my plane landed, I was met by a person driving a Citroen DS.

I was born on a farm just outside Detroit and, as my daughter will tell you, I had the “Curse of Detroit.— if it had a motor and wheels I loved it. I bought my first car at 14, a 1954 Pontiac Straight-6, for \$5. My dad laughed when he saw it. “Do you think you can get that to run?” It was all the motivation I needed. By the time I was a senior in high school, I had flipped six vehicles and was driving the sweetest and fastest ‘56 Chevy in town. I had become a very good body man and had been hired by a local body shop.

By the time I arrived at the small compound in a Citroen, I had become quite good at fixing things. In the camp, I noted four Jeeps and two Citroens, all disabled. My driver said no one could get, or keep, them going.

But my first focus was keeping a vehicle-mounted teletype communications unit running and manned. All intelligence communications for the northern part of Vietnam came through us, which made this station very important. I found normal maintenance was not being performed. I cleaned the filters on the generator. I re-cut and erected the proper antenna, used my multi-meter to find which boards of the spare, but down, radios were bad, and had working ones flown up from Saigon. Soon, the unit was up and running reliably.

One remaining difficulty was that in 100+ degree temperatures, even very good radios just stopped. At a large





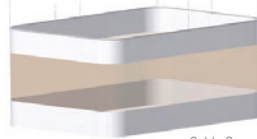
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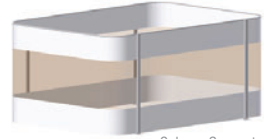


Garmat USA's Cable Suspended AlumaSAFE 50 Max with clearview curtains shown.

AlumaSAFE 50 - Curtain Structure



Cable Suspended



Column Supports

AlumaSAFE 50 Plus - Curtain Structure with Lights

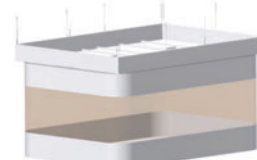


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AlumaSAFE 50 Max - Curtain Structure with Lighted Ceiling



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supply and DX (Direct Exchange) depot about 10 miles away, I was able to get a portable air-conditioning unit with its own power supply to cool the rig and office.

After two weeks, the station continued to work correctly. I expected reassignment. Instead, the Major asked, "Sgt. Thomas, do you know anything about Jeeps?"

Over the next two days, I inspected the Jeeps and came up with a plan to cannibalize one for parts to repair the other three. Most of the problems were simple, such as starters, wiring, flat tires, fuel pumps and other fairly minor problems. Over the next three weeks, I used parts from the most decrepit-looking Jeep to fix the three others and make repairs on the Citroen.

The three Jeeps became functional; I then began working to get the cannibalized Jeep running. The Major, sure the vehicle was beyond repair, said, "If you get it running, it's yours."




**One of the Jeeps Thomas successfully restored.**

This project took a bit longer, but after many trips to the supply area, the Jeep was running. One day while at the Direct Exchange center, which was like a big military junkyard, I noticed they had a painting area that was not being used. The Supply Sergeant said they had all the equipment needed to paint, but no one knew how to use it.

Having painted before, I offered to train someone to use the equipment, in exchange for being able to paint my unit's Jeeps. The deal was quickly struck, and over the next two weeks, I

trained a private how to paint a vehicle and was the only sergeant with his own freshly painted Jeep.

When I returned the Major's Jeep with a fresh coat of paint, he said it served as a nice birthday present, as he was turning 50 in a week. With the help of the supply sergeant, I was able to throw the Major a great 50th birthday celebration: cold Hamm's Beer (from the Bay area of California, it was his favorite.), T-bone steaks, and potato salad — all three unheard of in Vietnam. However, that's a whole other story.

About a month after the birthday party, the Major called me into his office and said that I had been awarded a Staff Sergeant promotion. I had no idea the Major had put me up for it, and it was more than a bit unusual, since I had not yet been in the army for even three years. Nobody earned Staff Sergeant that fast, but here I was. I guess it shows that knowing how to tinker and paint helps. 

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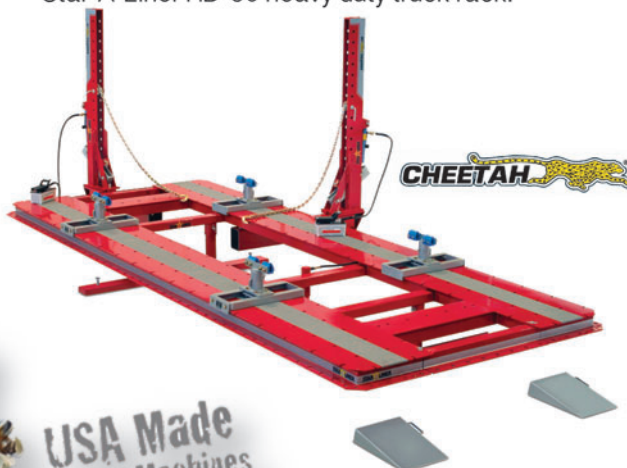


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TECHNIQUES  INFOCUS

# Heroes for hire

Why hiring a veteran just may be your next great decision



A \$2500 grant is helping Air Force veteran Kevin Young pay for his collision repair education at Cape Fear Community College in Burgaw, N.C.

PHOTOS: 3M

BY **TIM SRAMCIK** | CONTRIBUTING EDITOR

Several years ago, Sherwin-Williams Automotive Finishes helped sit a committee of owners and repairers with *ABRN* to discuss the challenges shops faced with hiring new employees. Of particular concern was the shortage of young people interested in joining the industry.

Some of the repairers noted that youthful hires frequently left. Reasons for these early exits varied, but typically they were linked to a lack of commitment and willingness to perform the physical work necessary in the collision industry.

This is bad news for an industry in need of qualified workers, especially those willing to stay with a shop for the long run and build its business. If repairers can't count on youngsters to fill their staffing needs, where can they look?

The answer might be no farther than your local military base or neighborhood. More than one million members of the

military are slated to enter civilian ranks in the next several years. These workers bring with them an appreciation for loyalty, hard work and dedication. As part of their service, many have received management, logistic and automotive training they can now offer your business.

A number of programs run by the government and private industry can help you locate and train this growing pool of talented workers. Let's take a look at how you can leverage these services and bring these heroes on board at your business.





# Axalta Coating Systems Supports ABRN's Salute the Troops Month

**Bold, passionate, honorable and built for performance:**

these are some of the characteristics that Axalta Coating Systems values and shares with its U.S. veteran team members. Their work ethic, dedication and team spirit help contribute to our success every day. We are proud of our employees who served this country and now provide a service to thousands of our customers across the United States and abroad.

Axalta is pleased to support *Michigan Values Veterans*, a TMG, Inc. program, that strives to reduce veteran unemployment by training and educating employers on how to recruit, hire, train, and retain veterans and those serving in

the National Guard and Reserves. As the founding organization, TMG Inc. builds programs and systems to help employers connect with the right employees. We recently earned TMG's, MV2 certification for our pledge to hire and retain veterans.

We are also excited to partner with Fort Bragg Army base to sponsor its *Workforce-Education-Employment Auto Collision Repair* program that aims to help transition soldiers and their spouses to sustainable professions like those in the auto collision repair industry.

So whether your service is by air, land or sea, like the industries we serve: aviation, automotive and maritime, we applaud your dedication and commitment.



**Aid from Uncle Sam**

Many shops run Help Wanted ads in local newspapers and on websites like Craigslist.com or Monster.com. If you're looking to attract veterans, there are better places to go.

One is the website for the National Resource Directory, [www.nrd.gov](http://www.nrd.gov), a job bank run by the U.S Dept. of Labor specifically for veterans (and their families) where employers can post jobs at no cost. The website [www.vetsuccess.gov](http://www.vetsuccess.gov), run by the U.S. Dept. of Veteran Affairs, similarly lets employers post

jobs for free and allows them to search resumes posted by veterans.

Employers also can turn to online hiring centers for veterans for more comprehensive recruitment and hiring assistance. These centers include the American Job Centers (see [www.careeronestop.org](http://www.careeronestop.org)), which features a number of resources to help businesses hire and train veterans – including directions on creating an effective job posting and help in determining what military jobs best translate into collision repair work. The Hero 2 Hired website

([www.h2h.jobs](http://www.h2h.jobs)) provides access to work profiles of vets who have passed security and background checks.

At the local level, shops can post on state job boards and at each state's Director for Veterans' Employment and Training Services office (available at [www.dol.gov/vets/Employment/](http://www.dol.gov/vets/Employment/)).

Federal and state governments also provide considerable financial help for the hiring and training of vets. Shops who hire veterans can qualify for the Work Opportunity Tax Credit (WOTC), which can save them from \$1,200 to \$9,600 annually in employee pay.

