

# *Das Herz von Dixie*



*April 2025*



Greg Bayuga's March 22 Driving Tour and  
Lunch at Mary Bobo's Restaurant in Lynchburg, TN

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COVER PHOTO CREDIT: GREG BAYUGA

**President's Corner**  
by **Jim Cambron**

**We're right in the middle of our Porsche Club Year Activities**



We're off to a great start with the first quarter in the books and right on track with three Pit Stop Breakfasts, three Monthly Membership Dinners, three Porsches and Coffee, and two Driving Tours. One Tour was cancelled pending inclement weather, which was also a false alarm, and has become routine

for the Tennessee Valley with our strange winter weather.

We also celebrated three special presentations: member Scott Millhouse presented a Tech Session in his garage workshop on his restoration progress of a hurricane salt-water damaged 981 Cayman evolving into a track car. Member Prin Steward and his Shop Manager Verena Buss, presented a Tech Session with demonstrations of the multiple capabilities of AutoworkZ including Ceramic Coating, Vinyl Paint Protection, Vinyl Applications, Window Tinting, and many other specialty products. Lastly, Club Driving Tour Leader Rich LeClaire instructed the Annual Class on Driving Tour Leader Certification and updates for previous Leaders.

As the Club Historian, I researched the Club's History files and identified the Club Driving Tour Leaders on the rolls. Surprisingly, we have 27 Driving Tour Leaders in various stages of qualification:

We have **nine Certified Driving Tour Leaders** (attended the Certification Class, successfully led a Driving Tour, and have updated their Certification each year since their initial Class by reviewing the PCA/Region Driving Tour Policy):

- **Jim Cambron**, Club President, certified in 2003, led 69 Club Driving Tours.

- **Dave Schroetter**, Past Club President, certified in 2017, led 15 Club Driving Tours.
- **Greg Bayuga**, Club Membership Chair, certified in 2023, led 9 Club Driving Tours.
- **Regan Carlisle**, past Club Treasurer, certified in 2023, led 7 Club Driving Tours.
- **Ed Stone**, Club Treasurer & VP, certified in 2021, led 2 Club Driving Tours.
- **Rich LeClaire**, Club Driving Tour Coord, certified in 2023, led 2 Club Driving Tours.
- **Will Stewart**, certified in 2023, led one Club Driving Tour.
- **Jack Harding**, certified in 2024, led one Club Driving Tour.
- **Dom Genovese**, certified in 2024, led one Club Driving Tour.

We have **nine Classroom Qualified Driving Tour Leaders** (need to lead a successful tour to complete their certification):

- **Beth Regan**, past Club Social Chairperson, classroom qualified in 2024
- **Brents Pepper**, past Club Treasurer, classroom qualified in 2023
- **Dexter Martin**, classroom qualified in 2023
- **Michael Rutherford**, classroom qualified in 2023
- **Tone Wilhelmsen**, classroom qualified in 2023
- **Melanie Nord**, Club Social Chairperson, Classroom qualified in 2024
- **John Nord**, Club Nomination Committee Chairman, classroom qualified in 2025
- **Joe Still**, classroom qualified in 2025
- **Steve Ward**, classroom qualified in 2025

We have **nine previous but uncertified Driving Tour Leaders** (who need to attend a Classroom presentation or review the updated PCA Driving Tour Leader Policy Letter to update their Certification):

- **Bill Trevey**, past Club President & Treasurer, led 9 tours 2011-2017
- **Paul Webb**, past Club VP, led 4 tours 2011-2017
- **Kenny Raines**, past Club VP & CDI, led 2 tours in 2004 & 2008
- **Joe Vins**, led 2 tours in 2011 & 2012
- **Vince Schoonover**, led 1 tour in 2022

- **Scott Witt**, Club Webmaster, led 1 tour 2021
- **Ken Haynes**, past Club President, led 1 tour in 2013
- **Gil Ferguson**, led 1 tour in 2015
- **Bart Hollingsworth**, led 1 tour in 2010

Thanks so much for the work you 27 Club members invested the last 23 years leading Driving Tours. We appreciate all our members' attendance at our events, and especially those of you who lead them.

We have another full Quarter of activities ahead, April through June. I look forward to seeing you all at these events presented just for your entertainment and enjoyment.

Jim Cambron  
President, Heart O' Dixie Region, PCA

## From the Editor



This quarter I am going to add something new to the newsletter based on input from several members of the club: Internet links of Porsche related articles of general interest to the club. If you run across articles that you would like to see included in the newsletter email them to me at

[stokes@aris.net](mailto:stokes@aris.net) and I'll include them in a future newsletter.

