

MAY 2016



TobaccoRoads



The monthly newsletter of the Carolinas Region Porsche Club of America



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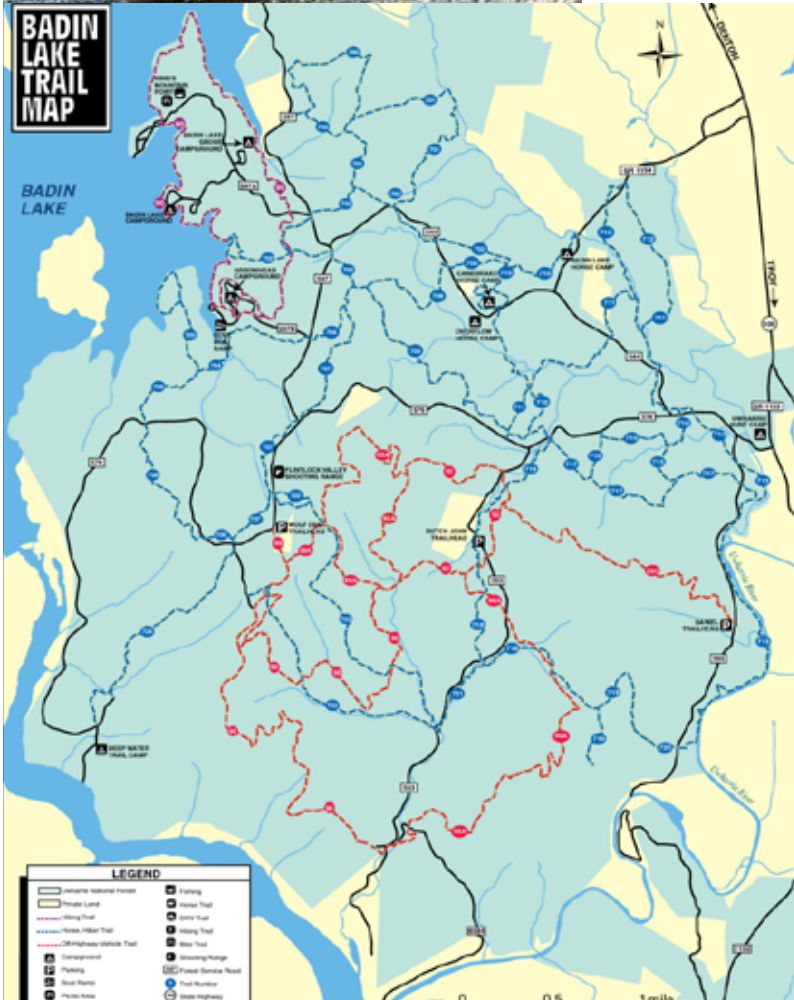
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MEMBERSHIP EVENT | GT4 | NC 209 "THE RATTLER" ****....
AREA UPDATES | BY THE NUMBERS | AUTOMATIC TRANSMISSION



carolina's

PORSCHE CLUB OF AMERICA *region*



Porsche TRAILS 2016

Saturday, June 11, 2016

Meet at the Eldorado Outpost
4021 NC North 109

Uwharrie Forrest, NC 27371
910-572-3474

**RSVP to Adam Morrison

Triangle-AD@carolinas-pca.com

336-239-5735

9:30 Safety briefing and off-road orientation.

10:00 Purchase trail passes and boxed lunches

- \$5 per vehicle
- <\$10 per lunch
- \$10 charity donation

10:20 Start

11:30 Lunch by Badin Lake

*Courses selected for the Cayenne, Macan, 959 Rally Car, and Safari 911s.



From the Driver's Seat

Brian Powell, President



Is a combustion engine more efficient than an electric engine? One could argue that it is. A recent statistic from BBC noted that Formula 1 engines as recent as 2013 were 29% efficient, being able to utilize about a third of the energy contained in the fuel source. Those engines were 2.4 liter V-8's developing somewhere in the neighborhood of 700 hp with a red-line of 18-19000 rpm. In 2014, F1 embraced hybrid technology in a big way, downsizing to a 1.6 liter turbocharged V-6 unit. In addition, there are 2 energy recovery systems. The first is a kinetic system similar to what's installed on most road going hybrids. Under braking, this system converts the cars momentum into electricity. This system can also act as a motor during acceleration, returning the stored power to the drive train. The second is a recovery system attached to the turbocharger, which converts energy from the exhaust gas into electricity. This unit also controls the speed of the turbo, speeding it up to prevent turbo-lag or slowing it down to recover more energy. Altogether, the engine units are now restricted to 15,000 rpm. During race conditions, most run around 12,000 rpm to stay below the mandated 100 kgs/hr fuel rate. That fuel consumption is about half the previous engines rate. The engine in a 2016 F1 car is producing as much power as the previous generation at half the fuel consumption. Add to that the 200 or so horsepower that are gained through hybrid technology and its easy to see why today's Formula 1 cars are setting lap records. Now some would say that they just don't sound right. But by definition, noise is unharnessed energy too.