Those savings are based on a formula in which the more an employee works, the greater the savings for the shop. If the employee works at least 120 hours, the shop can claim a tax credit equal to 25 percent of the worker's first year wages, up to the maximum tax credit. If the employee works at least 400 hours, the shop can claim a credit equal to 40 percent of the first year wages, up to the \$9,600 maximum.

States offer separate programs that can complement these savings. For example, Arkansas runs a program that pays up to \$1,000 for training a veteran. Check with your state's department of veteran affairs or employment agency to find what each offers.

Utilizing any of these programs will involve some government oversight, which means you'll be filling out paperwork and adhering to some new regulations, but former shop owner and industry consultant Ben Bailey says these factors shouldn't deter shops.

"It's a lot easier than you'd think," he says. "Start by contacting your local veteran assistance groups and go

**SPOTLIGHT ON VETERANS**

*What can hiring a military veteran employee truly bring to your day-to-day business success and culture? Consider what these owners and managers have to say about their experiences:*

**Alpine CARSTAR Auto Body, Aurora, CO**

Military Veteran: Steven Burr, U.S. Army, now a mechanic/DFR technician  
Owner: Gary Boesel

*"Steven has been employed at Alpine CARSTAR for 11 years. During that time he has shown the dedication and team member skills that were woven into him during his tenure in the Army as an infantry soldier. His military background shaped him to be respectful and honorable, as well as the importance of accountability. His coworkers know that they can count on him to step up when needed with his 'I got your back' mentality."*

**Riverdale Body Shop, Chicago, IL**

Military Veteran: Sergio Barbosa, U.S. Marine Corps, now a painter  
Shop Manager: Brian Bussey

*"Describing Sergio personally is hard because there is so much to say about an individual with so much pride and integrity. He is a dependable, dedicated and respectable person. He's always there to help a friend or coworker with things they maybe struggling with in their personal and work life. Professionally, he has the eye for detail and the ability to handle any task with grace. He's a hard worker."*

**Fix Auto of Yorba Linda, Yorba Linda, CA**

Military Veteran: Brian Price, U.S. Navy, now an estimator and shop assistant  
Shop Owner: David Caulfield

*"Brian always has a positive, leadership attitude. Whether early or late in the day, he is always ready and willing to help out others, which helps make life here a lot easier. Fix Auto of Yorba Linda is very lucky to have a veteran like Brian working at our shop."*

**Rudy's Truck and Trailer, Bailey, NC**

Military Veteran: Joshua Pearson, U.S Army National Guard, now a parts salesman  
Shop Owner: Amy Pearson

*"Joshua was deployed to Kuwait in May 2012, leaving a four-month-old little girl and wife behind. He returned home Easter weekend of this past year. He never skipped a beat and was in at 7 a.m. to open immediately following his return."*

**Brandywine Coachworks, Exton, PA**

Military Veteran: Tim Heiser, U.S. Marine Corps, now specializing in paint preparation  
Shop Manager: Jim Gallagher

*"Tim represents the best aspects of the military in both his personal and professional life. Whatever he does, he pours his heart, his soul and his pride into. The experience and tools that he gained from military service have really helped him to exceed in civilian life. He is conscientious, kind and always there to help when needed. He truly takes the Marine's ideal of 'Semper fi' to heart – always faithful."*

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**Hiring and retention toolkit:** [www.americasheroesatwork.gov](http://www.americasheroesatwork.gov)

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from there. There's plenty of help."

Bailey also says shops should look into hiring disabled veterans. He notes that there are additional programs available to help bring these veterans aboard. He also stresses that "disabled" doesn't mean these potential employees can't contribute to a repair business, even in physically demanding roles.

"All a shop has to do is ask one of these vets what he can and can't do for a particular job," he says. "A missing or injured arm or leg or even a worse injury won't affect most of these folks' ability to contribute."

Bailey also notes that in every case he's seen shops have been satisfied with veteran hires.

"Usually they rave about what a great employee they've got," he adds. "Having a true hero at your business is a just one more bonus."



**NASCAR driver Greg Biffle speaks to military veterans who work in the collision industry.**



**Thanks to industry support and a grant through the Collision Repair Education Foundation, Air Force veteran Marco Salinas can focus more on his repair studies.**

### Industry aid

Along with governmental help, the collision industry has stepped up to help bring more veterans into shops. 3M's Hire Our Heroes program is now awarding grants to veterans and family members to be used for tuition and

equipment at qualifying technical schools. The program is expanding to include a job matching service to help graduates connect with shops looking for employees.

Air Force veteran Kevin Young, who received \$2,500 to purchase tools at

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**INTERVIEW TIPS**

Interviewing a veteran for a shop position typically is no different than interviewing other candidates. There are, however, exceptions. Federal law prohibits employers from asking certain questions. These include:

- "What type of discharge were you granted?" Only federal agencies (those that assign a Veterans' hiring preference or have requirements related to security clearances) can ask questions related to military discharge.
- "You're presently in the Reserves. Could you be called up to active duty this year?" It is unlawful to discriminate against someone because of membership in the Reserves, National Guard or a state defense force.
- "Did you see any action in Iraq?" "Are you

receiving any treatments for injuries?" Questions related to deployments in Afghanistan or Iraq might be interpreted as attempts to determine if a veteran has Post Traumatic Stress Disorder or Traumatic Brain Injury. This could be construed as a violation of the Uniformed Services Employment and Reemployment Rights Act (USERRA) or the Americans with Disabilities Act (ADA). Consider asking questions that will let you and the veteran know if a position will be the right "fit" for both of you. For example, ask the following:


- "You've read the job description. Can you, with or without a reasonable accommodation, perform the essential functions for the

job?" Note that you're not asking the veteran to disclose any disabilities. You're ensuring that this candidate can perform the essential functions of the job.

- "Tell me about the type of training and education you received while in the military." Consider how this will relate to work at your business.
- "Were you involved in day-to-day management of personnel and/or supplies? How many people did you supervise? What was the net worth of these resources?" Again, consider how this experience will translate into duties at your shop.
- Don't hesitate to thank veteran candidates for their service to their country.

Cape Fear Community College in Burgaw, N.C. Young, said, "A lot of guys struggle in school because they also have to make money to buy their tools. The grant has been a real blessing."

3M also ran a contest honoring military veteran employees for workplace excellence. Winners received a trip in November to the NASCAR Sprint Cup Series at the Texas Motor Speedway in

Fort Worth. Jerry Patterson, one of the winning veterans and an employee at C&P Body Shop in Henserson, NC, said "I have been in the industry for 42 years and this is one of the highlights." 



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# A hero's offspring

The Jeep was first introduced for military use, but has undergone continuous reinvention to become a loved civilian vehicle.



The first production version of the Bantam Jeep had fenders that were squared off. This was one of 70 initially produced for the Army.

PHOTOS: U.S. ARMY

BY **NORMAN NORVILLE** | CONTRIBUTING EDITOR

Today's average citizen seldom considers the Jeep an offspring of a hero. However, there are still those followers who connect the present to the Jeep's star-spangled past. Transformation into the vehicle we all know today was not without its challenges.

## People mover needed

Commandeered Renault taxis, used by French troops in 1914, are considered the first use of motorized vehicles for troop transport. The U.S. relied heavily on horses and motorcycles during World War I, but sought to move forward with a vehicle replacement. In 1937, the military experimented with a vehicle called the Howie Machine Gun Carrier, nicknamed "Belly Flopper," because of the way GIs would lay on their stomachs to drive the vehicle. The two-passenger, machine-gun equipped car was fast, but lacked an adequate suspension system.

## Beginning with Bantam

As early as 1938, the American Bantam Car Company engaged in negotiations with the military to produce a light-weight reconnaissance vehicle. Skeptical that Bantam could produce enough vehicles, the military requested bids from manufacturers to develop a 4-wheel-drive vehicle.

Bantam hired engineer Karl Probst to design their prototype. The first vehicle was equipped with a Continental Motor Company 112 cubic in. 4-cylinder, 45 hp flathead engine with 86 lb-ft of torque. The vehicle also had a 3-speed Warner T-84 transmission with a Spicer Dana two-speed transfer case.

## Enter Willys and Ford

While the military was pleased with the initial Bantam prototype, there were concerns over price, and lingering doubts that such a small company could produce enough vehicles.

Willys-Overland Motor Company and Ford Motor Company were the only other bidders to respond. All three companies produced 1,500 vehicles each for additional testing. In the end, Willys won the contract and began production of the welded slat grille vehicle in November 1941. Even Willys could not keep up with production demands and in 1942, Ford was sub-contracted to produce a similar vehicle, named GPW.

By the end of the war, Willys would produce over 350,000 vehicles and Ford almost 280,000 more. Bantam would only produce around 2600 vehicles, mostly to be used by American Allies.

## A Jeep by any other name

There are no definitive answers as to how the Jeep got its name. Some say

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the Jeep name was taken from the Pop-eye character "Eugene the Jeep," given his ability to go anywhere. Others say the name was derived from the acronym "GP," standing for General Purpose. The most likely origin of the name comes from military vernacular that dubbed anything new and untested a "Jeep."