For this quarter, the following links were submitted (thanks to Ed Fisher):

- [Porsche Macan - Crash & Safety Tests - 2024](#)
- [2024 Porsche Macan EV Tested: Goes Far, Not Fast](#)
- [What happens when cars sit](#)
- [10 Things About Porsches You Should Know Before Buying One](#)

## 1Q HOD Events

- Jan 4<sup>th</sup>, **Pit Stop Breakfast** at Club favorite: **Edgar's Bakery, (Providence) Huntsville**
- Jan 9<sup>th</sup>, **Member's Dinner Meeting**, at **PaPPO's Pizzeria & Pub, Memorial Parkway S., Huntsville**
- Jan 18<sup>th</sup>, John & Melanie Nord hosted **Porsches & Coffee** at **Hamley Bake Shop, Meridianville**
- Jan 25<sup>th</sup>, **Cambron hosted the 13<sup>th</sup> Annual Driving Tour** to **Ricatoni's Italian Grill, Florence**
- Feb 1<sup>st</sup>, **Pit Stop Breakfast, City Café Diner, Drake Ave., Huntsville**
- Feb 2<sup>nd</sup>, optional event in cooperation with **Porsche of Huntsville** and **EuroSunday Cars & Coffee, Meridian St., Huntsville**
- Feb 8<sup>th</sup>, Tech Session at **Scott Millhouse Garage, Madison**, to review his **981 sunken Salvage Title rejuvenation** into a **HPDE race Car**
- Feb 13<sup>th</sup>, **Membership Dinner Meeting** at Club favorite, **Luigi's Italian Grill, US-72, Madison**
- Feb 15<sup>th</sup>, **Greg Bayuga's Driving Tour**, to **Prichard's Distillery, Kelso, TN** followed by lunch at the **Seafood Place, Tullahoma (Weather Cancellation)**
- Feb 22<sup>nd</sup>, **John and Melanie Nord** hosted **Porsches & Coffee**, at **Melanie's French Bakery favorite L' Etoile Patisserie Bakery, Meridian St., Huntsville**
- Mar 1<sup>st</sup>, **Pit Stop Breakfast** at the **International House of Pancakes, Hwy 72 West, Madison**
- Mar 8<sup>th</sup>, **AutoworkZ Car Detailing Service Tech Session, Jordan Lane (Hwy 53), Huntsville** with refreshments and coffee
- Mar 13<sup>th</sup>, **Membership Dinner Meeting, Le Fuente Mexican Restaurant, Meridianville**
- Mar 22<sup>nd</sup>, **Greg Bayuga's 8<sup>th</sup> Annual Driving Tour**, to **Miss Mary Bobo's, Lynchburg**
- Mar 29<sup>th</sup>, 8:00AM, **Cambron** hosted **Porsches & Coffee** at **Big Foot's Little Donuts, County Line Rd., Madison**
- Mar 30<sup>th</sup>, optional event in cooperation with **Porsche of Huntsville** and **EuroSunday Cars & Coffee, Meridian St., Huntsville**

## HOD Membership News

We welcome seven new members this quarter. In alphabetical order by last name, they are Thad and Christy Henry, Richard Jarrell, Russell and Sunny Lloyd, and Bill Ory. We look forward to meeting and talking with you at upcoming events.

- **Dale & Cynthia Burnham** joined PCA 12/01/1965, celebrating their **60th** PCA Anniversary last December
- **John Philips** celebrates his **57th** PCA Anniversary in September.
- **Past President Chuck Drake** celebrates his **56th** PCA Anniversary in August.
- **Jim & Suzanne Ferrell** celebrate their **56th** PCA Anniversary in October.
- **Chris & Margo Torgerson** celebrate their **49th** PCA Anniversary April 1<sup>st</sup>.
- **Tony & Sharon George** celebrated their **48th** PCA Anniversary last December.
- **Jeffery Clancy** celebrated his **48th** PCA Anniversary March 1st.
- **March 29th our Club, the Heart O' Dixie Region, celebrated its 64<sup>th</sup> Anniversary.**

## Member Articles

This quarter we have three excellent member articles by region PCA club members Scott Millhouse, Ed Fisher, and Bruce Tiller. Scott's article tackles the difficult job of restoring a Cayman S that was flooded by salt water for several months duration. His article tackles the difficult process of replacing and reprogramming the ECU components within the car. In the second article, Ed addresses the often overlooked health of a car's bump stop or what Porsche calls an axillary or helper spring. In the third article, Bruce tackles the issue of repairing a broken spring on the rear spoiler using MacGyver like superpowers.

