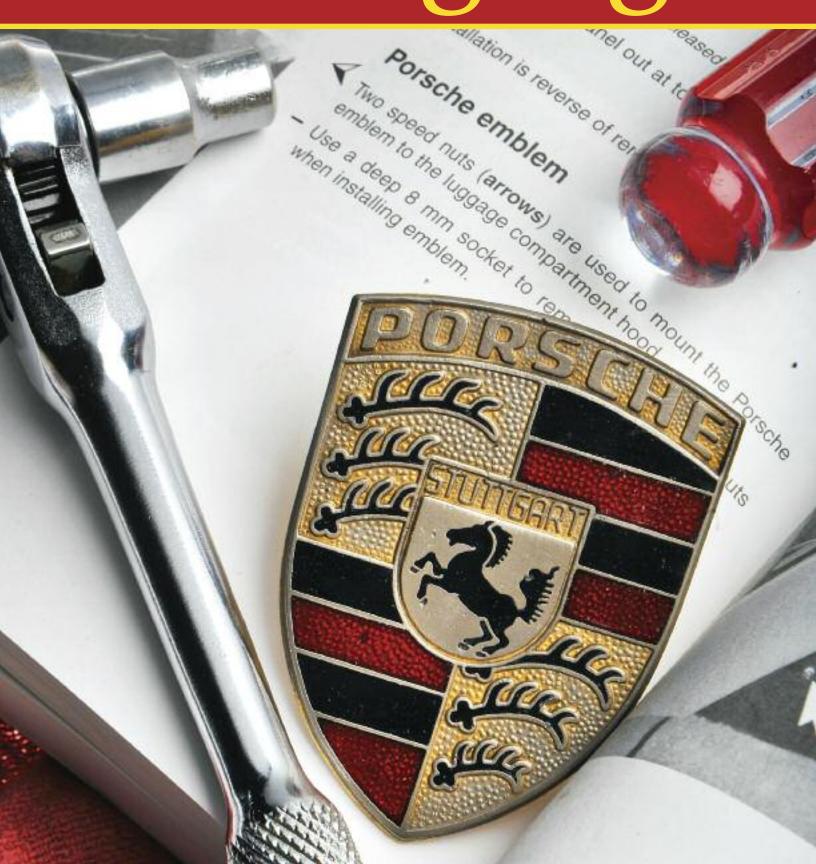
# der Vorgänger



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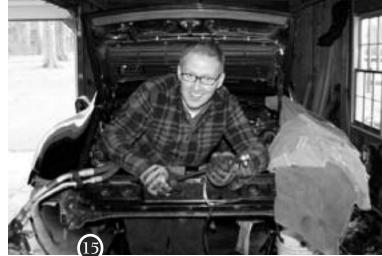
### Table of contents

- 5 The editor's column.
- **6** The president's column.
- 7 Club officers and progam chairs.
- 8 Potomac's 2013 calendar.
- **9** Two months of Potomac anniversaries and new members.
- 10 der Vorgänger columnist Sydney Butler covers the unveiling of the 2013 Cayman at the Los Angeles Automobile Show.
- 11 Shop safety
- 12 Bob Hopkins takes readers beneath his car for a Do-It-Yourself article on how to replace constant-velocity boots.
- 13 Steve Vetter upgrades a steering shaft bushing on an old 911.
- 14 Vetter details how easy it is to install a fresh-air scoop on his 944 track car to help with driver cooling on those hot summer days.
- 15 "How I Rebuilt My 993 Engine," by Don Mattingley, who had not done this DIY before.
- 17 New contributor Engelbert Muelhaupt shows how to install a short shifter in a 915 transmission.
- 20 Steve Bates sheds light on how to deal with stuck fasteners.
- **21** It's time to enroll in Potomac's High Performance Driving Clinic if you hope to attend Driver Education Events in 2013.

#### 20–27 How to:

- Build ramps
- Take out a stuck screw
- Bleed brakes
- Make your own brake bleeder
- Ensure wheel weights stay on







28 Sally and Alan Herod (pictured above), along with other Potomac members, make the long trip to Austin, Texas for the U.S. Grand Prix.

- 30 Caption contest winner says all those guys with the goggles look like Junior Birdmen!
- **32** Readers and their cars.

## der Vorgänger

The monthly magazine of the Founders' Region, Potomac.

Porsche Club of America.

#### February 2013, Volume 59, No. 1

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Letters to the editor are welcome but should be brief and may be edited for length. Please note if the letter or e-mail is submitted as a letter to the editor; please include a contact phone number for verification.

To subscribe: You must join the Porsche Club of America. Details at www.pca.org

## Welcome to Second Annual DIY issue

Richard Curtis

I'm happy to announce that you're reading the Second Annual DIY issue of  $der\ Vorgänger$ . While we're fortunate enough to have a DIY article in just about every issue of dV, readers often say they enjoy reading even more about

how maintenance and repairs are done. Whether they actually end up doing any of them is often another matter.

I believe the feeling of many is that simply knowing what a particular repair might invole and how long it takes removes some of the what-will-this-cost-me anxiety when they drop their car off at a dealer or specialist.

Please keep in mind that we hope to make future February issues all about DIY. You can be a contributor, too, so please bear that in mind. You're encouraged to send us ideas for DIY (and other) articles, too.

One important point to be made about DIY articles. Please take special care when working in your garage, paying special attention to all aspects of shop safety: Wear protective clothing and eyewear, keep the shop neat and organized, put oily rags into a closed metal container, ensure that your fire extinguishers are fully charged, etc.

Thanks go to all the contributors of this issue:

- Bob Hopkins sets your mind at ease when you discover a torn CV boot.
- Steve Vetter is a frequent dV contributor. He answered dV's call with two pieces: how to install a steering bushing and how to install a cool-air scoop for his track 944
- **Don Mattingley** shot a series of photos and took helpful notes on his 9-month ordeal of rebuilding the 3.6 liter engine of his 993.

- Engelbert Muelhaupt, not even a Potomac member (he belongs to Shenandoah Region), provided us with 18 photos with captions on installing a short shifter in a 915 transmission.
  - Who among us hasn't faced the infuriating bolt or screw that just won't budge? **Steve Bates** provides a valuable look at how to remove stuck fasteners.
  - Eddy Davis got tired of relying on a borrowed pressure brake bleeder and just built his own for about \$15.
  - ASG's **Geoff Schwarz** was a willing proofreader on the shop-safety article. He added several valuable pointers from a professional's point of view.

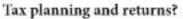
In the realm of non-DIY contributions are:

• Is it any surprise that Potomac members are already planning their return trip to the Circuit of the Americas in Austin,

Texas in 2013? Sally and Alan Herod gladly volunteered to provide an account of their 2012 experience.

• Sydney Butler certainly seems to enjoy covering some of the world's major automobile shows. He attended the 2012 Los Angeles event where the new Cayman was introduced. He came away suitably impressed.

On Page 8, you'll find a tentative calendar of Potomac events that will be updated often throughout the year. A cautionary note: You should make a point of double-checking dates, times, etc., on the Potomac website as we can update information there in a more timely fashion.



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## Thoughts on friendship in the New Year

Happy New Year, everyone! As always, New Year is a time for reflection and pause. As I sit here writing this, I can't help but think about the hard times our country has endured over the past years and that there are likely to be more in the coming years. But this also puts me in mind of the quiet strength

that we as Americans possess—strength comes to us and so many other Americans through the bonds of love and friendship we share with our friends, families and communities. I think just how lucky I am to have the friends I found in the Porsche Club.

I think of the PCA friends who over the years have been generous to others with their time and treasure (not to mention tools). The kindnesses are too many to remember, and the number of friendships too great to list here.

I think about how glad I am to belong to PCA Potomac; how the great people in our club and the great friendships I have made here turn the task of being president from a chore into a joy. If you have been active in our club, you know what I mean. If you haven't, please come out and see.

Let me take a moment to thank some of these friends, members who have stepped up, shouldered responsibility and helped Potomac put on almost 90 events a year.

Thanks to Gary Baker, our new autocross chair, with Tony Pagonis (and defacto Co-Chair Cindy Pagonis) taking a well-deserved rest after many years as chair. Thanks also to Bruce Dobbs for joining Alan Herod as DE co-chair; Dan Dazzo for joining Bob Mulligan as co-chief instructor; John Sullivan for stepping up as safety chair and director of driver development; Roger McLeod as DE cashier (and Skip Close for doing it all these years); and to

**Brian Walsh** for taking on track coordinator from **Tuffy von Briesen**. Former Co-Chief Instructor **Dirk Dekker** will be returning to civilian life, but he is still happy to receive gifts from students looking to be promoted, and thanks from all those he has taught over the years.

In other programs, **Fred Pfeiffer** will become sole Club Race chair after being a co-chair with **Starla Phelps**. Thanks to Starla for making Potomac's Club Race the best around. **Mia Walsh** will be joining **John Magistro** in membership, and **Annabelle Alvi** joins **Michaela Shoop** in social

Thanks to the *dV* team of **Tony Kelly**, **Richard Curtis**, **Michael Madrid** and others; to Drive 'n Dine Co-Chairs **Claude Imbt** and **Andrew Fort**; Rally Co-Chairs **Craig and Linda Davidson**; Concours Chair **Ron Davis**; and DE Tech Co-Chairs **Dave Reilly** and **Dave DiQuollo**.