### Wartime uses

The Jeep earned its stripes quickly after entering the war. Its four-wheel-drive, low stance, high ground clearance and set-forward front wheels enabled it to maneuver in the roughest terrain. Jeeps could be quickly modified to do a multitude of jobs. The Jeep could be driven through water almost totally submerged. It could also be wrapped in a tarp and floated across larger bodies of water. An amphibious Jeep designated "GPA" was built by Ford and modeled after the larger DUKW or "Duck" amphibious vehicle.

Some Jeeps carried VIPs, while others were rigged to tow 37mm anti tank guns. Jeeps were even fitted with rail wheels for towing cargo along railroad tracks. The Jeep could be an ambulatory carrier when needed, drastically shortening transportation time to field hospitals. They were used to lay smoke screens, deliver mail, plow snow and clear brush. They were even equipped with water tanks and PTO-driven pumps to double as mini fire engines.

According to Gen. Dwight D. Eisenhower, "The Jeep, the Dakota, and the Landing Craft were the three tools that won the war."

### Enter CJ

In 1945 Willys produced the civilian Jeep CJ-1, and later that year the CJ-2 or "Agri-Jeep," was created. The CJ-2 prototype would become the 1945 civilian full production version CJ-2A, which was the first Jeep produced for farming, ranching and industrial applications. According to military vehicle historian Jim Gilmore, "Willys couldn't stray too far away from the military Jeep because of the surplus parts that were available."

Bridging the gap between utilitarian and farm vehicles, Jeep also produced a wagon (called the Jeepster) in 1946 and a pickup truck in 1947. The Jeepster



The Howie Machine Gun Carrier was known as "The Belly Flopper."

was originally equipped with rear-wheel-drive (RWD) but eventually was outfitted with four-wheel-drive (4WD). This vehicle was said to be the first all-steel utility vehicle.

The popularity of the CJ-2A led to the 1949 introduction of the CJ-3A. Still powered by the Go Devil engine and T-90 transmission, it featured a beefed up suspension, one-piece windshield and waterproof ignition system.

The beginning of the Korean War in 1950 saw Jeep thrown into battle once again. The M38, which began production in 1949, was used alongside WWII Jeeps that managed to survive the war. The M38 was an updated version of the CJ-3A that had conventional wipers, larger headlights and a stronger suspension and drive axle.

The next version of the military Jeep was the M38A1 and started production in 1951. This vehicle had a longer wheelbase and was heavier than the M38. It also had a larger gas tank and a new engine with increased horsepower.

### Kaiser takes notice

In 1953, industrialist Henry Kaiser of Kaiser Motors purchased Willys-Overland to operate as a subsidiary. The company's name was changed to Willys Motor Company and production of the Jeep CJ-3B began, once again featuring updates to its engine and drivetrain. The CJ-3B was also licensed and exported overseas.

Willys intended to follow the CJ-3 designation with a CJ-4, but only one CJ-4 concept was ever built. It is said that the CJ-4 yielded to Korean War M38 and M38A1 production.

The CJ series continued after the war with the introduction of the CJ-5



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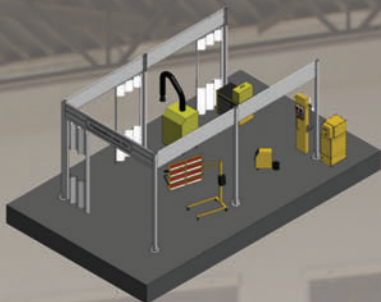
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in early 1955. Later the same year, the 20-in. longer CJ-6 was produced and marketed as a work vehicle.

The desire to utilize the more established Kaiser name led to the 1963 formation of the Kaiser-Jeep Corporation.

### American Motors jumps in

By the late 60s, the CJ-5 was in need of funding to expand. American Motors Corporation purchased Kaiser-Jeep in 1970, and became AMC-Jeep.

Taking note of consumer demand, AMC increased the size of the CJ-5 wheelbase, fenders and hood to accommodate larger engines and more sophisticated drivetrains. The frame was bolstered and a limited-slip differential was added. Ergonomics were improved and options such as a tachometer, AM-FM radio and power disc brakes were offered.

Sensing the need for an even larger vehicle with more creature comforts, the CJ-7 was produced from 1976-1986. The end of the 1970s saw a decline in the U.S. automotive industry, as European and Japanese competition produced smaller, less expensive and more fuel-efficient vehicles. By 1980, France's Renault owned controlling interest in AMC-Jeep.

Unfortunately for the military Jeep, AMC subsidiary AM General contracted to produce the High Mobility Multipurpose Wheeled Vehicle (HMMWV, or Humvee) in 1983. This was the death knell for the military Jeep and 1985 witnessed the end of its production.

### Chrysler buys AMC-Jeep

The introduction of the 1984 Jeep Cherokee seemed to temporarily revive sales. Looking to expand its market share, Chrysler Corporation purchased the struggling AMC-Jeep in 1987.

That year, the new Wrangler YJ replaced the beloved CJ. Produced until 1995, the YJ was deemed "soft" and more "sporty" than the rugged Jeep of yore, and was not an instant hit. The next version of the Wrangler was called the TJ and was produced from 1997-2006.

The year 2007 brought on the current production Wrangler JK, featuring the option of a long-wheelbase 4-door model. Trim levels included right-hand-drive, off-road and "luxury" versions.



**Ford GPA amphibious Jeep.**




**Ford model GP crossing a stream.**

Computer electronics were introduced and new features such as antilock brakes; traction control, hill decent and stability control were added. The KJ is equipped with a 3.6-liter V6, and can be equipped with either a 4-speed automatic or 6-speed manual transmission.

### In the end, it's still a Jeep

The Jeep has become one of the most versatile vehicles ever produced. Since the development of Bantam Number One in 1939, it has survived three wars, eight different ownership variations and no less than ten model changes. Ford is the only World War II Jeep producer still standing, and Chrysler continues to carry the Jeep torch into the future. Although more consumer friendly, today's rugged design and go anywhere prowess still harkens back to the car's beginnings.

Some say that today's Jeep is a mere shell of its predecessor, a "tough" vehicle that could withstand the rigors of war. One thing's for sure, the Jeep is one of few automobiles built for battle that successfully evolved into a consumer favorite. 



# New meaning for Army green

Military hybrid vehicle designs do a lot more than just save fuel

BY **PETER F. MEIER** | MOTOR AGE TECHNICAL EDITOR

One of the most dangerous missions our service men and women face is in the delivery of fuel to remote outposts. These lumbering caravans make easy targets for insurgents, and we've all seen the carnage caused by Improvised Explosive Devices (IEDs). The development of hybrid and fuel cell technology not only provides military ground vehicles with increased range and capability, they reduce the need for these dangerous missions. According to one military source, "a mere one percent improvement in energy efficiency would mean 6,444 fewer soldiers would have to participate in fuel convoy missions." With the help of some new friends at the U.S. Army's Tank Automotive Research, Development and Engineering Center (TARDEC), I was able to learn about some of the projects currently being worked on.

But first, exactly who and what is TARDEC? Headquartered at the U.S. Army Detroit Arsenal in Warren, Mich., TARDEC is the nation's laboratory for advanced military automotive technology and serves as the Ground Systems Integrator for all Department of Defense (DOD) manned and unmanned ground vehicle systems. With roots dating back to World War II, TARDEC is a full life-cycle, systems engineering support provider of first choice for all DOD ground combat and combat support weapons, equipment and vehicle systems; it is made up of both military and civilian experts. TARDEC's staff of technical, engineering and scientific professionals lead cutting edge research and development

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projects in Ground Systems Survivability, Power and Mobility, Ground Vehicle Robotics, Force Projection, and Vehicle Electronics and Architecture. All of these projects focus on improving the effectiveness of our nation's ground forces while keeping our soldiers safe.

### FED Alpha and Bravo

Research into hybrid drivelines was only part of the equation that TARDEC designers were charged with. Improved efficiency is not only measured by miles per gallon, but by what the vehicle can do in the field to support ground troops and how safe it can keep them in the case of an enemy attack or accident.

One of the early prototypes was the Fuel Efficient Demonstrator (FED) Alpha. "Light" by military standards (11,650 pound truck with a 2900 pound payload), the Alpha featured a Cummins 4.5 liter 4-cylinder common rail diesel engine said to produce 200 horsepower and 560 lb/ft of torque (they don't have to worry too much about emissions). It's coupled to a 30-kilowatt 24-volt starter/generator for power produc-

tion and that can put a big load on the engine at low rpm, so a small overdriven supercharger is mated to the turbo-equipped diesel. The supercharger is only used at low rpm and disengages as the engine reaches turbo operating range. The electric power is needed because of all of the accessories and tactical equipment fitted to the platform. Power delivery to the drive wheels is accomplished through an Aisin six-speed automatic, similar to the unit used in the Ram Chassis Cab.