All members are encouraged to write articles about pretty much anything Porsche related. If you have an idea, please share it. I would like to extend a special invitation to new members, youth members, and really anyone who has a perspective to share with their Porsche experience.

## Repairing a Cayman Flood Car

### Scott Millhouse

I wrote an article that appeared in the January 2023 newsletter about our adventures picking up my new 2023 718 Boxster in Germany in the Fall of 2022. That was our first time back to Germany since I left my 944 there when we moved back to Alabama in 1987. Before ordering the new 718, I unsuccessfully tried to purchase a 981 S Boxster because I thought I wanted the normally aspirated 6-cylinder. Hopefully, this Cayman S will complement my 718 Boxster, be better suited for track events, and fulfill my desire for a non-turbo 6.

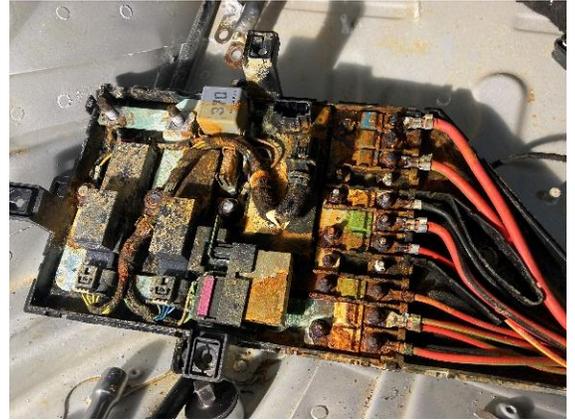
I have been enjoying the Porsche Driver's Education events at Barbers Motorsports in my 2023 Boxster. Perhaps a little too much. Last event started with new brakes and tires. Wore both about 1/2 out in one weekend. I'm to move up in class and I decided I do not want to continue the abuse with the Boxster. Also I would like to do some track centric modifications like suspension, seats and tire upgrades and eventually perhaps engine performance upgrades. I started the hunt for a track car with focus on a Cayman S. I did not want a perfect example but one I could enhance and improve myself. All I could find were cars too good and expensive to modify.

I have a connection with a broker to purchase totaled cars at auction. I saw one at Nashville without structural damage that would be a good project. It got delayed awaiting its title but now after 8 months it finally was auctioned. I broadened my search to include Florida and to include recent hurricane flood cars. I bid on quite a few Porsches but they went higher than I expected with most going overseas. Most that I bid on were running and had salvage titles. Others had a certificate of

destruction so they were parts cars only. I gambled and bid on a salvage title non-running 2016 Cayman S, 6 speed that appeared to have no exterior damage and was supposed to only have water to seat cushion level damage. I won the bid and scheduled delivery. The first challenge was getting it off the trailer. It was first on, over the truck cab and then last off. Problem was it was not rolled on but put on by fork lift with lids closed and locked and with the parking brake on. After several attempts moving it, we had a roll-up wrecker winch it down until he could jumper the electric parking brake to release it. It was then relatively easy to get it into my shop.



Now that I had possession my first task was to see what I had. A quick wash showed a nearly perfect body except for some minor roof dents, assumed from falling branches. It was nicely equipped with 20" turbo wheels, sports chronograph, 14-way seats with Bose and Nav. Finding a laminated purchase sticker in the glove box showed an over \$80k new price in 2016. VIN search showed it was purchased by the last owner in January 2022 for \$69k with 38k miles. Photos from advertisements then showed it still has the same 2018 and 2020 tires. By current wear, it probably had far less than 10k miles added. Since then I have verified that it had only 42,540 miles as recorded in the ECU when flooded.