Finally, I would like to welcome some new faces into the executive committee. **Howard Hill** joins us as vice president and president-elect; **David Dean** as treasurer;

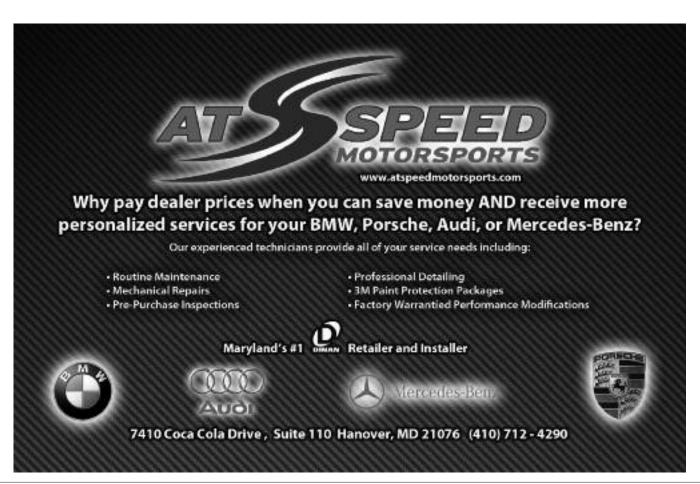
and **Michael Handelman** as secretary. **Dick Seltzer** will stay on as past president. I can't think of a better group of people to steward our club.

Retiring from the executive committe are Past President **Tuffy von Briesen**, Treasurer **Evan Close** and Secretary **Gary Brindle**. Having had the pleasure of serving with them as vice president, words cannot express the depth of contribution these men have made to the club. Please thank them the next time you see them.

I can't thank all these people enough; they are the best part of being president. These people are making a difference. Won't you, too?



John Eberhardt



#### Founders' Region officers

President: John Eberhardt president@pcapotomac.org Vice president: Howard Hill vicepresident@pcaptomac.org Secretary: Michael Handelman secretary@pcapotomac.org Treasurer: David Dean treasurer@pcapotomac.org Past president: Dick Seltzer pastpresident@pcapotomac.org

#### **Drivers' Education**

Drivers' Ed: Alan Herod dechair@pcapotomac.org Registrar: Sally Herod deregistrar@pcapotomac.org Cashier: Roger McLeod decashier@pcapotomac.org Track coordinator: Brian Walsh trackrentals@pcapotomac.org Chief instructors: Bob Mulligan (703) 709-8400, Dan Dazzo 410-819-6789 chiefinstructor@pcapotomac.org Tech chairs: David Riley, Dave Diquollo tech@pcapotomac.org

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John Eberhardt



**Howard Hill** 





Michael Handleman



David Dean



Dick Seltzer

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Safety: John Sullivan safety@ pcapotomac.org 410-608-3440 Social, meetings: Annabelle Alvi, Michaela Shoop social@pcapotomac.org

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930: Roger Bratter 930@pcapotomac.org

964: C2 & C4: Roger Bratter 930@pcapotomac.org

986 (Boxster): John Eberhardt boxster@pcapotomac.org 914 & 914/6: Ray Plewacki 914@pcapotomac.org

944 & 968: Charlie Murphy intsptperf@aol.com

924: John Brown 924@pcapotomac.org

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## Potomac's 2013 calendar

The information below is accurate as of date of publication. However, circumstances may change through the year. You're advised to check Potomac's website — www.pcapotomac.org > Cal-

endar > Potomac Calendar and/or www.pcapotomac.org > Programs for further information and the most up-to-date information. This calendar in *der Vorgänger* will be updated each month through

2013. Details on the monthly brunches and event contacts are listed below. A listing of Program Chairs is below.

#### **February**

- 2: Centreville, Va. brunch. 9: Arlington, Va. brunch.
- 16: Glen Echo, Md.
- 9: Awards Dinner. The Tower Club, McLean.
- 16: DE instructor refresher class. PJ. Skiddoes, Fairfax, Va., 10-5.

#### March

- 2: Centreville, Va. brunch.
- 9: Arlington, Va. brunch.
- 15–19 Zone 2 DE, Virginia International Raceway, Alton, Va.
- 16: Glen Echo, Md. brunch.
- 16: Autocross school, Bowie (Md.) Baysox Stadium.
- 17: Autocross No. 1, Bowie (Md.) Baysox Stadium.
- 23: High Performance Driving Clinic, Jefferson Course, Summit Point (W.Va.) Raceway. (See related story, Page 21.)
- 30: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 30: Open board meeting. Location TBA.

#### April

- 5: Instructor track training day, Summit Point (W.Va.)
  Raceway.
  - 6: Centreville, Va. brunch.
- 6–7: DE, Summit Point (W.Va.) Raceway. Main course.
  - 13: Arlington, Va. brunch.
- 13: Autocross No. 2, Bowie (Md.) Baysox Stadium.
- 20: Drive 'n Dine, the Tank Farm, Manassas, Va.
  - 20: Glen Echo, Md.

#### brunch.

27: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*

#### May

- 4: Centreville, Va. brunch.
- 5: Deutsch Marque Concours, Nottaway Park, Vienna, Va. 10–3 p.m.
- 10–12: DE, Mid-Ohio Sports Car Course, Lexington, Ohio.
  - 11: Arlington, Va. brunch. 18: Glen Echo, Md.
- brunch.
- 18: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 19: Drive 'n Dine, Spring brunch.
- 23: Autocross No. 3, Bowie (Md.) Baysox Stadium.

#### Iune

- 1: Centreville, Va. brunch.
- 1–2: DE, Summit Point (W.Va.) Raceway. Shenandoah Course.
- 8: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 8: Open board meeting. Location TBA.
  - 8: Arlington, Va. brunch.
- 15: Glen Echo, Md. brunch.
- 14–16: Drive 'n Dine, overnight trip to Fallingwater, Pennsylvania.
- 21–23: DE, Summit Point (W.Va.) Raceway. Main course.

#### July

6: Centreville, Va. brunch.4: Drive 'n Dine, Wine &

#### Pie.

- 7: Autocross No. 4, Bowie (Md.) Baysox Stadium.
- 13: Arlington, Va. brunch. 20: Glen Echo, Md. brunch
- 13: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 19–21: DE, Summit Point (W.Va.) Raceway. Main course.

#### August

- 3: Centreville, Va. brunch.
- 3: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 9–11: PorscheFest, DE + Autocross No. 5 on July 10 + Rally, Summit Point (WVa.) Raceway.
  - 10: Arlington, Va. brunch. 17: Glen Echo, Md.
- brunch. 17: Driver Education tech
- inspection day. 9 a.m.–2 p.m. Location TBA.\* 24: Drive 'n Dine drive-in
- movie, Stephens City, Va.
- 30-Sept. 1:DE, Virginia International Raceway, Alton, Va.

#### September

- Aug. 30–Sept. 1:DE, Virginia International Raceway, Alton, Va.
- 6–8: Drive 'n Dine, The Homestead, Va.
- 7: Concours, Gathering of the Faithful, Reston Town Center. Va.
  - 7: Centreville, Va. brunch.
- 14: Fall High Performance Driving Clinic, Summit Point (W.Va.) Raceway, Jefferson Circuit. See related story, Page 21.

#### is the site, 12599 Fair Lakes Circle, Fairfax, Va., just off Interstate 66 at exit 55B. Don't look for many cars if the weather is inclement.

Sundays, 7:30–10 a.m., "Church of the Holy Donut," Dunkin' Donuts, corner of Routes 29 & 198, Burtonsville, Md.

#### 14: Arlington, Va. brunch.

- 21: Glen Echo brunch.
- 21: Club picnic, open
- board meeting. Location TBA. 28: Octoberfest,
- Lovettsville, Va. Drive "n Dine, concours, rally.
- 27–29: PCA Club Race, Summit Point (W.Va.) Raceway.
- 28: Wings & Wheels, Leesburg (Va.) Airport.

#### October

- 5: Centreville, Va. brunch.
- 5: Drive 'n Dine, Mountain vinery.
- 6: Autocross No. 6, Bowie (Md.) Baysox Stadium.
  - 12: Arlington, Va. brunch.
  - 19: Glen Echo brunch.
- 12–13: N.C. Museum of Art, Raleigh, N.C. Special historic Porsche exhibit.
- 19: Driver Education tech inspection day. 9 a.m.–2 p.m. Location TBA.\*
- 19: Drive 'n Dine Fall Foliage trip
  - 19: Gold Cup.
- 25: Volunteer Appreciation Day. Summit Point (W.Va.) Raceway. Main course.
- 26–27: DE, Summit Point (W.Va.) Raceway. Main course.

#### November

2: Centreville, Va. brunch.

- 3: Autocross No. 7, Bowie (Md.) Baysox Stadium.
- 9: Arlington, Va. brunch. 16: Glen Echo brunch.

#### December

- 7: Centreville, Va. brunch.
- 7: Annual officer election + open board meeting. 11 a.m.-1 p.m. Location TBA.
- 7: Holiday party, Clyde's, Bethesda, Md. 6 p.m.
  - 14: Arlington, Va. brunch.
  - 21: Glen Echo brunch.

### \*Tech inspection days open to all members

DE tech inspections are designed to accommodate DE participates and is provided at no expense. DE participants' cars in the Green, Blue and White groups must have a tech inspection by an approved inspector prior to every event.

However, DE tech days are also available to non-DE participants on a first-come, first-served basis. You car will be put on a lift and inspectors will look over your car, inspect the brakes, steeing and other suspension components. it's an excellent opportunity to inspect a part of your car you don't normally see.