Built around a blast shielded aluminum monocoque frame, it measures roughly 17 feet in length, 7½ feet wide and 7 feet tall. It carries four fully equipped soldiers riding in blast-attenuating seats. Ride quality is provided through air springs with titanium coils fitted inside to minimize ride height loss if a bag is damaged. Spring control is handled by Koni FSD shocks and the terrain challenges are met with composite wheels fitted with Goodyear Unisteel 335/65R22 tires.

TARDEC testing put fuel economy for the FED Alpha at 7.1 mpg during

urban mission use, 4.8 mpg on cross-country missions, and 12.6 when performing convoy and tactical idling (using a half a gallon of fuel per hour). And while most of us would cringe at those numbers from our personal vehicles, even if we did own a monster 4x4, the FED Alpha actually achieved a 70 percent improvement in overall fuel economy.

The following year, TARDEC displayed the FED Bravo at the SAE World Congress. The Bravo incorporated hybrid drive technology that the Alpha didn't have, and was also designed with the ability to export electrical power—enough to handle the electrical needs of a small command post or base if need be. The Bravo is powered by a Ford 4.4 liter, twin turbocharged V8 diesel rated at 268 horsepower coupled to a six-speed automatic connecting to the rear drive. The front drive is powered solely by an electric motor/generator that is used to recharge the lithium ion battery during braking (regenerative braking). It is also equipped with automatic start-stop like most hybrids to conserve fuel and is ca-



The ULV is not intended for deployment, but for research that will impact future designs of light tactical military ground vehicles.

IMAGE: TARDEC U.S. ARMY'S TANK AUTOMOTIVE RESEARCH, DEVELOPMENT AND ENGINEERING CENTER





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**CLOCKWISE FROM UPPER RIGHT:**  
JEREMY SEANOR, CRISTINA FRONZAGLIA, RON PAYTON, KEVIN BIRD, SGT. JOHN HAYES, JIM KVATEK (IN FRONT), WILLIE B, STEVE LEHNER, PAUL EVANS



Marine Master Sergeant John Hayes was on patrol in Afghanistan in December 2010, when he stepped on an IED (improvised explosive device). Hayes survived, but endured amputation of both legs and half of his pelvis. While such an experience would devastate most people, Hayes is not most people. He is determined to live a full life—playing sports, enrolling in college and tending to wife Janel and daughters Katelyn, Elizabeth and Caroline.

Hayes also works on cars. When family friend Roland “Corky” Alford learned that Hayes had purchased a 2009 Corvette and modified it with hand controls, Alford wanted to find a way to thank him for his sacrifice. He contacted SPEED channel’s *Two Guys Garage* show in Orlando, and talked to the producer about refinishing the Corvette. *Two Guys* stepped up, and so did PPG.

*Two Guys* contacted Cristina Fronzaglia, communications manager for PPG Refinish, with an offer about the show. Fronzaglia immediately organized a team to give the Corvette a premium look. A team of eager PPG volunteers collaborated—working six days straight on the Corvette’s dream makeover. Their effort was videotaped and edited into two episodes of *Two Guys Garage*.

Hayes really liked the color silver, the OEM finish of his Corvette. The PPG team remained true to his liking. Using the ENVIROBASE® High Performance waterborne basecoat system, custom artist Paul Stoll and team created the car’s one-of-a-kind, tone on tone, silver finish. For a unique accent, they painted the T-top deep black with gold flake.

Finishing touches included pin striping, as well as graphic touches just for Hayes: a personalized tattoo on the back of the car, the “buzzard bomb” Marine Explosive Ordinance Disposal logo on the hood, and a special “I love (heart) explosives” graphic on the driver-side door sill, to commemorate a soldier friend in Hayes’ unit who died in the field.

Hayes isn’t an emotional guy, but when he saw the finished car as revealed during the *Two Guys Garage* taping, the tears flowed. “You didn’t have to do this for me,” Hayes said humbly. “Thank you.”

As Corky Alford said, “Sometimes paint does more than shine. It brings people together.”

pable of going electric only for short distances. Further efficiency improvements were gained from using ceramic brake rotors (rather than steel) and by combining the braking and steering hydraulics into one system. The Bravo's fuel economy is estimated at 8.2 mpg in urban environments (that's military for city driving) and 14.2 mpg on paved highway.

### CERV

The CERV, or Clandestine Extended Range Vehicle, is a joint project of TARDEC and Quantum Fuel Systems Technologies. It was designed for quick-paced surveillance and target acquisition missions. This diesel/hybrid platform can maintain speeds of 80 miles per hour and climb 60 percent grades – the ultimate dune buggy!

Power is supplied to the wheels through a 100-kilowatt drive motor and is entirely electrically driven. The Ford 1.4 liter Duratorq engine drives a 50-kilowatt electric motor/generator used to keep the 380-volt lithium-ion battery pack charged and to feed the electric drive. The CERV can operate in electric-only mode for 5-12 miles with the engine off. I guess that's why it's a "clandestine" ERV!

Its overall size allows it to fit in the back of the V-22 Osprey tilt-rotor aircraft. There's room for three seated soldiers with a fourth standing to man the .50 caliber M-2 machine gun, and

it has a towing capacity of 5,000 pounds. It's relatively light, too, weighing in at 3,500 pounds. Range is approximately 300 miles with its internal fuel storage but that can be doubled with the addition of external tanks.

### ULV

How about a Humvee-sized vehicle with the survivability of a larger transport, mated with the fuel efficiency of a hybrid drivetrain? That's what the Ultra Light Vehicle (ULV) prototype was designed to do. From concept to build in only 16 months using commercially available materials, the ULV is one of TARDEC's newest projects and was designed to meet these DOD goals: 4,500 pound payload capacity, under 14,000 pounds curb weight, and occupant protection at least equivalent to the Mine-Resistant Ambush-Protected (MRAP) vehicle. Three prototypes were built, with two assigned for mobility, mine blast and ballistic survivability testing while the third was moved to TARDEC's Ground Systems Power and Energy Laboratory for mobility and fuel efficiency testing. The ULV is not intended as a future replacement for the Humvee or for the Joint Light Vehicle Tactical program, but instead will be a research platform that will shape the design of ground vehicles in the foreseeable future. "It's all about sharing the data," said Mike Karaki, ULV program manager in a TAR-

DEC press release. "If we have an ability to share the data internally within TARDEC, and externally within the program managers and program executives offices, and beyond that with other government agencies, we will attempt to do that. It's helping shape and inform future programs."

The ULV uses a hybrid powertrain that drives the front and rear axles with electric motors mounted in the center of axle and directly coupled to a conventional differential (only one is needed for propulsion, adding redundancy to the powertrain in the event of damage). The elimination of the driveline allows engineers to improve blast shielding in the underbody of the vehicle. A Subaru Boxer (horizontally opposed 4-cylinder) turbocharged diesel provides the power to the 200 kilowatt motor/generator, feeding a 380 volt lithium-iron phosphate battery pack rated at 14.2 kWh and capable of providing all electric drive for approximately 10 miles if needed. A liquid adaptive suspension system with 18 inches of travel keeps the 40x14.5R20LT Mickey Thompson Baja ATZ radials on the terrain. Inside are the latest command, control, communications, intelligence, and surveillance and reconnaissance equipment. "We tried to push the envelope in terms of state-of-the-art and out-of-the-box materials throughout the entire development process," said Karaki.



**(Left)** The CERV uses electric drive and can go silent (electric only) for up to 12 miles. **(Right)** The electric only drivetrain means better underbody protection for our soldiers from IEDs, and reduced risk by reducing the need for fuel supply convoys.





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Dan-Am Co. and SATA Spray Equipment are proud to be friends and sponsors of Mickey Harris. Mickey is one of the pioneers of freehand airbrushing. He has been airbrushing for over 35 years professionally. He is an accomplished artist in other realms as well. Mickey is a member of the Pentagon Art Program and has paintings hanging in the Pentagon. Mickey is highly acclaimed and does work for some of the biggest companies in the world.

He is a renowned educator and is known worldwide for his compelling teaching style and sense of humor. He teaches classes across the USA and Canada.

Mickey is known for his patriotism and love of his country, which is reflected in many of his most famous works to date. He has poured thousands of hours of his artistic talent into military, veteran programs and charities. He has done work for the Fisher House and Achilles Foundation and still considers it his and every American's duty to take care of our wounded vets.

Mickey designed the Dan-Am Company Pro-Stencil Series and has his own line of paint masking called Sticky Mickey, distributed by Dan-Am Company through jobbers across the country. Mickey was instrumental in the development of the SATAglyph 4 airbrush which he uses exclusively for all of his artwork and classes.