Put it all together and the advances in hybrid technology have increased fuel efficiency to around 50% in a short 3 years. At the same time, there have been great strides in electric vehicles. With their most recent announcement, Tesla received over 400,000 pre-orders for the Model 3 to be delivered late next year. However, put the technology in the vehicle aside for a

moment though. That's only half of the equation, you have to consider the source. The majority of US power generation still comes from fossil fuel based sources, 68% according to the US Energy Association. In the US, electric power generation from fossil fuel based facilities is around 30-35% efficient. Other sources such as wind, solar, hydro and nuclear are more efficient, looking at fossil fuel only, its 35% efficiency for the electric car versus 50% for F1.

Now we're not all going to drive Formula 1 cars to work, I certainly would not want to do my daily commute in one. I'd take a Tesla in Charlotte traffic any day. And I can't tell you when that Formula 1 technology will make it to market in a production car. I don't think Mercedes, Ferrari and Honda are investing heavily in hybrid technology just for the sport of Formula 1. Racing does improve the breed as has been proven time and again by Porsche engineers. Porsche hasn't been out of the picture either. With the development required for the 918 and the 919 hybrids, its only a matter of time until some of that technology trickles down and Porsche has a main stream hybrid sports car.

So how did you greet the recent announcement of the new 4 cylinder turbocharged 718 Boxster and 718 Cayman? Did you view it as a technological advance or a mandated step backwards? While on the surface it appears to be brought on by increasingly higher corporate fuel economy standards, one can't argue with the higher performance numbers even if it comes from a smaller displacement engine. The new 2 and 2.5 liter engines easily surpass the outgoing 2.7 and 3.4 power plants. I'm encouraged by the move. We might not ever get the 50% efficiency of Formula 1 in a street car, but knowing what's possible does give me hope that the combustion engine isn't obsolete. I take the 718's as a sign that we'll continue to be horizontally opposed for the foreseeable future.



We are proud to announce the return of Cody Forbes to Black Forest Racing. Over the last few years he has been working as a lead mechanic at a European performance shop in Charlotte, specializing in water-cooled Porsches. Adding his expertise to John Forbes' air cooled speciality services we are now expanding to service all years and models of Porsche vehicles.

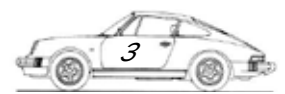
- Porsche Factory trained master mechanic
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Email: Office@BlackForestRacing.com



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see area reports for more detailed information

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Upstate

1st Monday of Month
Quaker Steak and Lube,
Greenville, SC

Triad

3rd Tuesday of month,
7:00pm River Ridge Tap
House 1480 River Ridge Road
Clemmons, NC

Triangle

4th Thursday of month 6:30pm
Tobacco Road Sports Cafe
1118 Environ Way
Chapel Hill, NC 27517

Hickory

2nd Tuesday of each month @ 6:30
Refer to monthly Area report for location/details OR contact: hickory-ad@carolinas-pca.com

Metrolina

3rd Wednesday of Month (or
check email updates)

Sand Hills

4th Tuesday of every Month
Rotating Meeting Location, refer to
Area Report for details

Recurring Cars and Coffees & Shine and Shows By Area:

Metrolina Area

3rd Sunday Monthly: 9AM to Noon, Foxcroft East Shopping Center located at 7814 Fairview Road

Hickory Area

On hold until the spring. Keep your cars warm though

Triangle Area

3rd Saturday Monthly: 8:30AM, Panera Bread Patterson Place S/C 3603 Witherspoon Blvd Durham, NC 27707

Triad Area

2nd Saturday Monthly 9AM to 12PM Winston-Salem Cars 'n' Coffee at Reynolda Village. April to October.