#### Potomac monthly brunch locations

Potomac breakfasts and/or brunches are an excellent way to (a) have a meal; and (b) make new Porsche friends or renew friendships with old friends. Meetings are lowkey with no agenda.

Virginia: first Saturday of each month, City Grille, 10701 Balls Ford Road, Manassas, Va. 20109.

Virginia: second Saturday of each month, 10–Noon. Thirsty Bernie Sports Bar & Grill, 2163 N. Glebe Road, Arlington, Va. 22207.

The Maryland breakfast is the third Saturday each month from 11 a.m. to 1 p.m. at the Irish Inn, 6119 Tulane Ave., Glen Echo, Md.

For more information, contact John Magistro or Mia Walsh at membership@pcapotomac.org

#### Program chairs

Autocross: Tony Pagonis, autocross@pcapotomac.org Club Race: Starla Phelps, Fred Pfieffer, clubrace@pcapotomac.org Concours: Ron Davis.

concours@pcapotomac.org

Drive 'n Dine: Andrew Fort or

Claude Imbt,

driveanddine@pcapotomac.org

Driver Education: Alan Herod or

Bruce Dobbs, dechair@pcapotomac.org

DE Tech: Dave Diquollo or Dave Riley tech@pcapotomac.org Rally: Linda and Craig Davidson, rally@pcapotomac.org

#### Cars 'n coffee gatherings

#### Hunt Valley, Md.

Saturdays, 7:30-9:30 a.m., Hunt Valley Towne Centre, 118 Shawan Road, Hunt Valley, Md. Many, many cars of all types.

#### Great Falls, Va.

Saturdays, 7–9 a.m., Katie's Cars & Coffee in Great Falls, Va., 760 Walker Road, Great Falls, Va. This is perhaps the premier gathering of interesting cars in the D.C. area, but be there early, like 7 a.m. If you're much later than that, parking can be difficult. Literally dozens and dozens of interesting cars. The coffee and food at Katie's are also tasty. Don't look for many cars if the weather is inclement.

#### Fair Lakes, Va.

Sundays, roughly 8:30– 10:30 a.m., Fair Lakes (Va.) Starbucks for coffee and cars Burtonsville, Md.
Sundays, 7:30–10 a.m.,
"Church of the Holy

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#### New Potomac members & anniversaries

### December 2012 anniversaries

#### 40 years

Lionel C. Allard & Karen N. Allard Richard W. Douglas & Eileen Douglas

#### 35 years

Juergen Hauber &
Patricia Anne Hauber
Albert W. Northrop &
Karen A. Northrop
Norman M. Wood &
Carolyn S. Zollar

#### 30 years

Ralph Skeel & Travis Skeel

#### 20 years

Jack Mills & Shann Mills

#### 15 years

Werner E. Minshall & Joan M. Minshall

#### 10 years

William C. Miller &

Sharon Miller

#### 5years

David P. Ahearn & Nancy Ahearn Joe Baehr Benjamin Caballero & Mierta Capaul Roger L. Downey & Diane Downey David E. Eiler & Ksenija Eiler Michael A. Fleisher & Trudy Fleisher Edward H. Gaulrapp & Joan Gaulrapp Steve Mitchell & Ann Mitchell Vincent M. Paladini & Amy Paladini Peter D. Rich & Linda Dallas Rich Michael T. Roth I. Edward Slonaker & Jay Slonaker Joseph S. Yoon

November 2012 new members

Dan Bordoni Vince Briggs Matt Briney J.R. Brown & Lorie Brown Brian M. Bush & Jennifer Matthews David A. Conrath & Deena Stone Burke Daidy Bill Dooley & Cheryl Dooley David Fox (dual member) Devarda C. Jones & **Iethrow Iones** Tom Klimek & Candace Klimek Bart Komorowski Susan Lent-Cohen Melissa A. Mann & Chris Mann Ryan E. McMichael & Hope McMichael James Mitchell

Bill Phillips &

Stefan Rosu

Steve Silverman

Nancy Phillips

Robert Greaux

Cheryl Prejean Greaux &

Greg Simpson &
Chesley Simpson
Kevin W. Stringer
Florence M. Tiar &
Michael Haidak
Karim Wassef
John G. Wehrle
Ed Wright & Diane Wright
Jimi Yui

## February 2013 anniversaries

#### 30 years

Michael J. Maurer & Teri Lee Maurer Anthony C. Rounds & Antoinette Ingram George W. Solhan & Christyna Solhan

#### 25 years

Michael A. Anikeeff & Greg Anikeeff Robert L. Gaddy & Evelyn P. Gaddy

#### 20 years

John Brown &
Holly Brown
Michael Fanshel &
Debra Fanshel
Edward Yourkovich &
Cheryl C. Yourkovich

#### 15 years

Edmund Coe Richard Fontenrose & Martha Fontenrose Ray Kwong & Rebecca Kwong

#### 10 years

Nader Fotouhi & Carolyn Hill-Fotouhi Timothy J.Garrett & Rheema T. Garrett James S. Pew John S. Punzi & Leslie Punze Bryan Vandrovec & Eugene Vandrovec

## Linda J. Armbrust Derek P. Benke & Corinna Benke Jay A. Friend & Mike Nelson Richard A. MacInnes &

Charles W. Armbrust &

5 years

Patsy MacInnes
Colin B. Matthews &
Ian Matthews
Jeff McManus
Brian K. Pawsat &

Karen S. Pawsat

Marc Sumerlin & Derick Sumerlin

Michael R. Summers & Steven Summers

Iudith H. Welch

### January 2013 new members

Simon Beauchamp Jeff Bischoff & Diane Bischoff Ken Bromberg Rusty Chapman &

Andrew Chapman Rob Evers & Sarah Evers

Bart Flannery Donald G. Gavin

Trey Harper & Jennifer Wagoner

Keith A. Hathaway Ara Janjikian & Jessica Janjikian

Yann LeGuellec

Patrick Lincoln Mitchell S. Marder &

Sandra Marder

Jason Mason

Emmit McHenry David Moore &

Ryan Moore Peggy Pariso &

Grace Pariso Jeffrey A. Rothstein

Randy Turner

Jason Zeleznik &

Rick Zeleznik John R. Ziegelbauer &

Kim Ziegelbauer

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The new-for-2013 Porsche Cayman debuted in the U.S. at the annual Los Angeles Auto Show in November.

## New Cayman offers high performance in elegant package

Photo and story by Sydney Butler for *der Vorgänger* 

Los Angeles Auto Show, Nov. 29, 2012. As I waited for the start of Porsche's press conference announcing the 2013 Cayman, I reflected on the 2005 press event in Frankfurt when the original Cayman was introduced. Porsche's Wendell Wiedeking had done his best to present the new model, but his remarks were overshadowed by

questions about Porsche's relevance as a sports car manufacturer in an environmentally concerned market, as well as about rumors that Porsche was planning a secret takeover of Volkswagen.

Much had changed since that event. Wiedeking was ousted as chief executive, Porsche's takeover bid of VW failed and Porsche became a leader in hybrid high-performance technol-

ogy. When Porsche's current CEO Matthias Muller drove a Speed Yellow Cayman S onto the press conference stage in Los Angeles, I was startled by how much the Cayman had changed since that 2005 introduction.

A splendid change it was.. It's lower stance,

longer wheelbase, beautifully flowing roofline, redesigned rear, refined interior appointments and larger rims collectively gave the car a more integrated, more elegant or mature look. The Boxsterinspired vented side panels and taillight treatments folded naturally and attractively into the overall sculpted design.

This is no hard-top Boxster coupe but a distinctive and complete design of its own—projecting both performance and elegance.

(Porsche emphasized this performance/elegance theme by showing a car in vivid Speed Yellow alongside one in subtle Agate Grey).

Michael Mauer—Porsche's chief designer for the Cayman, Boxster, 991 and Cayenne—was pleased with my impressions: "We wanted to make the new Cayman a more 'mature car' if you will, while also emphasizing the strong performance attributes of this dynamic new model," he said.

I remarked that I had also clearly gotten a "911 impression" from the car, and he had this fascinating comment: "Many people have said over the years that the 911 has reached its apex as a viable design. To them I would say not only look at the performance of the new 991 but at how the 911

design lives on in every model we produce, be it a Cayman, Boxster, Panamera or Cayenne. The 911, like a cat, has many lives!"

After our conversation, I lingered in front of the stunning 904 GTS also on display at the Porsche stand. It was remarkable how its unique design cues—the extended headlights, the graceful front fenders rising alongside the hood, the flowing roof line toward the rear section—had been brought forward into the 991 and the Cayman. A classic design, true to the marque and worth carrying into the future.

Let's not give the impression that the new Cayman is merely a beautiful design. This is one high-performance machine. A PDK-equipped Cayman S achieves 60 mph in 4.4 seconds with a top speed of 174 mph. Its track is 2.4 inches longer that the previous model, its torsional stiffness has increased 40 percent and it weighs 66 pounds less, all making for improved track capability.

Porsche has once again produced a knockout product. This second generation Cayman has grown up in styling, appeal and performance. It has its own unique design, and is an exciting and distinctive member of Porsche's family of fine sports cars. The new Cayman goes on sale in the U.S. this spring.

*Sydney Butler is a frequent contributor to dV.* 



**Sydney Butler** 

## Tips to keep your home DIY workplace safe

By Richard Curtis for der Vorgänger

As a veteran of DIY stuff over nearly 50 years, I can tell you unequivocally that you first must work safely in your home garage. Nothing ruins your day more than having to explain to your significant other why you're bleeding, or why the car fell off the jack or how the garage just happened to burn down.