Visit Mickey's website to view all his outstanding work and class schedules; [mickeyharrisart.com](http://mickeyharrisart.com)



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Remote-mounted and controlled electronics improves space and reduces HVAC loads. Occupant safety is enhanced through the improved blast protection allowed by the electric-only drive and by designing in seven different points of entry/exit. "Clamshell" doors open away from the B-pillar to offer protection to soldiers as they exit the cabin. Further protection from attack is provided by a floating floor design that acts as a crush zone between the occupants and the steel hull and newly developed ceramic armors that also aid in overall weight reduction.

### Hydrogen fuel cells

Nearly two years ago, in Honolulu, Hawaii, the Army unveiled a fleet of 16 hydrogen fuel cell vehicles that were tested in an effort to find ways to reduce the dependence on petroleum fuel sources. This past December, TARDEC

hosted a ribbon-cutting ceremony to kick off its newest hydrogen fuel cell testing program in partnership with General Motors at the U.S. Army Ground System Power and Energy Laboratory (GSPEL in military lingo). The event highlighted the already numerous Cooperative and Research Development Agreements (CRADAs) aimed at furthering the overall mission of improved fuel efficiency and reduced energy dependency. "Through CRADAs, such as the one with GM, the Army has the opportunity to leverage its research and development efforts with industry," explained TARDEC director Dr. Paul Rogers in the press notice. "A goal of TARDEC is to demonstrate battlefield fuel reduction to reduce the logistical burden on our warfighters...and will assist in maturing and accelerating technologies critical to the Army's future ground vehicle platforms."


### Unmanned vehicles

If you've been keeping up with our reports on autonomous driving, it should come as no surprise that the same concept is being applied to military applications. What better way to handle the most dangerous of logistical operations (keeping the troops supplied) than by removing the troops from the vehicles entirely?

That's the thinking behind the Autonomous Mobility Appliqué System (AMAS). Developed jointly by TARDEC and Lockheed Martin, the concept of driverless convoys was demonstrated at Fort Hood, Texas earlier this year. The system is designed not only for long distance, open road missions but is also compatible with the challenges of an urban environment.

In testing, driverless vehicles were able to navigate a variety of hazards and obstacles including pedestrians, road intersections and traffic circles, oncoming traffic and passing vehicles. The vehicles themselves aren't what are special. It's what is added that makes the system work. Each vehicle is equipped with a high performance Light Detection And Ranging (LIDAR) sensor system and second Global Positioning System (GPS) receiver. The system equipment, according to Lockheed Martin, could be used on virtually any military ground platform.

Initially awarded an \$11 million contract in 2012, Lockheed Martin developed the multi-platform kit integrating low cost sensors with both Army and Marine tactical vehicles to enable autonomous operation in convoys. The result is not only improved safety for our military men and women; it also helps move the military toward an end goal of totally autonomous warfare.

Similar AMAS algorithms are also used in the Squad Mission Support System (SMSS), a distinctive six-wheeled platform that has been successfully used by troops in Afghanistan. Robotics, integrated and actual, are helping to relieve the burden of supervisory and mundane tasks from soldiers in the field under combat conditions, allowing them to focus on keeping themselves and their fellow soldiers safe. 



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## THE LAST DETAIL [✓]

**A**s an Air Force veteran – and the son of a disabled vet – I understand the sacrifices that serving our country can entail. That's why I believe in finding ways – large and small – to demonstrate appreciation to military families and veterans.

I applaud, for example, the many shops that donate refurbished vehicles to active military families and veterans in need, and I appreciate efforts like 3M's "Wounded Warriors" project. But don't feel like taking on a big project is the only way you can help and honor those serving our nation. A friend of mine who is a hairstylist, for example, goes to Walter Reed Army Medical Center regularly to provide free haircuts to recovering soldiers. I think all of us should look for ways to say thanks.

Some of those opportunities may benefit your business as well. Every branch of the military has a recruitment website where you can look at resumes of people getting out of the military, or you can post a help wanted ad. When I was a shop owner, I used the Army Career and Alumni Program website ([www.ACAP.Army.mil](http://www.ACAP.Army.mil)) to recruit employees from among those leaving the Army. After all, these folks are talented and disciplined and used to showing up on time, and deserve a chance at a new career after their service.

More recently, I've helped some of my client shops hire through the military alumni websites. One shop, for example, was looking for someone to train as an estimator. There was a guy whose job in the military had been to inspect aircraft after a mission to ensure they were still flight ready. Talk about someone trained to pay attention to detail. Someone who's worked in supply in the military could make a great parts person. And in some cases, the military will help cover some of the costs of training or tools these vets need to launch a new career.

Most military bases include a "hobby shop," a place where those stationed there can work on their own vehicles. If you live near a base, maybe you can offer to volunteer once a month to help coach or mentor some of them.

Sometimes it's even smaller gestures of gratitude that mean the most. One of my most vivid memories as a shop owner was when a woman came into my shop in tears. I asked her what was wrong, and she told me her son was sick, her husband was in Iraq and now she'd just wrecked her car.

“Every branch of the military has a recruitment website; these folks are talented and deserve a chance at a new career after their service.”

## GIVING BACK TO THOSE WHO SERVE

### Even small gestures of gratitude can mean a lot to veterans and military families

We helped her calm down, and I looked at the car and found that all it needed was a bumper cover. I told her we could get the new part ordered and painted, then have her back in to put it on while she waited. She said it really wasn't something she could afford at the moment, but I told her to not worry about that, that we would take care of it for her.

"Your husband is over there serving in the military for us, and we appreciate that," I told her.

I talked to my crew about the situation, and right away one of the guys said he'd paint it for free. When she brought the car back, another tech installed the part on his own time. Those were the sort of great people I was lucky to have working for me.

Her tears the second time she was in the shop were tears of gratitude. She was insistent that we take something for our work, but we told her no way.

A month later, we got a package in the mail. It was an American flag, folded into a triangle. With it was a note from that woman's husband, expressing his appreciation for the work we did at no charge.

"I want you to know this flag was flown over Fallujah in honor of what you did for my wife on behalf of me and everyone here with me," he wrote. "We just want to thank you for looking after our families."

I don't think any other gift we received from a happy customer meant as much to me and my crew as that flag.

If you have a story about helping out a veteran or military family, please share it with me.

God bless the U.S.A. and our troops. 🇺🇸

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**Mike Anderson**, a former shop owner, currently operates [COLLISIONADVICE.COM](http://COLLISIONADVICE.COM), a training and consulting firm.

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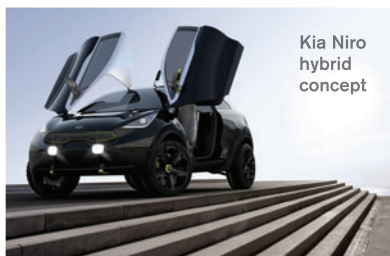
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# Kia's Growing Global Footprint

**W**hen you set out to build some of the world's best vehicles and have confidence in that's what you've done, you want the world to know. Towards that effort, Kia launched an aggressive, high profile advertising program second to none. For example, Kia was a prominent advertiser during the Super Bowl, which is about as high profile as it gets.

But you also couldn't miss other Kia advertising ranging from being a major sponsor of the Australian Open to network ads featuring the Soul's hip hamsters. Moreover, print advertising has covered the gamut from *Car & Driver* to *Yoga Journal*. With such diverse ad placements, the message is clear: Kia is appealing to many different audiences because we offer vehicles that are appealing to all of them.

Kia's advertising certainly helps sell vehicles as well as build the brand. You can travel the world over and Kia is mentioned in the same breath with other long-standing vehicle manufacturers because of the vehicles it is building.



**Kia is appealing to many different audiences because we offer vehicles that are appealing to all of them.**

Evidence of that is the Kia Cadenza that was named International Car of the Year by *Road & Travel Magazine (RTM)* at the 2014 North American International Auto Show. Perhaps this is becoming somewhat of a foregone conclusion because the 2013 Optima won the award last year.

Courtney Caldwell, *RTM* editor, was duly impressed by the Cadenza, "Overall, the car is beautiful and affordable, making upscale style and performance attainable to mid-America. We applaud Kia's rapid

rise from underdog to unbelievable!"

Unbelievable clearly defines the Kia brand because of how quickly we became a major player in the industry. Kia is now at the point of surpassing its competitors with its advanced combustion engine powered vehicles. The next step is to lead the industry with vehicles that reduce the country's dependency on non-renewable resources. To that point, at the Chicago Auto Show Kia unveiled the Soul EV, the company's first all-electric, zero-emissions vehicle expected to be available in U.S. in 2014. Also at the Chicago Show, Kia highlighted the refreshed 2014 Optima Hybrid and the Niro hybrid concept. Pushing the envelope on the other end of that spectrum is the GT4 Stinger concept designed as a true driver's car.