3rd Saturday Monthly: 8am- 10am. Greensboro Cars 'n' Coffee at UNC-Greensboro. 550 Tate St., which is lot 7 behind the Weatherspoon Art Museum. Year round.

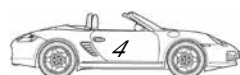
Upstate

4th Saturday Monthly: 8AM to 11AM, Michelin North America Headquarters 1 Parkway South & Pelham Road Next to Marriott Hotel Intersection of Pelham Road and The Parkway at Exit 54 of I-85 in Greenville, SC.

New Members and Anniversary Memberships

The Carolinas Region would like to welcome new members and transferring members. In addition, we would like to congratulate members celebrating anniversary memberships this month for five, ten, fifteen, twenty, thirty, or more years of PCA dedication.

<u>Area</u>	<u>Last Name</u>	<u>First Name</u>	<u>City</u>	<u>State</u>
Triad	Lapinski	Russell	Danbury	NC
Triad	Perry	Wes	Winston-Salem	NC
Triad	Brooks	John	Winston Salem	NC
Triad	Jones	Nicholas	Kernersville	NC
Triangle	Bowen	Patrick	Durham	NC
Metrolina	Provato	Christopher	Davidson	NC
Metrolina	Subramanian	Marx	Huntersville	NC
Metrolina	Lashley	Atheil	Monroe	NC
Hickory	Howard	Jeffrey	Mooresville	NC
Metrolina	Wilkins	Rodrick	Charlotte	NC
Metrolina	Skeen	Michael	Charlotte	NC
Metrolina	Taylor	Jordan	Charlotte	NC
Metrolina	Ferguson	Brian	Charlotte	NC
Metrolina	Wilson	Ebony	Charlotte	NC
Sandhills	Hackman	Kenneth	Pinehurst	NC
Hickory	Drendel	Frank	Hickory	NC
Hickory	Wingler	Sylvia	North Wilkesboro	NC
Upstate	LaTourette	Philip	Greenville	SC
Upstate	Tapio	Michael	Greenville	SC
Upstate	Herwald	kurt	greer	SC
Upstate	Werner	Gilbert	Greer	SC
Upstate	Dingus	Cory	Piedmont	SC
Upstate	Palacino	Dan	Travelers Rest	SC
Upstate	Palacino	Alisha	Travelers Rest	SC
Metrolina	Hale	Ronn	York	SC
Metrolina	Hale	Deronda	York	SC



5 Year				
Triad	Johansson	Stefan	Walkertown	NC
Triad	Harrison	Jim	Greensboro	NC
Triad	Harrison	Priscilla	Greensboro	NC
Triangle	Brantley	Frank	Chapel Hill	NC
Triangle	Brantley	Tonya	Chapel Hill	NC
Metrolina	Bokas	George	Concord	NC
Metrolina	Shannon	Jack	Charlotte	NC
Metrolina	Shannon	Lorraine	Charlotte	NC
Upstate	Oler	Jeff	Flat Rock	NC
Upstate	Oler	Erik	Flat Rock	NC
Upstate	Glenn	Steven	Prosperity	SC
Upstate	Glenn	Taylor	Prosperity	SC
Upstate	Wishart	Mark	COLUMBIA	SC
Upstate	Watson	Marion	Columbia	SC

10 Year				
Out of Region	Segura	Debra	Newtown	PA
Triangle	Tarascio	John	Chapel Hill	NC
Triangle	Tarascio	Jacqueline	Chapel Hill	NC
Hickory	Tedder	John	Forest City	NC
Hickory	Tedder	Gail	Forest City	NC
Metrolina	Holtan	Barry	Matthews	NC
Metrolina	Segura	John	Charlotte	NC
Hickory	Sutton	Brian	Statesville	NC
Hickory	Sutton	Hazel	Statesville	NC
Upstate	Stabler	Jonathan	West Columbia	SC
Upstate	Stabler	Ken	West Columbia	SC
Upstate	Campbell	Irvin	Anderson	SC
Upstate	Campbell	Rebecca	Anderson	SC
Upstate	Troutman	John	Aiken	SC
Upstate	Troutman	John	Aiken	SC
Upstate	Trottier	Ed	Aiken	SC
Upstate	Trottier	Cheryl	Aiken	SC

15 Year				
Triad	Parker	John	EDEN	NC
Triad	Parker	Kaye	EDEN	NC
Hickory	Boehm	Herbert	WILKESBORO	NC
Hickory	Boehm	Kathy	WILKESBORO	NC

20 Year				
Triad	Lauer	Tommie	Greensboro	NC
Triad	Lauer	Tommy	Greensboro	NC
Metrolina	Sprouse	Eric	CHARLOTTE	NC

25 Year				
Metrolina	Thomas	Elizabeth	Matthews	NC
Upstate	Mauldin	Gary	CULLOWHEE	NC
Upstate	Mauldin	Nancy	CULLOWHEE	NC

Tobacco Roads is the official publication of the Carolinas Region, Porsche Club of America.