Therefore, here are some basic safety rules gleaned both from personal experience, various real mechanics who do this for a living and some Internet research.

- First and foremost, just use common sense. For example, if that four-foot breaker bar on the end of your ½-inch ratchet won't break the nut loose, stop and reconsider what you're doing and what might be more appropriate steps.
- Do not start the car in the garage unless it is in park/neutral, brake on, clutch pushed in. Block the tires and set the emergency brake if working on a running engine.
- Pump the brake pedal several times before moving the car in or out of the shop. This is especially true after working on the brakes.
- Don't run the engine with the garage door closed. Do you even have to be reminded of this?
- Use safety jack stands under cars, do not trust jacks to secure the car by themselves. My friend and I were changing a tire on his Corvette once and relying on just a jack to hold the car. The jack failed; the car fell, landing on the jack, breaking the front carbon-fiber fender. Replacing the fender cost the insurance company \$2,600. The only good news was that neither of us was under the car.
- Have at least one fire extinguisher on hand. Check it the first of every month to ensure it's still charged. If the little needle on the gauge isn't in the green, the extinguisher is worthless. Get it recharged or buy a new one.
  - Don't wear loose clothing.
- Clean up spilled water, oil, grease or solvent immediately. Engine coolant is particularly slippery.
- Dispose of oily rags in a metal can with a lid. Oily rags have been known to combust spontaneously. Keep the container away from anything that might produce sparks, such as a grinder or welder.
- Use safety glasses or face shields when operating power tools or working with chemicals. Rubber gloves to wear

around chemicals are a good thing.

- Only use impact sockets with impact wrenches. Do not use chrome sockets.
- If you use power tools (they're great!) and/or pressurized air hoses for air tools (similarly, they're great too!), keep your work area organized with unused hoses and extension cords put away. Otherwise, these are just waiting to trip someone and cause an injury.
- For air hoses, if possible install reels on the ceiling. With a quick pull on a hose, the reel will lift the hose off the floor and out of the way. Installing a pull-down light from the ceiling is one of the smartest, most work-efficient things I've done in my garage.
- Whenever cutting, grinding or using any power tools, wear leather gloves, long sleeves (even in summer) and safety glasses or a face shield. Don't do any grinding, welding or use any spark-producing power tools around gasoline or any other flammable material.
- Wear protection—safety glasses, for example, or a leather apron when welding—when cutting, welding or grinding.
- Never wear shorts or open-toe shoes in the shop. Just ask me why that's important.
  - Don't wear jewelry or wrist watches in the shop.

#### Keep the workplace organized

Organization is a must. Tools and car parts strewn around the shop floor is an accident waiting to happen. A neat shop will also be easier to work in and more pleasing for your friends when they drop by to drink your beer, eat your donuts and critically supervise your work.

• Keep your tools organized ... screwdrivers in one drawer, pliers in another, sockets in still another. Porsche specialist

Taylor Chapman described how he keeps his large assortment of tools organized in a shop where two other mechanics might be "borrowing" one occasionally. "I ask that they always return them to this one specific place" on his workbench, he said. "I will then put them back exactly where they belong." That way, he says, his tools are never misplaced.



Photos by Richard Curtis

Above: Porsche specialist Taylor Chapman keeps his personal toolbox organized. If another mechanic "borrows" a tool, it is returned to a specific place, and then Chapman places the tool back into his toolbox.

Below: Note the jack stands beneath this 911 track car being serviced at Summit Point (W.Va.) Raceway.

#### DIY

Working on your car should be approached with all due caution and with safety foremost in mind.

Share your own do-ityourself stories with dV readers by sending an email to dveditor @pcapotomac.org. A high-resolution photo will be necessary also.





File photos by Richard Curtis Left: Checking CV boots can produce a scene like this; the boot is torn almost completely around its circumference. Luckily, the CV joint wasn't ru-

## Torn CV boots? Yes, you can do this repair yourself

Right: A CV boot repair kit includes a new flange, boot, circlip, clamps and grease. By Bob Hopkins for der Vorgänger

A common issue found on 911s are torn and leaking Constant Velocity Joint boots, called CV boots for short. The rubber boots are intended to contain the grease that is essential for the operation of the joint. If the grease leaks out through a tear, the CV joint will be ruined; the repair gets very expensive.

Replacing the rubber boots is far less expensive than replacing the entire axle, so it's advised to inspect the boots regularly and replace them at the first sign of a split boot. The job is not too complicated, but it can be a bit messy so I suggest selecting your clothing and gloves with the realization that the clothes will get greasy. A two-wheel drive Porsche has four CV boots, an inner and an outer on both rear axles.

Remove the axle from the car. Begin by removing the stub axle nut. Because this nut should be torqued to over 200 ft./lbs., it is easiest to perform this task with the wheel on the car and the car on the ground but the hub cap removed.

To gain access to the other side of the axle bolted to the output flange of the transaxle, securely lift the vehicle, and you should use jack stands to secure the vehicle.

The bolts could be "triple square" or female hex heads. The bolts are "one-time use" so replace them with new M10 bolts during installation. A wooden 2x4 wedged between the wheel studs and the floor can secure the axle while loosening the bolts. Before the unbolted axle can be removed from the car, it is necessary to unbolt the bottom of the rear shocks. This allows the outboard joint and stub axle to slide out from the hub.

Once the half shaft is removed from the vehicle, proceed to disassemble the inner CV joint. There is a friction fit cap



on the inboard side of the axle. This can be easily removed with a pry bar and small hammer. Gently tap the cap to reveal a circlip that secures the joint to the axle shaft. Before removing the circlip using circlip pliers, note the orientation of the race, cage and steel balls taking special note of how the grooves in the race line up with the holes on the cage. Remove the joint, remove the rubber boot and clean all the grease. Once the inboard joint is re-

moved and cleaned, you can remove the rubber boot from the outer joint.

My 1986 911 does not allow complete disassembly of the outer joint so I simply remove as much grease as possible before installing the new boot. Replacement boots should come with blister packs of grease and new clamps. Squeeze as much grease into the assembled joints as possible before reinstalling the rubber boots and securing with new clamps.

Once the outboard boots are replaced, reassemble the inboard joints. Assembly of the balls into the races and cages requires no force but articulating the joint helps to ease the insertion of the balls. Verify that the joint flexes and articulates properly before installing the new rubber boot, injecting new grease and securing the boot with clamps. Install a new circlip and tap on the joint end cap.

Install the rebuilt half shaft into the car by inserting the stub axle into the hub. Rotating the axle back and forth allows the grooved axle to line up with the hub grooves. Install new M10 bolts at the output flange and tighten to specified torque. Replace the lower shock bolt and torque to specification. Lower the car to the ground and use a new nut on the stub axle and tighten to its high torque specification.

Finally, be sure you have your Porsche crest pointing towards the air valve before tapping it into your Fuchs wheels.

#### DIY

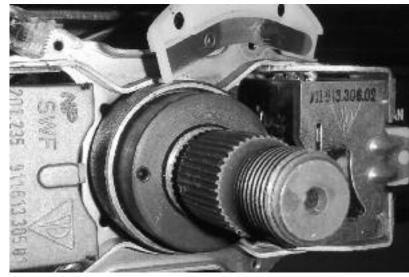
Working on your car should be approached with all due caution and with safety foremost in mind.

Share your own do-ityourself stories with dV readers by sending an email to dveditor @pcapotomac.org. A high-resolution photo will be necessary also.









## How to replace a steering column bushing

Photos and story by Steve Vetter for der Vorgänger

Older 911s are prone to having the steering bushing collapse after many years. The steering bushing is a hard plastic that essentially crumbles into small bits. I found that this issue happened to my car several years ago after an autocross. You'll know when it happens as the steering wheel will have a significant amount of vertical play.

When the issue happened to my car in 2005, there were two options: replace the bushing by completely disassembling the steering shaft, or install a 928 part (928 347 739 02) as a quick fix. (Heresy, right?)

Produced by enthusiast Mitch Leland of the Pelican Parts forums, a third option has emerged. While the 928 part is a metal sleeve, the Leland Bushing (Pelican Part #: PEL-ML-STR) is a hard plastic, self-lubricating bushing that is supposed to eliminate some additional play that the 928 part cannot solve.

Some owners have wrapped foil tape around the 928 sleeve to bulk it up a bit. I never ended up doing this, and while the minor amount of play bothered me, it was not enough to take it apart again until I found out about the Leland bushing.

For either part, the procedure is essentially the same:

- Remove steering wheel. (If you have an impact gun, it's easier than using a breaker bar and holding the steering wheel.) As you slide the wheel off the shaft, scribe a mark in the wheel/shaft or else you might end up off a spline upon reinstallation.
  - Remove circlip.
- Remove whatever is left of the white factory bushing with a pick and a vacuum.
- If installing the 928 sleeve, simply insert it pushing any remains down the steering shaft.
- If installing the Leland Bushing, also remove the "star" washer.
- Tap the Leland Bushing in with a block of wood or other suitable drift.
- Replace circlip, steering wheel and torque nut to 36 ft./lbs.

There is a long running thread on the Pelican Parts forum with good photos and lots of discussion as to whether the 928 part is removable once installed. Most people (including me) have been able to remove it. If you didn't like these instructions, Leland has downloadable instructions in the catalog section.

Once completed, I observed a little remaining play, but it was probably half what it had been before installing the new part. I can live with it.