That's the good stuff. The bad is that it had higher water levels than indicated by random debris and the amount of corrosion. First task with central locking and a shorted electrical system is how to open the lids. After intense investigation, I found that once you take out the wheel wells the frunk can be opened by a hidden pull cable, the fuel door by removal of locking assembly and the rear hatch by another hidden cable. Further disassembly was hampered by the seat motors corroded in place mid track with track bolts inaccessible. Solved that by removing the fore/aft drive motor to provide limited access and then unbolting seats from the tracks. All the carpets and seats were surface dry. Removal showed a cavity under the seats with control modules full of water. All carpeting has up to 3" of dense sound deadening foam attached. All was fully saturated with hidden modules and fuse boxes heavily corroded. The frunk contents was a surprise. It had a new set of front rotors and pads still in Porsche boxes with a new cabin filter on top. With the filter dry and the rotor bags full of water it set flood level about 10" up frunk. The surface rust on the new discs cleaned up nicely and both the front rotors and pads were worn out so Milton (car named after the hurricane) now has fresh brakes since I eventually got tired of disassembly and had to do something moving forward. I drained the oil with no evidence of any water but the standard transmission had about a cup of clean water drain before the clean fluid drained out. Air cleaners were clean and dry so the engine top end is good. With the exhaust under water the components were still wet. Removal showed water to the exhaust ports. Only minor surface corrosion was evident but the exhaust valves were open for two cylinders. With spark plug

removal a bore scope showed minor corrosion on the two pistons and in the lower portion of the bore. Spray carb cleaner removed much of it. I then worked it with a mixture of diesel fuel and motor oil. The two open cylinders then were treated with a full cavity fill of household vinegar to remove corrosion, flushed and then all cylinders flushed again with Marvel mystery oil. The engine was then slowly rotated by hand and the bores checked before rotation with a new starter. With having some mystery oil residue I eventually saw 240-270 psi compression by starter rotation on all 6 cylinders.



Disassembly of the interior showed widespread aluminum corrosion as observed from these images. The water retention for months kept the humidity high inside. The fuse boxes were a corroded mess but so were components that should have been high and dry. The Porsche control center screen for the Bose and Nav was trashed along with the amplifier, all the seating was beyond repair and all air bag modules highly corroded. Track seats and a cheap AM/FM stereo was added and the main air bags and

control module replaced. A workable air bag system is required for the inspection to get the car titled. The entire interior was removed including the carpet, insulation, dash, center console, supporting frame and front wiring harness. The carpeting was surface dry but all insulation was still saturated so they were all shampooed and pressure washed and dried. The frames were heavily corroded so they were acid etched. All fuses were heavily corroded but it was a surprise that the fuse boxes were copper and the fuses aluminum. The boxes and all connectors were vinegar soaked to remove corrosion and then flushed and cleaned with contact



cleaner and treated with dielectric grease. All fuses and relays were replaced with new as well as over 30 computer modules, switches and electrical components. The essential electrical components that were under water were expected but it was a surprise that the upper modules that were just exposed to the high humidity also had some corrosion and needed to be replaced. The following modules and major electrical components were replaced: gateway, front and rear body control modules, the power distribution center, lateral acceleration sensor, steering column and control switch, parking module and switch, ignition switch, HVAC control, center console, HVAC servos, hatch latch, air bag control module, steering wheel air bag, door modules, instrument cluster, voltage control, parking brake, shifter assembly, headlight lenses and

main bulbs, battery as well as engine starter. All have been replaced with new or recycled parts.



The car was then reassembled short of dash replacement with all components as temporary test connections. With the assistance of other HOD members we energized the car and attempted analysis with three different testers. We could not establish a connection past the gateway with any of them. The components were mixed from several cars and VINs, so it came as no surprise that communications could not be established. The Porsche proprietary PIWIS system was rented from eBay to start integration of components.

Much is written about the use of PIWIS 2 and 3 in the forums for Porsche system troubleshooting and modifications. The system I rented was a PIWIS 4. I found that that version had the diagnostic capabilities removed and integrated into online modules that were unavailable for offline usage. I was able to code most individual modules with my VIN and then validate and test many systems but I could not integrate them to use the transponder keys and the major modules so that they could work together and not immobilize the car. It looks like my only option is to tow the car to the Porsche Dealer with full PIWIS capability to complete system integration so the car will run.

I plan to author a follow-up article once the car is operational on the track. I suspect there will be a number of unexpected issues to tackle before that goal is realized. Stay tuned!



## Check Your Bump Stops!

Ed Fisher

This is the standard bump stop used in the front struts of my Cayman. Unlike older bump stops that are normally 1/2" thick, it's over 3" long. Similar units were used in most 996 Carreras, 986 Boxsters, and 987 Boxsters and Caymans. In fact, bump stops have been used since 1984 in the 944 and continued in use into the 991 range of Carreras.