Ten years ago the pundits thought they had Kia pegged. Today they are abundantly aware that we will continue to challenge them — and consumers — as to what they think they know about Kia.

**Kia Motors America, Inc.**

## IN THIS ISSUE

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### *Open and Shut Case*

Eliminating sunroof noises on the Kia Forte Koup (TD)



### *Adrift No More*

Sub-Frame and suspension adjustments for drift concern



### *A Genuine Solution*

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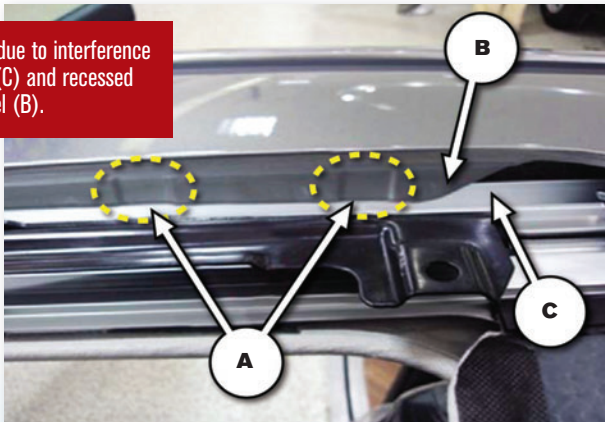
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# Open and Shut Case

## Eliminating sunroof noise

This article provides information relating to some Forte Koup (TD) vehicles built from June 5, 2009 to December 8, 2009 that may have abnormal noise from the sunroof due to interference between the sunroof rail and the roof panel while driving on uneven roads or when cornering.

The noise may occur due to interference between sunroof rail (C) and recessed areas (A) of roof panel (B).

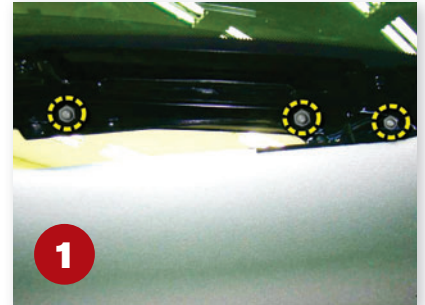


MODEL FEATURED:  
2010 Forte  
Koup (TD)

» **WARNING:** Do not attempt without the proper skills, training, or tools. Vehicle servicing performed by untrained persons could result in injury to those persons, to others, or to the vehicle.

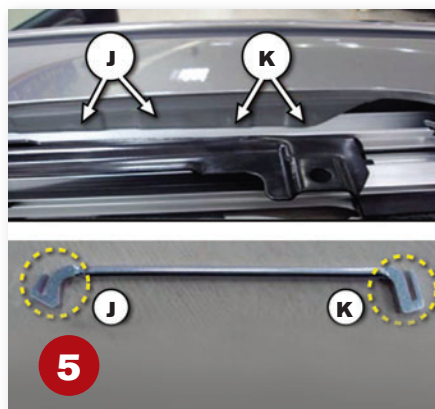
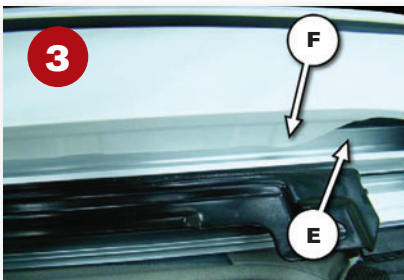
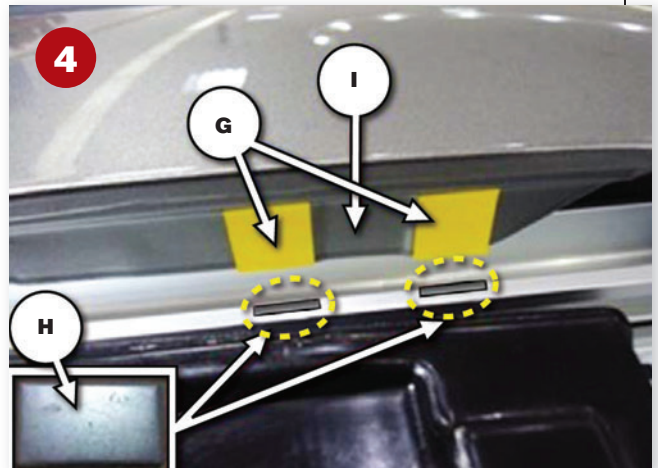
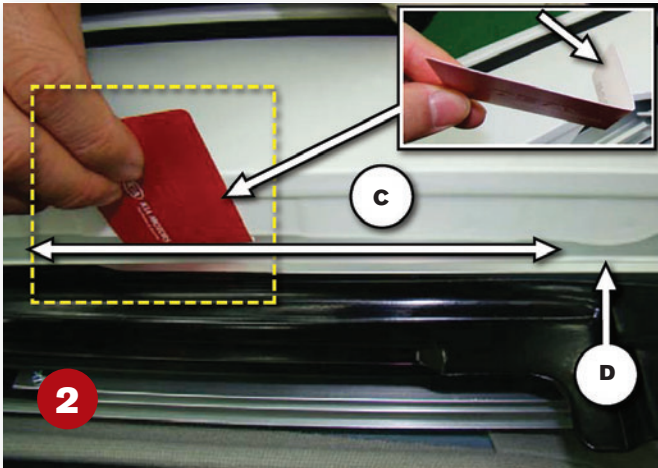
» This and other technical information is available at [www.Kiatechinfo.com](http://www.Kiatechinfo.com).

» All images are for illustration purposes only.



**1** First, tilt up the sunroof glass, and then remove the six (6) sunroof glass mounting nuts, then carefully remove the sunroof glass from the sunroof assembly and store in a safe location until reassembly. Tilt down the sunroof guide with the sunroof switch.

**2** Fold a standard business card to approximately 0.6~0.8 in. (1.5~2 cm) as shown in the photo, and then insert



the folded area between the roof panel (C) and the sunroof rail (D). Slowly slide the business card along the gap to check whether it passes smoothly or with excessive resistance. Repeat this procedure on the opposite side.

**3** If the business card passes smoothly, no further action will be required. If the card moves with excessive resistance, carefully adjust the gap between the sunroof rail (E) and the roof panel (F) by following the next steps.

**4** In order to properly protect the roof panel paint during repair, attach tape or stickers (G) on the appropriate areas of the roof panel, and to protect the sunroof rail, lean the supplied metal pad (H) against the sunroof rail.

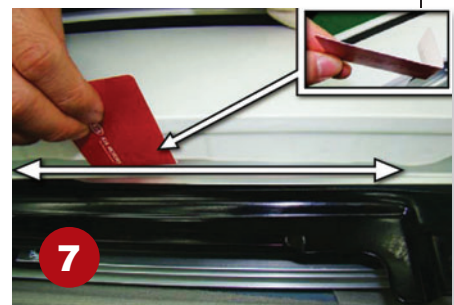
**Notice:** Attach tape or stickers to both sides of the recessed area (I) of the roof panel as shown in the photo.

**5** Shorter pivot bar head is used to adjust the front recessed area (J). Longer pivot bar head is used to adjust rear recessed area (K).

**Caution:** Do not use the pivot bar tool on bare roof panel. Always use a piece of tape or appropriate protective sticker.

**6** Fit the applicable end of the pivot bar head onto the roof panel as shown in the photo. Slowly move the pivot bar upward until the pivot bar tool head makes contact with the metal pad as shown in the photos.

**7** After adjusting the panel, recheck the interference with the business card as performed in step 3. Reinstall the sunroof glass in reverse order of removal, and adjust as needed. Then check the clearance between the roof panel and the sunroof glass to make sure fit is correct. **KIA**



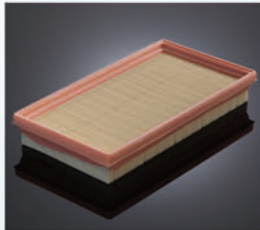
#### REQUIRED SST

Tool Name	Tool Image/Part No.	Remarks
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MODEL FEATURED:  
Sorento (XM)  
Models

## Sub-frame and suspension adjustments for drift concern

# Adrift No More

**T**his article provides information related to a drift condition and adjusting/settling the suspension components under load as assembly variation can remain on the suspension. Camber and caster may need slight adjustment depending on actual road conditions. To improve this condition, the technician is requested to first follow the TSB CHA 032 (Drift/Pull Diagnosis and Best Practices Tips) for specifications and if they are outside the parameters, then perform the instructions as directed in this TSB.