Top left: Showing all the parts: (A) 928 sleeve installed position; (B) Circlip; (C) Star washer.

Top right: Leland bushing, left; 928 sleeve, right.

Above left: A better view of the star washer; note that the plastic did not have to be removed.

Above right: The Leland bushing installed.

## Build, install your own scoop to stay cool

Photos and story by Steve Vetter for *der Vorgänger* 

Even on the hottest days at the track, the driver needs a little extra cooling. This past summer, I had the opportunity to ride with Jim Bynum in his 944 with the solution I'm presenting here: cooling scoops! All credit to Jim for the idea.

The NACA duct can be found on everything from NASCAR stock cars to a Ferrari F40. The scoops allow air to flow in with little disturbance to the flow around the car.

This "one-beer" project can be completed in about 30 minutes. The part you need is SPA-D102 Small Black NACA Duct from Racer Parts Wholesale and some zip ties.

- Make a cardboard template cardboard of the window.
- Transfer the template markings to the duct. Note: you will cut off most of the rectangular part and some of the leading edge of the indented portion.
  - Cut out with a Dremel or other saw.
- Place in the window and select some suitable places to drill holes (see photo at right).
  - Attach zip ties to avoid it falling out when on the track.
  - Remove the scoop before you roll up the window.

Even at slow speeds around the neighborhood, I noticed significant airflow into the car. This might be a good thing to have on the road since the air conditioner broke.





Left: Seven-year-old Zander Vetter poses for a photo for his dad who used the Dremel tool to cut away excess plastic surrounding the NACAduct scoop. Always wear eye protection when using power tools.

Below: The NACA duct after fitting to the 944 driver's door with plastic zip ties.

#### DIY

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Photo by John Vrankovich

Potomac member and DE enthusiast Don Mattingley works at disassembling the 3.6 liter engine from his 993. This was his first engine rebuild project, and he did most of the work himself with the help of a few friends.

## How to rebuild your 911 engine. Yourself.

By Don Mattingley for der Vorgänger

This is an illustrated guide to rebuilding a Porsche 911 engine. Please follow the steps carefully, and remember to follow all safety precautions and protocols when working under a car that is supported by jack stands.

Under no circumstances should you sit in the car while it is on the jack stands and make "vroom vroom" noises while turning the wheel frantically left and right. You might be saying to yourself "that's ridiculous, who would do that?" The answer is you will want to do that after your car has been on jack stands for six months while you've been driving a 2002 Ford Focus wagon.

Also remember to put the clutch plate on the correct way before installing the transmission, because on a 993 it is opposite from the picture in Wayne Dempsey's book "How to Rebuild a 911 Engine."

Please do not worry if the car doesn't start when you attempt to fire it up for the first time, it's probably just a loose connection somewhere on the starter. However, do worry a little if the engine won't shut off (true story).

You should absolutely seek advice from whomever and wherever you can. Get a copy of Dempsey's book, and by all means do 1,000 Rennlist searches on various topics if that makes you feel better. Be aware that it could make you feel worse, but I digress.

Above all, be patient. You will always be missing a part at a key moment. Things will always take a little bit longer than expected.

Now, on to the steps...

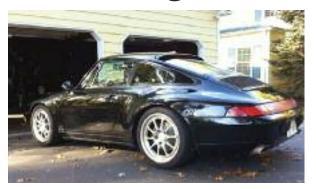


Photo by Don Mattingley Mattingley's 993 sits outside his garage before the engine is pulled for a rebuild. Mattingley bought several reference books to get him started.



**Step 1:** Start with a 911 with an engine burning/leaking/smoking an even larger amount of oil than is normal, i.e., in my case, a \$@#! load of oil.

**Step 2:** Put the 911 up on jack stands. Then raise it higher and higher on those stands until you spend many a waking hour visualizing it crashing to the ground because your cat sneezed nearby.

Step 3: Remove the engine, rolling it out from beneath

#### DIY

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the car on a homemade contraption made from random wood planks and a creeper. Or, better yet, buy an ATV jack and build an engine pallet.

**Step 4:** Invite several friends to your house, all of whom have little or no experience in rebuilding a 911 engine. Hand them some tools and tell them to start disassembling "whatever they can."

**Step 5:** Have John Vrankovich take a stupid picture of you (see photo above).

**Step 6:** Take the disassembled heads, pistons/cylinders, crankcase, crankshaft, cams and cam towers for inspection, cleaning and machine work by someone who actually knows what he's doing. In my case this was Taylor Chapman at Chapman Auto Werks, who had agreed in advance to work as my advisor.

**Step 7:** Begin reassembly with the help of the "experts" from Step 4.

Step 8: Admire your handiwork.

**Step 9:** Reinstall the engine. Break it in for 20 minutes, then clean the huge puddle of oil off your garage floor.

**Step 10:** Find and fix the leak (see the drips between the case and cylinder No. 2?), which includes removing the engine and tearing it halfway down. Again.

Step 11: Put engine back in the car. Again.

**Step 12:** Show up for your first DE in over a year and leave your engine lid open so everyone can see your cool powdercoated red fan.

Finally, thank all those who helped you through a huge project. For me those folks are: Andrew Roche, John Vrankovich, Richard Curtis, Steve Weiner, Mike Juzenas and Taylor Chapman and Andrew Goodnight of Chapman Auto Werks.











Photos by Don Mattingley

Far left: After you've jacked up the car and secured it on jack stands, disconnected all the wires, cables and various nuts and bolts, this is what the engine looks like removed from the car.

Left: You'll need to invite several friends over to admire your work, remove various components and drink all your coffee and eat all your donuts.

Photos by John Vrankovich

Far left: Pause several times so that your friends with cameras can record your bliss at what you've done.

Photos by Don Mattingley Left: With any luck, after reassembly, your engine will look something like this with all new, shiney

Left: After you've completed the first reassembley and started the engine to run it for 20 minutes, you'll need to pause while you clean up the oil puddle created by an oil leak you caused.

Left: Eventually, you'll get the engine reassembled correctly, with no leaks or smoke but with strong compression and a shiny red fan that you can show off at Porsche gatherings.

Photo by Richard Curtis

Left: Don't forget to thank all your friends, including Chapman Auto Werks technicians Andrew Goodnight, left, and Taylor Chapman.

## How to install a short shifter in a Porsche 915 transmission

Engelbert Muelhaupt, a PCA member from the Shenandoah Region who lives in Powhatan, Va., offers this DIY project of upgrading an original shifter

in a 915 transmission. Muelhaupt, originally from Germany, owns several Porsches, a '71 911, '82 SC, '86 944 and an '06 Boxster.



The necessary new parts, including the linkage with new bushings.



Careful when taking the top plate off, it may fly away. I just used a C-clamps to make it a bit safer.



With the top plate removed, the old springs will come out. Now loosen the nut and remove the set screw.



At the opposite side is a roll pin.



I just used a large screwdriver and a metric hammer to drive it back.



Now remove the shift rod and the piece that connects the whole thing.



Remove the clips from the pin that lifts up the spring plate for 5th and reverse gear. They are needed for the new kit.



Insert the new shift rod in the new lever bearing.



Insert the new pin, make sure the extended side is to the left.



Install the clip on the right side.



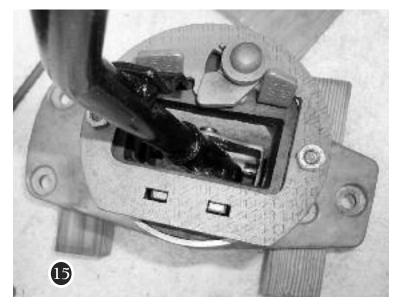
Insert the spring plate.



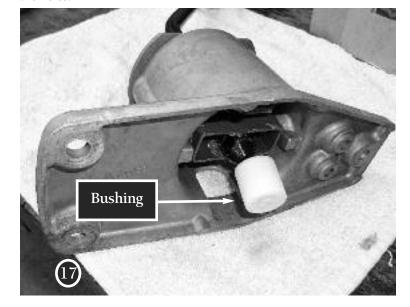
Install the shifter-lever assembly.



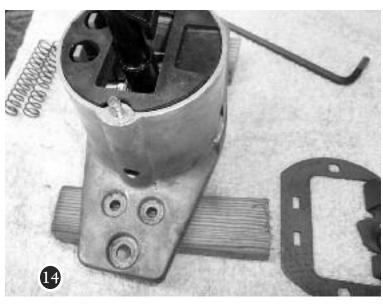
Next the set screw, just keep it loose. Drive the roll pin back in.



When installing the top plate, make sure the spring plate lines up with the holes.



Install a new bushing to the shift rod bottom.



Install the rubber piece and the springs that came with the short-shift kit.



Installing the nut for the set screw, I played around a little until I had the shifter moving nice fore and aft and left and right.



Here it is installed in the car



## Use heat, penetrants, tools to remove stuck nuts, bolts

Above: If you're having problems removing certain fasteners such as a Phillips screw, try applying a dab of valve-grinding compound to the screw-driver tip.

Top right: Always have a selection of penetrating liquids with which to lubricate stuck fasteners.

Above right: A Snap-On brand tool, the Shake and Break, used in conjunction with an air hammer, will often free a stuck fastener.

### Tool tip

Share tool tips or do-ityourself tips with dV readers by sending an email to dveditor@pcapotomac.org

High-resolution photos would be helpful also.

Photos and story by Steve Bates for *der Vorgänger* 

This article started out with a simple tip for dV's editor on an easier way to remove a couple of Phillips-head screws from a stubborn MAF housing.