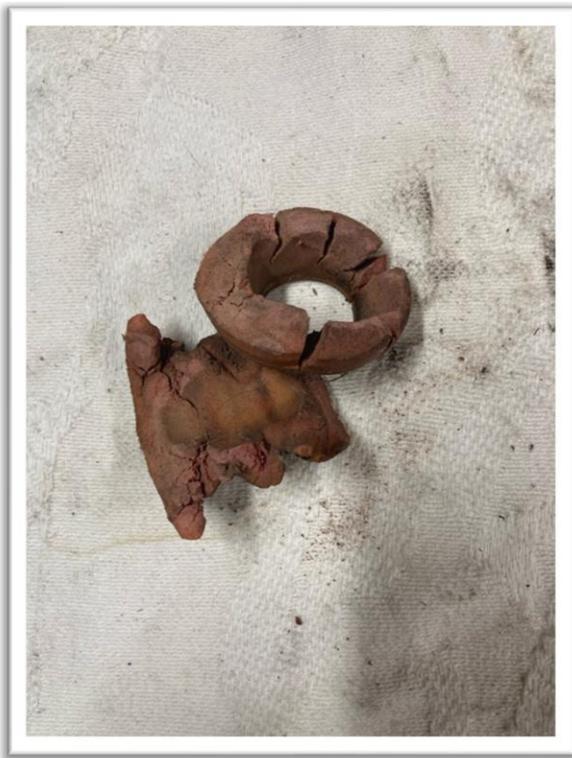


997.333.301.000 Auxiliary Spring

Only Porsche doesn't call them bump stops. Porsche names them variously as *auxiliary spring*, *helper spring* and *additional spring*. Which is a clue.

Soon after purchasing my Cayman, I peeked at the front struts to check on the bump stop health. On the right I found... nothing at all. No dust boot, no bump stop. Hmmm.

Then I looked down to the spring perch and found a chunk of the dust boot and these pieces sitting around having a smoke:



*Auxiliary Spring Remnants after 16 years*

The left side bump stop appeared to be intact and, as I only had one new one on hand, I put it on the right side.

The difference that could now be felt when turning left was significant. The turn happened much faster. Unfortunately, there was still a significant difference between turning left and right: turning right was now slower, with more corner dive, than turning left. Eventually I found that the left one was cracked in many places, missing a few chunks and didn't seem to have the same elastic properties as the new one. All were soon replaced.

## What's The Big Deal?

When the 996 first came out Panorama published an article written by Dickerson, Gagon and Schatz titled, *996 Standard and Sport Suspensions Analyzed*. This is where I first found out about Porsche's unique way of designing suspensions that seems to have baffled the automobile press for two decades or more.

When reviewing Porsche sports cars, the press has often marveled at the way they could give a compliant ride down the highway but then seem to magically firm up in the corners.

I don't know if Porsche invented this scheme or not. I know for a fact that others have used it on their sports cars, including Mazda and Toyota, but probably after Porsche. I'm pretty sure that this scheme only became viable with the invention of silicone rubbers. I think the first was Dow *Silastic* (TM) as Carroll Smith mentions in *Tune To Win*. Modern ones are now usually made from micro-cellular polyurethane, such as *Cellasto* (TM) from BASF. These materials are largely unaffected by oils and many solvents, shrug off hot and cold temperatures, and have very good compression set characteristics. That means they can undergo many compression cycles and not shrink more than a few percent.

The design scheme is this:

1. Equip the car with relatively soft steel springs
2. Mold "auxiliary springs" (long bump stops) from "rubber" to be progressive in operation using folds and/or radius changes in the structure
3. Install the auxiliary springs on the shock or strut shaft so that it is uncompressed at the static ride height

What happens is that in straight running the auxiliary spring has little to no effect, depending on the size of the bump. When cornering the auxiliary spring on the outside of the corner is contacted and begins to increase the spring rate. The harder you turn, the

less increase in roll because the total spring rate is progressively increased. Magic!

And the kicker is that now Porsche doesn't have to go to the trouble of machining/winding the steel springs to be progressive. (At one time Porsche created progressive spring rates from wire that had been formed when straight with a constantly changing diameter). Porsche now uses bump stops, to achieve the same effect. The part count stays the same, but the springs get cheaper.

Porsche owners need to check the status of their bump stops because of three main factors:

- 1) The synthetic rubbers do not last forever
- 2) The fronts seem to deteriorate faster than rears, and the right front seems to go first
- 3) Deteriorated rubber springs can significantly alter emergency handling

Let's put some very approximate numbers to this.