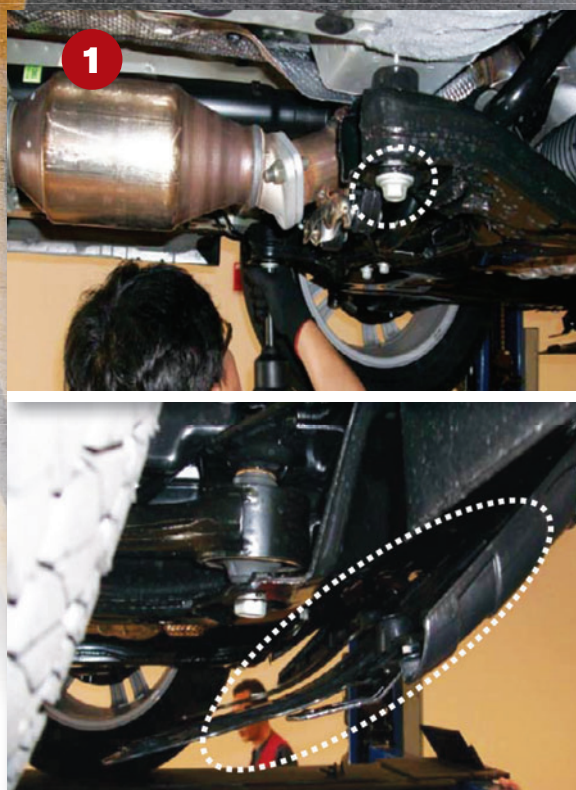
**Notice:** Before performing this TSB, the alignment machine must be calibrated and updated with the latest software available. Failure to use the proper specifications will result in incorrect alignment settings and a customer return.



» Lifting device as shown must be used to load suspension components, if the suspension components are left to hang as with a 2 post lift, this procedure will not help in resolving the concern.

The method behind this procedure is to compensate for loaded or twisted suspension bushings and sub-frame position which can occur during normal build variation.

Tire rotation and wheel alignment should have been performed within the 12 months/12,000 miles before using this TSB.



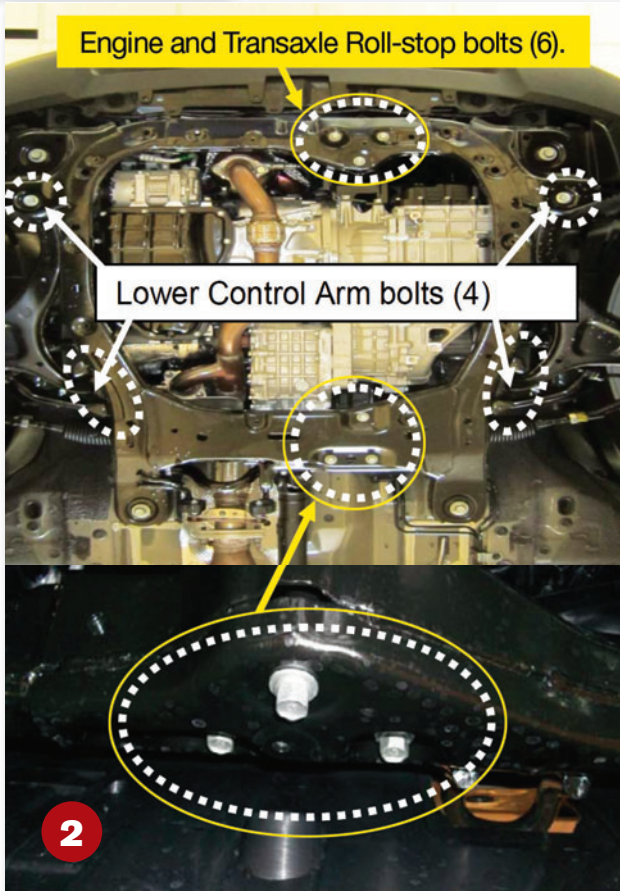
### Cross-member and Lower Control

**1** Partially remove the front under-cover splash shield (8 bolts). Loosen but do not remove the 4 sub-frame mounting bolts. Lower the sub-frame approximately 2-3mm.

» **WARNING:** Do not attempt without the proper skills, training, or tools. Vehicle servicing performed by untrained persons could result in injury to those persons, to others, or to the vehicle.

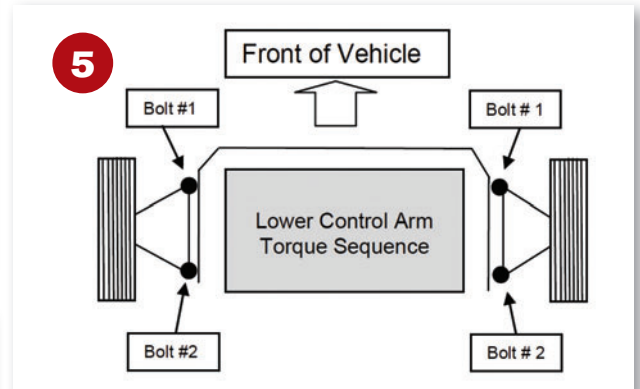
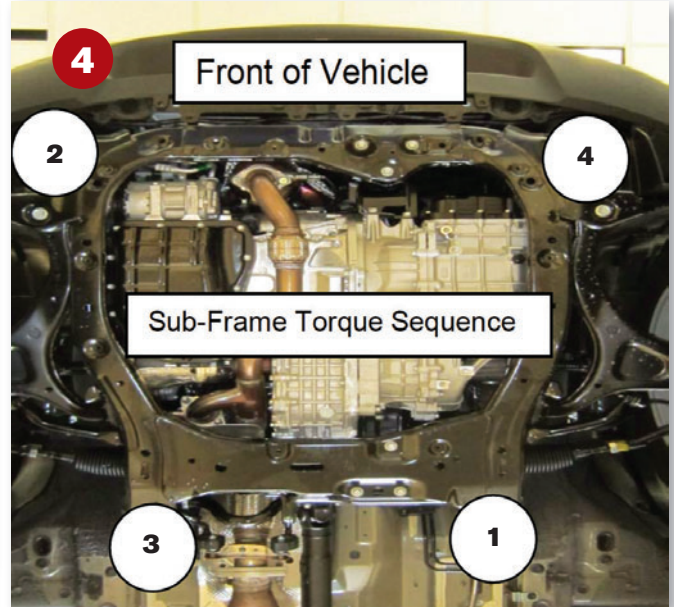
» This and other technical information is available at [www.kiatechinfo.com](http://www.kiatechinfo.com).

» All images are for illustration purposes only.



**2** Loosen the lower control arm mounting bolts, front and rear of control arm. Do not fully loosen the bolts, only loosen enough until movement is seen with the lower control arm mountings. Loosen but do not remove the roll-stop bolts for both engine and transaxle. Jounce the vehicle up and down several times, forward and rearward.

**3** Start the engine and turn the steering wheel: Full left turn and full right turn — perform this 2 times — then back to center position. Steering wheel rest position: approximately 180 degrees or straight ahead.



## Follow this procedure for drift right complaint

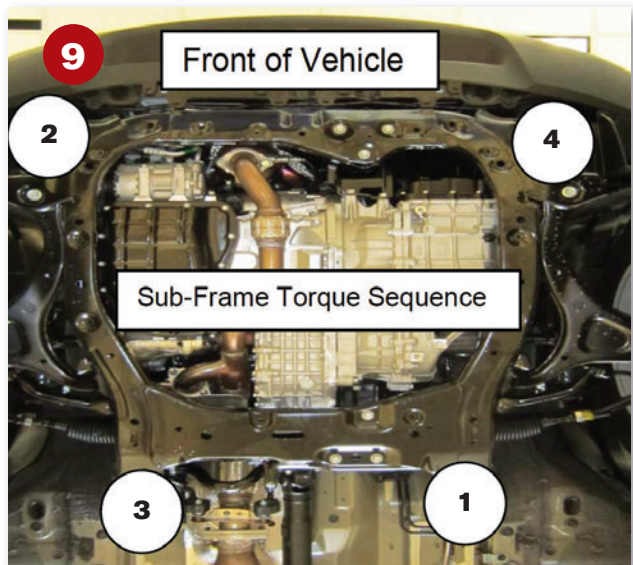
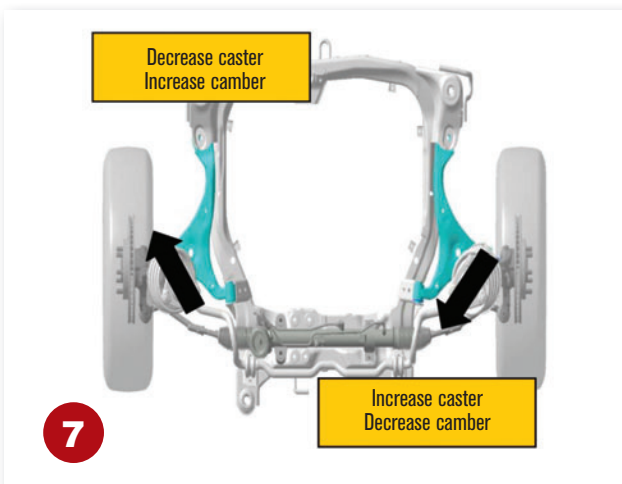
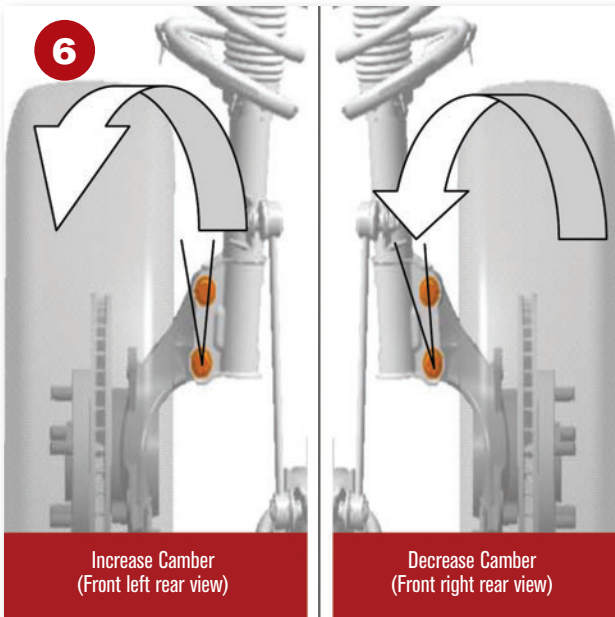
- 4** Follow the torque sequence for sub-frame:
- While holding the steering to the full left stop, torque the #1 bolt to 101~115 ft. lbs. (137~156Nm)
  - Same instruction to bolt #2
  - Same instruction to bolt#3
  - Same instruction to bolt #4