I suggested using a bit of valve grinding compound on the tip of the screwdriver to give it some bite, a simple trick I watched my grandfather use many times. (See this described in detail on Page 23.)

One tip I learned decades ago was the appropriate use of heat to loosen stuck fasteners. We had a Massey Ferguson bulldozer that always seemed to need a frozen bolt removed. We had a nickname for the bulldozer that should not be repeated aloud except around the saltiest backyard mechanics.

The key to heat in the right amounts is that it expands the metals, increasing clearances and opening up cracks for penetrating oils to do their work. Repeated cycles of heating and cooling also seem to work well.

Sometimes even heat would not budge the occasional stubborn fastener. We would drill these out starting with a small bit in the center of the bolt and progressively working our way up to a drill bit just shy of the thread root.

An easy-out or a reverse twist drill bit would usually bring the coiled-spring-like material out of the hole. Believe it or not, an easy-out alone worked well on large bolts. However, I would not recommend them for most smaller bolts since they snap much too easily. I always use a thread chaser in lieu of a tap to clean up threads afterwards.

A tool I have used quite a bit is a Snap-On "Shake 'n Break." (See photo.) This little jewel allows you to provide impact blows of an air hammer and regulate the torque with a hand-held wrench. Start out with a few blows then slowly





apply torque to loosen the fasteners.

I found it to be handy to remove the stubborn Phillipshead screws from the rotors on my E46 BMW. The handheld impact would not even budge them even after multiple blows. A dab of valve grinding compound on the Phillips bit and the air hammer blows of the "Shake 'n Break" made the job easy.

Another method I use that at least deserves a mention is cutting a nice slot into a broken bolt. This may be necessary where heat can't be used or in close quarters where a drill is just too large. I use a diamond wheel on a Dremel to cut a nice slot into the remaining bolt and then use my Herbrand offset screwdrivers to finish off the removal. I am not sure what the Herbrands are made of, but they are pretty tough

A piece of an old rag soaked in penetrating oil like Kroil can also be a useful trick. I figured if it would work on my grandfather's Farmall it would work on my Porsche SC. I tore a strip of an old sheet and tied it around the oil cooler thermostat and soaked it with Kroil. I repeated this for a few days before trying to loosen the hard line. It worked like a charm and didn't destroy any threads.

My last tip is for removing stubborn oxygen sensors. Despite using penetrating oils, heat and a proper oxygen sensor removal socket, sockets sometimes will still round the flats and refuse to budge the sensor. This happened to me on my 996 a few years ago. I used my trusty 8" pipe wrench to remove the offending sensor with little trouble. The key to the pipe wrench is that it grips tighter the harder you pull.

The online community can provide a wealth of tips and tricks as well. Everyone out there has battled the occasional stuck fastener and they all have found ingenious ways to win the battle. Perhaps this knowledge is truly your best tool.

## HPDC: How to improve driving your Porsche

By Tuffy von Briesen for der Vorgänger

The Founder's Region Spring High Performance Driving Clinic is on Saturday, March 21. This is a great opportunity for you, your spouse or children at least 18 years old to learn car-control skills under an instructor's guidance.

High Performance Driving Clinics (HPDC) are instructional sessions tailored to members with no previous driving experience beyond the "normal" daily commute. An HPDC provides a safe, controlled environment to learn and practice advanced defensive driving techniques and car control. Drivers can practice car control on a skid pad. Many participants say the skid pad alone is worth the day.

The HPDC is designed to enhance members' driving knowledge so they feel safer in all driving situations. The HPDC improves driving skills and increases awareness of how the car handles in different situations. The HPDC provides the ideal start for those who may want to participate in Drivers' Education (DE) events but is open to any interested Potomac member.

There are no special requirements to participate in a HPDC except a valid unrestricted driver's license; you also must be at least 18 years of age and a PCA member or associate. You will need a car, but unlike other Porsche club events, HPDC allows any make or model automobile; trucks, SUVs or other unsuitable vehicles are prohibited. Porsche Cayenne's are permitted.

No special tires or brakes or other car modifications are suggested. Leam more about your car just as it sits. Simply make sure the existing tires and brakes and other mechanical equipment are in good condition. A tech inspection prior to the event is not required, but an inspection at the track in the morning of the event will be provided.

The day begins with an EARLY arrival (6:30 a.m.) at Summit Point (W.Va.) Raceway's Jefferson Circuit. Find an empty parking space in the Jefferson's paddock and unload all loose items. Bring some type of cover (a tarp), and place what you remove from your car on the cover for protection from the elements. Go to registration, pick up your schedule, nametag, car number and place a lunch order.

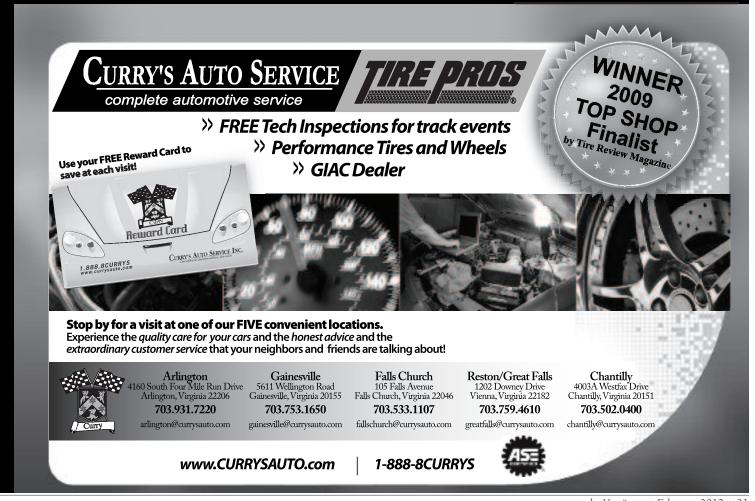
Drive your car to the tech inspection line; just follow the signs. After tech inspection, park again and go to the classroom for some coffee.

The HPDC proper begins with a classroom briefing. After the briefing, you will rotate between classroom, driving exercises and skid pad driving exercises. Closed-toe rubber-soled shoes are required for the morning portion of the HPDC. No helmet is required for the morning exercises.

The afternoon is devoted to lapping sessions where you can apply the skills you learned earlier in the day. This often is the most exciting and rewarding part of the event, but it is optional. The lapping sessions are similar to a Drivers' Education event and to participate you must have a helmet. Helmet rentals are not available at the track, but OG Racing in Sterling, Va. is one place to rent helmets. You must also dress in accordance with DE requirements: long pants and long sleeve shirts of natural fibers.

Potomac Region has scheduled two one-day HPDCs this year. You can register using the same online Internet system used for Drivers' Education. Preference is given to those who have NOT previously driven on a track or those novice drivers who have not had the opportunity to attend a HPDC.

For more information contact Alan Herod or Bruce Dobbs, DE co-chairs at dechair@pcapotomac.org or Roger McLeod, DE registrar at deregistrar@pcapotomac.org or visit the Founders' Region website at http://www.pcapotomac.org





## Garage tip

Share tech tips or do-it-yourself tips with dV readers by sending an email to dveditor @pcapotomac.org.

A high-resolution photo will be necessary also.

## How to build ramps to elevate the car

By Richard Curtis for der Vorgänger

These simple wooden ramps were made from scraps of treated wood, a scrap piece of carpet, some drywall screws (nails also would work) and drawer or door handles (optional).

• Cut a three or four foot length of 2x10 at a 45-degree

angle (see photo). A 2x8 would also work.

- Tack a scrap piece of carpet to the bottom of the longest piece. This will help prevent the finished ramp from slipping away from the car as you drive the car onto the ramp.
  - I used drywall screws to attach the two pieces.
- I added carrying handles at the balance point to make carrying the ramps a little easier.





## Before you give up on stubborn Phillips screw

By Richard Curtis for der Vorgänger

Any DIYer eventually will run across a Phillips screw that just won't budge. Just before you give up and throw the screwdriver across the garage, try this tip offered by Potomac's Steve Bates:

• Dip the screwdriver tip into valve grinding com-

pound. This compound is composed of a grease and a fine grit. This grit is enough to give the screwdriver tip a better purchase on the screw. You'll be surprised at how easy the screw comes out.

 $\bullet$  If this doesn't work, try some special words before giving up.

Valve grinding compound comes in a small container or squeeze tube and costs around \$6 at an auto-parts store.

Tech tip

Share tech tips or do-it-yourself tips with dV readers by sending an email to dveditor @pcapotomac.org. A high-resolution photo will be necessary also.



## How to bleed brakes

By David DiQuollo and Richard Curtis for *der Vorgänger* 

- Jack up the right rear; remove the tire.
- Using a turkey baster or similar such as a MityVac, suction out as much of the old brake fluid from the master cylinder reservoir as possible. Refill to the brim with your choice of new DOT 4 brake fluid.
- Be sure to clamp the reservoir overflow tube. This is a critical item that many initially overlook.
- At this point, you have a choice of which method to use to bleed the old fluid out of the

system: The one-person system utilizing a pressure bleeder or a suction bleeder, such as a MityVac unit pictured on this page. An alternative method is to use two people, one to pump the brake pedal while the second one actually bleeds the fluid. This article does not describe that method.