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The ideas, opinions, and suggestions expressed in *Tobacco Roads* are those of the authors and no authentication is implied by the editors or publishers. *Tobacco Roads* has not authenticated the claims and guarantees as offered in this publication.

Keeping It Current:

Have you bought or sold your Porsche? Moved or otherwise had a change of address or contact information? Those updates are handled at the national level of Porsche Club of America and can be updated either on the website, www.pca.org or by writing to:

**PCA National Headquarters
P.O. Box 6400 Columbia, MD 21045**

**(410)381.0911 (p)
(410)381.0924 (f) and email:
admin@pca.org**



**It's Not Just The Cars
It's The People !**



2016 Calendar

See Area Reports for More Information

For additional information and events outside the Carolinas Region go to:
<http://www.pca.org/Calendar/PCACalendar.aspx>

May

1	Autocross #1 – Lexington, NC
21	Triad Porsche Corral/American Children's Home Car Show, Lexington, NC
7	GMP Performance Open House, Charlotte, NC

June

3-5	Triad Exploring Blowing Rock Drive
24-26	Triad Roads and Rails/YMCA Camp Hanes Charity Drive
26	Autocross #2 – Greenville, SC

July

9	Tri-Area Drive & Dine & Car Show (Sandhills, Triad, Triangle)
9	Hickory Drive & Dine to Shatley Springs
9-10	Summer DE, Atlanta Motorsports Park
24	Metrolina Drive & Car Show, Raffaldini Vineyards
31	Autocross #3 – Lexington, NC

August

26-28	Sommerfest, Greenville, SC
28	Autocross #4 – Greenville, SC

September

10	The Autolawn EuroClassic, SALT Block, Hickory, NC
17	Rock Barn Euro Classic Car Show, Rock Barn Gold Club & Spa
24-25	Fall DE, CMP

October

2	Autocross #5 – Lexington, NC
22	Sandhills/Porsche Fayetteville customer track day CMP

November

4-6	Regional Fall Tour - The Ridges Resort and Marina in Hiawassee, GA
12	Hickory Drive & Dine to Blowing Rock, NC
18	Solo Only DE, VIR
19-20	Season Finale DE, VIR

Event Color Key

Drivers Education or Club Race
Carolinas Region Autocross Series Event
Social, Multiple activity event, Shine & Show, Concours, etc.
Technical Session
Driving Tour - day trip
Driving Tour - overnight
No color means other notable event

Want to see photos of recent Carolinas Region events?

Go to:
carolinasregionporsche-club.shutterfly.com/

If you want to contribute your own photos send an email to Ron Reed, Regional Media Coordinator, at media@carolinas-pca.com

INBOX

or

MAILBOX



Whether you receive the hard copy or opt for electronic only, the digital option is always available on the region's website. If you wish to opt-out of future paper delivery, simply reply to membership@carolinas-pca.com with your name and area, indicating your preference to opt-out.

If you wish to continue receiving the paper copy – no action is required.



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Are you a Facebook member?

The Carolinas Region has a group on Facebook. Search on 'Carolinas Region - Porsche Club of America'.

Regional Support Team

Currently Vacant, inquire if interested in position

Advertising Coordinator
advertising@carolinas-pca.com
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On the cover:

Ok High Res photos are becoming harder to find. I know there are some photo bugs out there. Send me a great High Res photo.

This one, I searched for an found on Flickr. I bet the owner is is a club member. Keep Driving



Member's Bits and Pieces

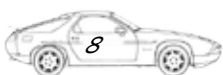


By Emails to the Editor

I was lucky enough to get one of the 35 GT4 Club Sports that shipped to the US. We ran our first Trophy Series East race last weekend at Road Atlanta and the event was well attend by everyone from the CEO of Porsche motor sports to the engineers who developed the Club Sport.