-The front steel springs on my Cayman reportedly have rates of 175lb/in

-The front rubber springs on my Cayman have a rate of approximately 100lb/in at an intermediate compression point

-Therefore, the total front spring rate at full cornering is somewhere in the vicinity of 175lb/in + 100lb/in = 275lb/in

Unless the rubber spring isn't there anymore.

I now have experience with six older cars that use this scheme: a 1989 944, a 1991 944S2, a 1999 Mazda Miata, a 2000 996, a 2005 Toyota MR2 Spyder and a 2008 Cayman. Each car had missing or substantially deteriorated front bump springs (I know, I keep changing the name) and substantially intact, but far from perfect, rear bump springs. Sometimes the dust boots were also missing or were in pieces!

In the case of my Cayman, for example, the missing or deteriorated front bump springs made the front spring rate much softer at the cornering limit than originally designed. The largest effect is that the front roll stiffness is now reduced while the rear is

the same (or nearly the same) as intended by Porsche.

This change in roll stiffness moves the car's handling balance further toward understeer at the limit. As a result, in an emergency (or on the track or autocross course) the car will not handle as intended by Porsche.

## Conclusion

So, do yourself a favor. If you have a Porsche sports car more than, say, ten years old, jack up the right front, place it on a jack stand, remove the wheel and look up into the dust boot (assuming it's still there!) and check out your bump stop. Prod it with a screwdriver. If it looks less than pristine, seems stiff, or if powder begins to rain down, replacement is in order.

## 991.1 Rear Spoiler Issue and Lessons

Bruce Tiller

I recently bought my first Porsche, a 2015 911 Carrera, and have had a few early "learning" opportunities. I had the back off looking for an oil leak, and removed the rear spoiler assembly to get better access. I noticed that one of the springs that assist raising the spoiler was loose. The figure below shows what I found.



Broken Plastic Spring Retainer on Rear Spoiler of 991.1 Carrera

Apparently Porsche has a very weak design on the spring retainer. Over time, that plastic gets brittle

and breaks. I found a discussion on the Rennlist Forum on this condition and a MacGyver-like fix that many have used. While still under warranty, the dealer would replace the entire assembly. While I could not find that exact assembly online, everything I did find was at least \$3000. And it would likely have the same problem! So I chose the MacGyver path to see if I could avoid that cost. The object is to retain the spring with some sheet metal held in place by rivets. My final repair is shown in the figure below. I put a patch on the unbroken side also because I figured it was just a matter of time before it broke as well. This was not too hard to do and seemed to hold the spring well.



MacGyver Fix to Broken Spring Retainer

But when I put the car back together, the spoiler would not move and I kept getting errors when I exceeded 75 mph because the spoiler would not raise. I took it to a local shop thinking it needed to be retrained using the PIWIS system but they could not make it move either. Since the car drove fine, I tabled the problem for a few weeks until I could get back at it. Back home, I removed the spoiler and when I examined it more closely, comparing both sides (one broken and one not), I realized I had not seated the rear end of the spring on its perch when I put in the MacGyver patch. I suspect there are easier ways to do this, but with two people, I was able to grab the back of the spring with a pry tool and pull it forward beyond the stop, then my buddy took a screwdriver and pushed it sideways so it dropped onto the perch. Now when I put it back together, all is well. I have no codes and the spoiler raises and lowers as it should. Why? I am not sure. My theory

is that the non-retained back end of that spring was interfering with the Hall Effect sensor that determines spoiler location by following a magnet on the hinge. If anybody knows for sure, I would love to hear the real reason this works.

Apparently Porsche fixed this problem in the 991.2 version. On a side note, I had to raise and lower the spoiler several times while this condition existed. Since I could not use the button inside the car, I found I could apply 12 volts from a battery charger to the pins on the assembly electrical connector and make it go up and down (since the motors were fine, only the computer would not let it work). If you search for the schematic of that connection, you can see which pins control the motor. Experiment and you can see which pair of pins make it go up, then reverse the pins and it will go down.

I ended up “learning” a lot more than I expected this early on in my ownership, but actually I am glad I went through it. I know more about the car and am certainly not afraid to open up the back end anymore (did that several times over this month). Now the car is back to where I bought it (better actually) and it drives like a dream. I am loving it more every time I get in it. Hope this article helps somebody out there – the Rennlist article is a key resource and can be found by searching for “Rennlist 991 rear spoiler spring”.