- Replace the reservoir cap with the pressure bleeder cap.
- If you are using a pressure bleeder, such as one of the popular Motive bleeders or even the one you build yourself (see next page), you have a choice of either the "dry" method or the "wet" method. If you choose "dry," you don't have to pour brake fluid into the pressure bottle, but you must keep a close eye on the fluid level in the master cylinder reservoir, ensuring that it never drops below about halfway. Using the dry method, you WILL need to add fluid to the reservoir a couple times during the process.
- An alternative—the "wet" method—is to pour about a quart of fresh brake fluid into the bottle. This method requires cleaning the bottle afterwards. Either method is okay, but with the dry method you need to keep a careful eye on the fluid level in the reservoir. Do not let the fluid level in the



File photo by Richard Curtis

Potomac's David Riley demonstrates using a MityVac to bleed brakes on his 964, holding the bottle above the level of the bleed nipple.

#### Bleeding tips

- Use fresh DOT 4 brake fluid.
- A pressurized bleeder (see article on next page) makes the job easier, but it can be done with a MityVac-type appliance (see photo above) or even with a second person to pump up the pressure in the system by using the brake pedal.
- Be careful not drop brake fluid on the car's paint. Paint and brake fluid are not compatible.
- Before moving the car, pump the brake pedal to ensure that everything works.
- Dispose of old brake fluid responsibly.

reservoir get below half full during bleeding. You want to avoid air entering the system, and since some if not all of Porsche and other manufacturers' reservoirs have dividers, the fluid level in one side could drop to a critical level if the bleed is fast, i.e., before the "extra" fluid in the adjacent side weeps through the divider wall.

- Attach a clear plastic tube and catch can to the bleeder nipple.
- Begin bleeding the brakes with the right rear brake caliper. Afterwards, in

sequence move to left rear, right front and finish with the left front.

- Pump up the pressure bleeder after bleeding each caliper. About 10-15 strokes will yield approximately 10 psi of pressure, which is sufficient to push out the old fluid.
- Pump up the bleed bottle after each caliper.
- Modern Porsche brake calipers have two bleed screws. Bleed the outer one first. Older Porsches with two-piston calipers have only one bleed screw per caliper.
- The old brake fluid will be darker than the new fluid. Once all the bubbles and old fluid have passed into the bleed bottle (you'll see the color change), tighten the bleed screw.
- Some DIYers alternate brake fluid by color, i.e., gold and blue, to make it easier to spot the fresh fluid, but professional mechanics tend to use only gold-colored fluid.
- Check fluid reservoir. Suction any excess to a little below the Full line, or if too low add to just below the Full line. If you are tracking the car, fill the reservoir to just below the Full line, about 1/8–3/16 inch. If street-only car, then go ahead and fill to the Full mark.

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DIY

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safety foremost in mind.

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be necessary also.

## How to build your own pressurized brake bleeder

By Richard Curtis and Eddy Davis for *der Vorgänger* 

Extension

One of the handiest tools in your garage for any Do-It-Yourselfer is a pressurized brake pressure bleeder. These are available on the Internet with prices starting around \$60, or you can build your own:

> Buy a one-gallon plastic tank sprayer for less than \$10 at your local hardware store. If you think you might need an extra-long hose, buy a length of clear plastic hose, 1/4-inch diameter.

> > You'll also need to buy a cap from motiveproducts.com to fit your Porsche master cylinder reservoir.

> > > • Assemble per the graphic at left.

 Optional: You can install a tire valve for using your air compressor to supply the necessary 10 pounds of pressure for bleeding.

• Quick-disconnect fittings are optional between the splice and the extension. These allow you to screw the master cylinder reservoir cap on and off easier. Otherwise, you have to rotate the entire bottle, which can be awkward.

• There are two ways to use the pressure bleeder. (1) You can pour a quart or so of brake fluid into the pressure bleeder; then you won't necessarily have to monitor the fluid level in the master cylinder reservoir during the bleeding process. (2) You can use the

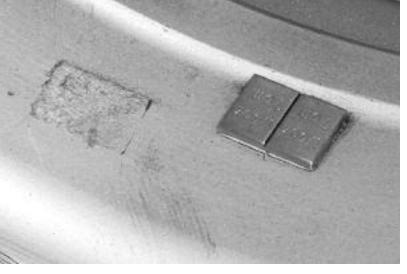
pressure bleeder dry; just maintain the fluid level in the reservoir by checking it often and refilling the reservoir as necessary. (See story on opposite page.

DIY

Working on your car should be approached with all due caution and with safety foremost in mind.

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Remove the wheel and thoroughly clean the area around the stick-on weight so that the aluminum foil tape will stick.



2 Cut off a piece of the tape sufficient to cover the stick-on weight. You can find the tape at any hardware store.

## Tech tip

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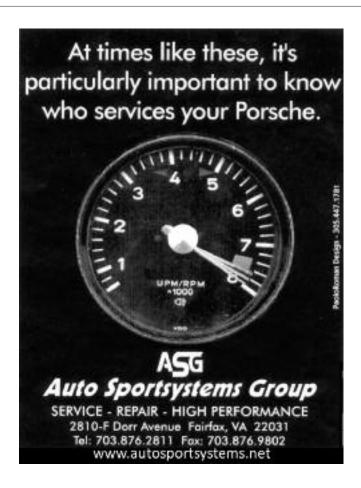
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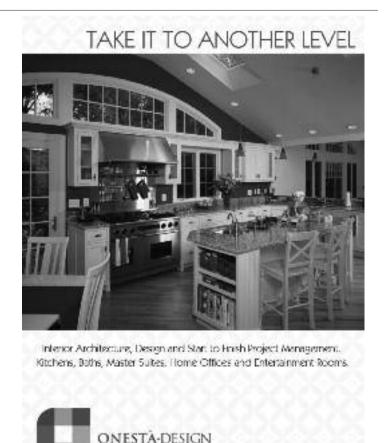
## How to tape wheel weights to keep them

Photos and story by Richard Curtis for *der Vorgänger* 

Porsche wheels are almost always balanced using stickon lead weights. But because of heat generated by brakes, road hazards and just plain lousy glue, those weights can detach. Losing a weight on the road is a minor inconvenience; getting your wheels rebalanced can be done at a variety of repair places. Losing one at the track, however, can ruin your weekend, especially if what you lose is a strip of those stick-on weights. Getting a tire rebalanced during a Drivers Education event can put an end to your expensive weekend.

For a purely street-driven car, this is not a common problem; in fact, I'd hazard a guess that it's rare. But for tracked





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Peel the paper backing from the sticky part of the tape. Allow enough tape to cover the entire stick-on weight.



Ensure that the tape has covered the entire weight. Use a plastic putty knife to press the tape firmly to the wheel.

## from falling off

cars where extensive and heavy use of the brakes is common, a wheel weight(s) can easily fall off.

Here's a cheap and easy fix for that potential problem.

• At a local hardware story, buy a roll of "aluminum foil tape" that is commonly used "for sealing the joints and seams of foil-jacket insulation." This will cost about \$8 for a 150-foot roll, but the roll will last you forever, literally.

- Remove the wheels and clean the area around the stickon weights. Brake cleaner will effectively remove all the brake/dirt scum around the weight(s).
- Cut off a piece of the tape large enough to cover the stick-on weight(s) and apply.

Sweet dreams!





Photo by Betsy Zaffarano

Posing for a group photo during a lull in the action at the Circuit of the Americas, are Potomac's DE Chair Alan Herod, DE Registrar Sally Herod, Past President Tuffy von Briesen, Sheri von Briesen and PCA Zone 2 Representative Tom Zaffarano. Missing from photograph, Betsy Zaffarano.

## My favorite birthday present: a trip to U.S. Formula One race

By Sally and Alan Herod for *der Vorgänger* 

While my husband Alan has been following Formula One for many years, I didn't begin watching until several years ago, just as Michael Schumacher was about to retire...for the first time. I have been hooked ever since.

For my birthday in September 2011, Alan presented me with the best birthday gift that I never expected: A trip to Austin, Texas in 2012 to attend the Formula One U.S. Grand Prix at Austin's brand new Circuit of the Americas (COTA).

On the Friday morning of the November race weekend, we left early to make it to the track in time for first practice. Not a problem, since the city of Austin and the police department had risen to the occasion. Thanks to the impressive traffic control, traffic was not an issue. The highways feeding into the facility even sported a 75 mph speed limit. We anticipated two hours to the track, and it turned out to be less than 45 minutes.

Parking at the track was not a problem either, as our group had purchased parking passes. With clear signs identifying the various parking areas, and many volunteers directing cars into the designated lots, the ease of parking was also a pleasant surprise. Finding our car at the end of the day was more of a problem than parking had been, since our rental car looked like all the others.

As we approached the main gate for our first venture into this new circuit, we saw the increasing size of the already-large crowd approaching the same entrance. Thanks to the planning and organization of the COTA staff and volunteers, the speed with which we entered was unexpected. Every person—and I do mean "every"—from the parking attendant to gate employee and every single volunteer and employee throughout the entire circuit deserves an award for the most friendly and helpful person I have ever encountered.

The facility itself is first rate, and from our seats at Turn 12

we could see several other sections of the track: To our right, the steep approach to the crest of now-famous Turn 1 and subsequent steep drop. Ahead and continuing to the left, the impressive Esses bordered by the proud Red, White and Blue stripes. To our left was the exit of Turn 11 and the amazing roar and speed coming directly at us, followed by the mind-boggling sudden braking into and through Turn 12 directly in front of us, seemingly within reach. Finally, the roaring engines of the cars pulling away from us and twisting through Turns 13, 14 and 15 assaulted our ears.