Attached are a couple of pictures from that race. Perhaps you can use them in Tobacco Roads. A couple are from the pit stop we made during the enduro and the other is from the official photograph Porsche took of the cars on the grid. My car is outside second row. Our next race is this coming weekend at NOLA.

Dave Roberts



Membership Event:

Triangle and Triad | April 2, 2016

By Adam Morrison



On April 2nd, the Carolinas Region held a membership event. This was in conjunction with the board meeting. The purpose of this event was to raise awareness of club opportunities. Many of the area's coordinators were in attendance. There were just over 60 people who dropped in. All in all it was a great event, and received very positive feedback. As a Board, we hope to be able to schedule a similar event in your region.

Congratulations to the following for winning the PEC and Porsche service certificates:

Dri

Atlanta PEC:-

Kaye Parker - Emily Branch - Dan Jackson

Porsche of Greensboro service certificates:-

Richard Peters - Catherine Perry



Members at the Event



Goodies Galore



Club Racing



Driver's Education



Learning about all things Autocross



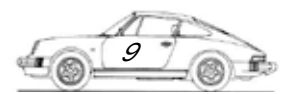
Picking Door Prize Winners



Someone is Going to Atlanta



Going to Atlanta. Won a Driving Experience



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PORSCHE



Track Tips: Preparation

By Devin Jones



Track Days

Taking your car to the local circuit is always something to look forward to. Whether you're out there to improve your car, your skills or both, track days are a great way to get involved with racing in a safe environment. It's important to know what to expect at a track day and how you can get the most out of the day, while being safe.

Rules of the Road

From a driving standpoint, track days are pretty straight forward. However, there are a few important regulations that are put in place at most track days in order to keep all drivers safe. Many tracks will have you put a number on your car, if you don't already have one in place there, so if you show up with an unnumbered car check with local officials and see if one is needed. Painters tape is a good option to create a makeshift number. It's also helpful to bring some basic tools and a tire gauge for setting some pressures before heading to turn laps.

Car Grouping

Cars will be grouped into different sessions, knowing where your car falls in the order is an important question to ask at the sign in desk. You will be grouped with cars similar to your own. In some cases, tracks will group drivers as well, from novice to experienced. Seeing where you fall in both of these grouping is important to know before heading to a track day.

Flags and Passing Rules

The rules once you get on track are important to follow for the safety of yourself and everyone around you. Know the basic flags and how they are used. Know the difference between local yellows and full course ones, along with which flag will be displayed to end the session. Another important piece of knowledge, is pit-in and pit-out. Know where each is and be familiar with blend lines, because every track is different. Lastly and most importantly, know the passing zones. Most track days will have passing zones on long straights with an adequate amount of space for a clean, simple pass. Only pass in those areas, don't pass late in the brake zone, and try to always hold a consistent line, a clear point-by helps as well.

Advice From Instructors

After each session is finished, take time to talk with some local track-day instructors. They will be willing to help with any questions you may have. A lot of these instructors are local to the track, so they have a ton of experience at that particular circuit, so from a driving standpoint they will know the track like the back of their hand. There is no doubt they can help you lower your lap time, no matter the car. In some cases, instructors can hop in the passenger seat and really go in depth on how you can improve your driving.

Have Fun and be Safe

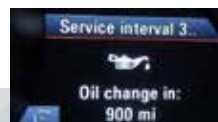
Track days are about having fun, so that should always be a main goal. The other goal is safety, the safer the session the more track time you'll have. So be mindful of those around you and get out there and support your local track. You'll be glad you did.



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The Journey is the Reward:

The Rattler NC 209

By Robert Rainer



NC 209 has a little bit of everything for the weekend rider - pastoral valley views, challenging mountain climbs, twisty and tight technical sections, and a great little mountain town to visit - Hot Springs, NC. A popular weekend ride from Asheville, Maggie Valley, and Waynesville, it can be a lazy roll through the scenic countryside or a place to test the edge of your tires. It's up to you.

Traveling thru the Pisgah National forest and over the Great Smokey Mountains is Hwy 209 "The Rattler", some of the most attention demanding but beautiful riding you will ever experience. Once you've successfully ridden "The Rattler", you will understand why all the other's were merely preparation rides.

There are over 234 twists, turns and curves from Lake Junaluska to Hot Springs and another 30 from Hot Springs down to the Bobarosa Saloon. I think the "Rattler" will provide you with scenic beauty and test your driving skills.