**Caution:** Do not hold wheel at the full stop for more than 5 seconds at a time, only during tightening of each fastener.

**5** While holding the steering wheel to the full left, tighten the lower control arm mounting bolts to 101~115 Ft. lbs. (137~156 Nm) starting with the front mounting bolt #1 and the rear mounting bolt # 2. Complete same procedure for both sides.

**Caution:** Do not hold wheel at the full stop for more than 5 seconds at a time, only during tightening of each fastener. Tighten the roll-stop bolts on the engine and transaxle mounting to 32~49 ft. lbs. (49~63 Nm). Install 8 bolts for the front splash shield.





### Strut & Knuckle Rotation (right drift condition)

**6** Jack the front of the vehicle up by the sub-frame. Do not use the lower control arm as a jacking point.

- Loosen the strut mounting bolts.
- Pull the top of the left tire outward while pushing in on the bottom (Positive Camber). Tighten bolts to specification as required.
- Perform the same procedure to the right side camber with the exception of adding (Negative Camber). Push the top of the right tire in while pulling the bottom out.
- Tighten bolts to 115~130 ft. lbs. (156~176 Nm).

### Strut Top Movement (right drift condition)

**7** Loosen the left side upper strut mount until movement is possible and twist the assembly towards the left while pushing forward decreasing the caster and tighten the bolts to 32.5~47 ft. lbs. (43~63 Nm).

Perform the same procedure on the right side as was performed on the left side while turning left and pushing to the rear to increase caster at the same time while tightening nuts to 32.5~47 ft. lbs. (43~63 Nm).

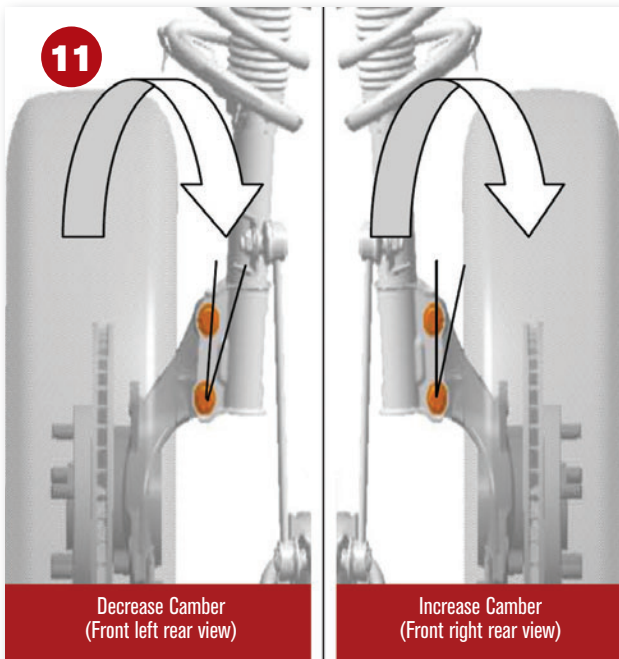
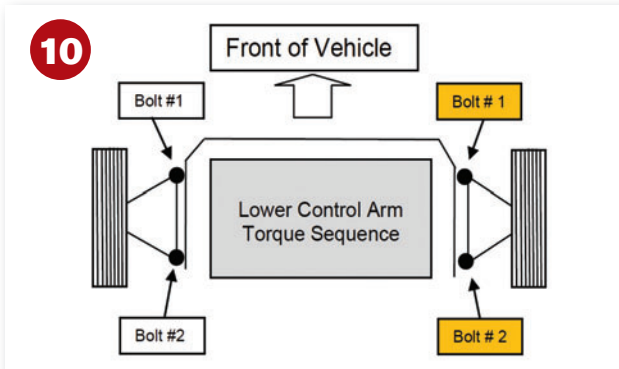
**8** Technician is shown torquing strut mounting bolts to specification. Proceed to Step 14 to perform the 4-Wheel Alignment.

### Follow this procedure for drift left complaint

- 9** Follow the torque sequence for sub-frame:
- While holding the steering to the full right stop, torque the #1 bolt to 101~115 ft lbs. (137~156Nm)
  - Same instruction to bolt #2
  - Same instruction to bolt #3
  - Same instruction to bolt #4

**Caution:** Do not hold wheel at the full stop for more than 5 seconds at a time, only during tightening of each fastener.

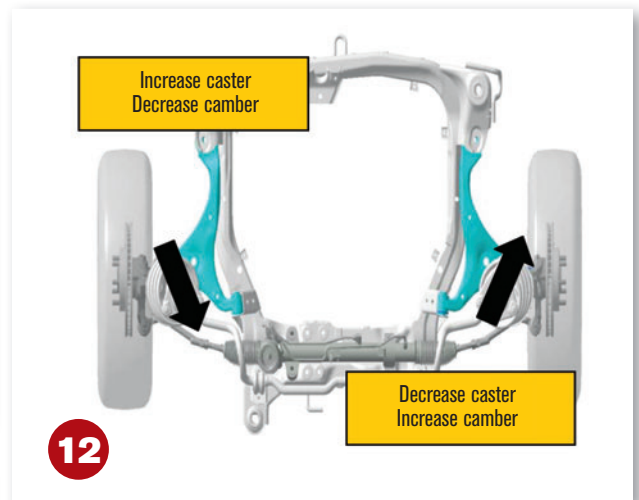
» This and other technical information is available at [www.Kiatechinfo.com](http://www.Kiatechinfo.com).



**10** While holding the steering wheel to the full right, tighten the lower control arm mounting bolts to 101~115 ft. lbs. (137~156 Nm) starting with the front mounting bolt #1 and the rear mounting bolt #2. Complete the same procedure for both sides.  
**Caution:** DO NOT hold wheel at the full stop for more than 5 seconds at a time, only during tightening of each fastener.  
 Tighten the roll-stop bolts on the engine and transaxle mounting to 32~49 ft. lbs. (49~63 Nm). Install 8 bolts for the front splash shield.

### Strut & Knuckle Rotation (left drift condition)

**11** Jack the front of the vehicle up by the sub-frame.  
 Do not use the lower control arm as a jacking point.  
 a) Loosen the strut mounting bolts.  
 b) Push the top of the left tire inward while pulling out on the bottom (Negative Camber). Tighten bolts to specification as required.  
 c) Perform the same procedure to the right side camber with the exception of adding Positive Camber. Pull the top of the right tire out while pushing in on the bottom.  
 d) Tighten bolts to 115~130 ft. lbs. (156~176 Nm).



### Strut Top Movement (left drift condition)

**12** Loosen the left side upper strut mount until movement is possible and twist the assembly towards the right while pushing rearward and tighten nuts to 32.5~47 ft. lbs. (43~63 Nm).

Perform the same procedure on the right side as was performed on the left side while turning right and pushing forward to decrease caster at the same time while tightening nuts to 32.5~47 ft. lbs. (43~63 Nm).

Torque strut mounting bolts to specification (as depicted in step 8).

**13** Perform four-wheel alignment as required.  
 Adjust rear camber angle to specifications and adjust front and rear toe angles.

Road-test to ensure the vehicle drives straight on a level surface.

**Notice:** Do not perform wheel alignments until your alignment machine has been calibrated and updated with the latest model year information. **KIA**

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