The new track and surface presented another unusual surprise: Every practice session had a full track of all cars. While we have become accustomed to the teams' precise timing, resulting in limited cars and track time during practice sessions, it was such a treat to see every car on track during every practice session.

Our seats in T12 were fantastic, and we saw first-hand many crucial passes. The most memorable and race-altering of these events included Mark Webber's "off" that ended his race and "THE" Hamilton pass to overtake Vettel and ultimately win the race.

It is difficult to describe the feeling and sound of the mounting anxiety of the crowd as, lap after lap, Hamilton appeared to be gaining on Vettel approaching "our" turn but then failing to overtake, and then the ensuing roar as the pass finally happened... and all of this right in front of us!

This was made even better by the use of small video devices that allowed you to select race reports as well as driver communications. Being able to listen in on radio chatter between the drivers and their teams was enlightening as was being able to view from the on-board camera.

Everyone we met liked their seats, which means you probably can't go wrong with seating. Even general admission seating had great views from hillsides and banks.

What you did not see if you watched the race on Speed TV were several interesting support races that provided pre-

Watching the coverage on television doesn't show how good the drivers are and how impressive even the slowest cars are. The ability of the car and driver to change direction is nothing short of phenomenal.

views of the type of action we would see from our seats. Both the Ferrari Challenge Race and the Pirelli GT3 Cup Trophy races provided lots of drama.

The Ferrari Challenge Race included a much broader range of driving skill than would normally be associated with pro racing. One of the back markers proceeded to run straight off the track into the run-off area on three successive attempts before successfully negotiating Turn 12, and this was not because of a particularly fast pace. The successful completion of Turn 12 earned him a standing ovation from the crowd. His relative pace would have kept him in Green Group for at least a few more weekends.

Not surprising, according to the Ferrari Challenge website, pro drivers or instructors are not allowed to compete in the Ferrari Challenge. However; such was not the case as the reigning American Le Mans Series GTC driver champion competed in the inaugural race. In fact, there were several familiar faces from that Pro series mixed in with the beginning racers. This mix of skills led to some interesting braking and passing maneuvers.

The Pirelli GT3 Cup Trophy Race was not what we had expected. Although the experience level on average seemed to be higher than the Ferrari Challenge Race, it was not the same as the Porsche Mobil 1 Supercup, which is the international motor racing series organized by Porsche AG that supports much of the Formula One World Championship. We witnessed some close racing that included several ill-advised passes resulting in more than a little damage.

The most interesting support race was the Vintage Formula One Race that included an incredible range of vintage Formula One cars from 1966 through 1983.

Among the cars included were the six-wheeled Tyrell, TAG McLaren, JPS Lotus and various Ferraris. These were the same cars campaigned by Lauda, Villeneuve, Hunt, Jones, Prost and others. Most of these cars were driven like they were meant to be driven. The sounds were incredible!!

The evolution of the cars was interesting as well, particularly with respect to driver position in the chassis. Throughout the evolution the driver moved forward until he was almost between the front wheels, and then the driver's position was moved aft to the present location.

The F1 practice and qualifying sessions and race were incredible. Watching the coverage on television doesn't show how good the drivers are and how impressive are even the slowest cars. The ability of the car and driver to change direction is nothing short of phenomenal. On TV, we are so focused on the leaders that we miss the races within races, where the passing and dicing through the tricky parts of the course are amazing.

Obviously, we had a wonderful weekend, at a truly exciting Formula One race, at the beautiful and impressive Circuit of the Americas. What made this weekend even better was sharing it with other PCA members, Tuffy and Sheri von Briesen, and Tom and Betsy Zaffarano. We were joined by the arrival of Potomac's Fred and Starla Phelps, who were seated in a different section of T12, and even Alan's son-in-law from St. Louis attended and occasionally left his seat at T10 to spend some time with us at T12.

Now we begin the countdown to our 2013 trip to Austin.

•

Sally and Alan Herod are long-time Potomac members; they live in Leonardtown, Md.

#### 2013 U.S. Grand Prix

Circuit of the Americas, located outside Austin, Texas, is scheduled to be the site of the 2013 Formula One race. Information about seats, hotels and other information can be found on the website, www.circuitoftheamericas.com. The 2013 race is scheduled for Nov. 17.

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## Potomac's own Junior Birdmen

Potomac's Larry Anding of Mclean, Va., wins the prize for best caption of the goggled and helmeted Potomac members featured in the Decmber 2012 issue of *dV*. Anding's suggestion that they all looked like Junior Birdmen rang a responsive chord for the judge.

According to wikipedia, "the Junior Birdmen of America was a club for boys interested in building model airplanes, founded (ca. 1934) and promoted by the Hearst newspapers, with the cooperation of the U.S. Bureau of Air Commerce.

"The club is now best remembered for the song 'Up in the Air, Junior Birdmen,' which has been sung with a variety of lyrics to mock would-be or inexperienced aviators.

In a sequence in the 1955 film 'To Hell and Back,' Audie Murphy's infantry companions irritate a group of air corpsmen by singing a version of the son

"The club members," as Anding recalls, "had to make 'windscreen goggles' from their two hands, the thumb and index fingers of each separately touching to make a circle. They then inverted their hands upside down and placed the circles against their face and in front of their eyes to form the pretend goggles that look like those in the photographs.

"I know it is difficult for the young guys to understand all of this technical dexterity. Heh heh heh..."

For his winning caption, Anding will receive a complete volume of 2012 *der Vorgängers*.

### Feb. 16 set for DE instructor class

The time is again coming up for our Potomac DE Instructors Annual Refresher. Potomac Region has one of, if not the best, DE program available, and to keep the standards and safety of our events at the forefront of these available programs, we need to keep our instructor corp ahead of the game.

As with many in our working lives, recertification, earning yearly credits, on-going education is an important facet of any program, and in our volunteer "job" where we deal with teaching and training drivers in

a high-speed environment, this is essential.

We are requiring all Potomac and Chesapeake instructors to attend at least once every two years.

This year again, our Instructor Refresher is at PJSkidoos (PJSkidoos.com) on Saturday, Feb. 16, 10 a.m. until 4:30 p.m. with lunch provided. This program is for existing Instructors, please register on line at motorsportsreg.com.

Out annual training for instructor candidates will take place at Summit Point on April 5. By invitation.

#### How you can contribute to der Vorgänger

Your favorite Founders' Region monthly newsletter/magazine can benefit from your observations and experiences with your favorite marque.

We are always in need of articles, photographs, illustrations, maps and charts to help tell the stories that intrigue us all.

All around us are wonderful stories just waiting to be told. If you feel you don't have the time or expertise to tell those stories yourself, at least pass along your ideas. Those can be of interesting Porsche people you meet, or interesting Porsche cars you come across.

Here are some ideas that resonate with dV readers:

- Travel stories that involve a Porsche. Examples are Tim Atkinson and daughter's trip across the country when he bought his 964 out West.
- Visits to car museums. An example is in this very issue on Pages 14–15.
- DIY (Do-It-Yourself) articles on some small or large DIY project that you've done. Examples abound,

from rebuilding an engine to replacing hood struts.

- Interviews with interesting people who own interesting Porsches. One example that will appear in a future issue is on Sal Fanelli, who owns a Porsche *tractor*.
- "My first experience with PCA Potomac," which could be what your High Performance Driving Clinic was like, or your first Drivers Education event or just an intertaining Drive 'n Dine.
- Why-I-Love-My-Porsche articles are always welcomed, but they must be accompanied by a photo of you with the car.
- Photographs of yourself or fellow Porsche owners with their cars; examples are seen in every issue of *dV* on Page 31.

Write your stories, shoot your photos (no low-resolution cellphone photos, please; we simply can't use them) and send them to me; I'll help you clean up the grammar, spelling and punctuation.

Please send to dveditor@pcapotomac.org or call me at 703-239-1678. Thanks.

## Join PCA the easy way

Just point your smartphone with a QR app at the image at right. That will take you to the PCA website where you can find the form for joining.

Membership entitles you to receive not only *der Vorgänger* every month (except January) but also monthly issues of PCA's official national magazine, *Panorama*. Some Porsche dealers also recognize PCA membership with a 10% discount on parts.

The Founders' Region, Potomac is the founding region of PCA. The club offers over 100 events each year, including Driver Education events—including free Tech days for all members—Drive'n Dine and other social events, autocrosses and rallies.



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## Readers and their cars

Photo by Tony Pagonis Left: New for 2013 Autocross Program Chair Gary Baker with his son, Kallist, 10, drives a 1979 928 and a 2002 911. They live in Rockville, Md.

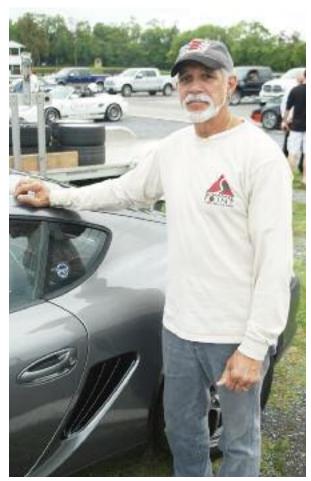


Photo by Richard Curtis

Above: Co-Chief Instructor Dan Dazzo with his new Cayman at the July DE at Summit Point. Dazzo previously was the club's safety chair.

Photo by Ken Marks

Right: Mike Walgren, of Chantilly, Va., attended a Katie's Cars & Coffee gathering in 2012 with his 2001 911 Turbo.





Potomac Owner's Group and Potomac member Richard Collela captured this dew-covered 356 during the 2012 East Coast Holiday event.