Ride Description:

NC 209 starts near scenic Lake Junaluska at Exit 104 of the Great Smoky Mountains Expressway (US 74). This first section quickly leaves the semi-urban area behind to follow the Pigeon River north. In 3.5 miles it crosses I-40 at Exit 24, another point to access the south end and begin your ride.



Once across the interstate, it continues to roll out through farmlands in gentle sweeping curves towards the mountainous horizon. The valley narrows and a long climb takes you over the first hump and down into Fines Creek. At the bottom of this first hill, make the well marked sharp right turn at Ferguson's Market to enter the next valley section.

Roll along the stream for 1.5 miles then start the twisty climb over the first mountain. Nice curves across the mountain top wind through forest and homes with a few good views, but keep your attention on the road. Watch for gravel in the turns which are sharp and challenging for the next 4.5 miles.

The gradual descent off the mountain brings you to another valley as the road traces the winding course of another stream and rounding a curve you'll arrive at the junction with NC 63 at Trust.



A few more curves through the woods bring you to the long straight section of road which crosses broad Spring Valley. Enjoy the break from the twisty sections, it's short lived. The valley soon narrows and the road rejoins the stream winding and twisting along it for the next



several miles.

A sharp hairpin turn starts the last section of NC 209 as it climbs to enter the national forest. It's a tight and technical ride through sharp and challenging curves that will rival the most challenging roads you can find. Be vigilant

for gravel in the hairpin curves, some of which will have you dropping into first gear. There are a couple unpaved overlooks



along the road.

Arriving in historic Hot Springs, you'll find several good places to grab a meal and take a well deserved break. The 2000 mile long Appalachian Trail passes through town, you may see some of these marathon hikers. On any nice weekend you'll share the company of numerous riders who make the ride from Asheville and Tennessee. If you have the time, visit the Hot Springs Spa to enjoy a soak in the natural hot springs that give the town its name.





SATURDAY, MAY 21TH, 2016

TRIAD AREA PCA WILL HOST THE EIGHTH ANNUAL
“PORSCHE CORRAL CHARITY EVENT”
IN CONJUNCTION WITH THE
AMERICAN’S CHILDREN’S HOME 18TH ANNUAL
CAR, TRUCK AND MOTORCYCLE SHOW

WHERE: ON ACH CAMPUS LOCATED AT 3844 NC HIGHWAY #8,
LEXINGTON, NC 27292

SCHEDULE: - STARTS AT 9:00AM UNTIL 3:00PM
- PEOPLE’S CHOICE VOTING FOR PORSCHE CORRAL
- 3 PLACE AWARDS PRESENTATION AT 2:00PM



ENTRY FEE: \$20 FOR EACH CAR WITH ALL
PROCEEDS GOING TO THE AMERICAN
CHILDREN’S HOME. MAIL CHECK AND
REGISTRATION TO: JERRY KILCREASE, 221
KILCREASE LANE, THOMASVILLE, NC 27360.
CHECKS MADE TO: CAROLINAS REGION PCA.

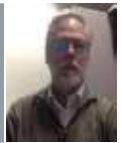
NAME: _____
ADDRESS: _____
CITY: _____
PHONE: _____ EMAIL: _____
CAR MODEL: _____
YEAR: _____

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JKILCREASE@TRIAD.RR.COM .

DIRECTIONS: FROM I-85; TAKE LEXINGTON EXIT # 91 AND HEAD
SOUTH ON HWY #8; AFTER 1.5 MILES LOOK
FOR ACH CAMPUS ON RIG



Tech Werks – Transmissions



Automatic Transmissions

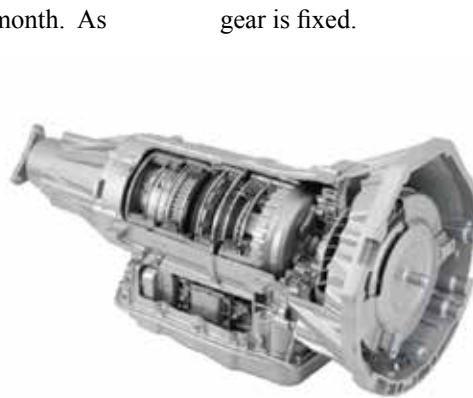
By Robert Rainer

So the TechWerks contributor took a break last month. As promised, this will be a piece on how an automatic transmission works. So we already have explored how the engine converts its power to the rear wheels through a transmission, and that these come in two general varieties, manual and one that uses hydrolytic fluid. The later transmission are know as automatics are pretty much black magic boxes. Like most things I have talked about, I have experience in fixing one of these beasts. The sheer number of moving parts was a sight to behold, and yes my attempt at fixing my automatic transmission on my 928 is soon heading back to a professional this time.

When we learned about how a torque convertor works, we found out that this system uses transmission fluid to turn a turbine which in turn drives a one way clutch that turns an output shaft. The key to understanding an automatic transmission is to understanding its basic components: the planetary gear, clutch packs, breaks and the valve body.

Planetary Gears

A planetary gearset (also known as an epicyclic gear set) consists of a sun gear in the center, planet gears that rotate around the sun gear, a planet carrier that connects the planet gears, and a ring gear on the outside that meshes with the planet gears. The basic idea behind a planetary gear set is this: using clutches and brakes, you can prevent certain components from moving. In doing so, you can alter the input and output of the system and thus change the overall gear ratio. Think of it this way: a planetary gear set lets you change gear ratios without having to engage different gears. They're all already engaged. All you have to do is use clutches and brakes to change which

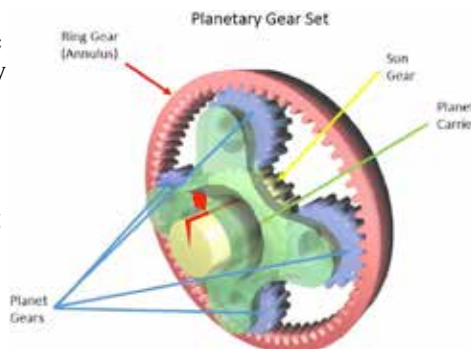


gear is fixed.

One example of a way that this system can be used is by connecting the ring gear to the input shaft coming from the engine, connecting the planet carrier to the output shaft, and locking the sun gear so that it can't move. In this scenario, when we turn the ring gear, the planets will "walk" along the sun gear (which is held stationary) causing the planet carrier to turn the output shaft in the same direction as the input shaft but at a slower speed causing gear reduction (similar to a car in first gear).

If we unlock the sun gear and lock any two elements together, this will cause all three elements to turn at the same speed so that the output shaft will turn at the same rate of speed as the input shaft. This is like a car that is in third or high gear. Another way that we can use a Planetary gear set is by locking the planet carrier from moving, then applying power to the ring gear which will cause the sun gear to turn in the opposite direction giving us reverse gear.

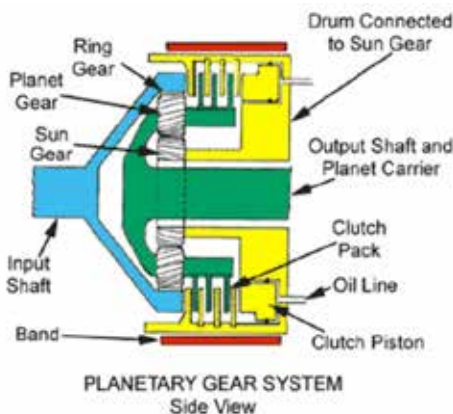
The illustration on the bottom left shows how the simple system described above would look in an actual transmission. The input shaft is connected to the ring gear (Blue), The Output shaft is connected to the planet carrier (Green) which is also connected to a "Multi-disk" clutch pack. The sun gear is connected to a drum (yellow) which is also connected to the other half of the clutch pack. Surrounding the outside of the drum is a band (red) that can be tightened around the drum when required to prevent the drum with the attached sun gear from turning.



The clutch pack is used, in this instance, to lock the planet carrier with the sun gear forcing both to turn at the same speed. If both the clutch pack and the band were released, the system would be in neutral. Turning the input shaft would turn the planet gears against the sun gear, but since nothing is holding the sun gear, it will just spin free and have no effect on the output shaft. To place the unit in first gear, the band is applied to hold the sun gear from moving. To shift from first to high gear, the band is released and the clutch is applied causing the output shaft to turn at the same speed as the input shaft.

Many more combinations are possible using two or more planetary sets connected in various ways to provide the different forward speeds and reverse that are found in modern automatic transmissions.

Some of the clever gear arrangements found in four and now, five, six and even seven and eight-speed automatics are complex enough to make a technically astute lay person's head spin trying to understand the flow of power through the transmission as it shifts from first gear through top gear while the vehicle accelerates to highway speed. On modern vehicles (mid '80s to the present), the vehicle's computer monitors and controls these shifts so that they are almost imperceptible.

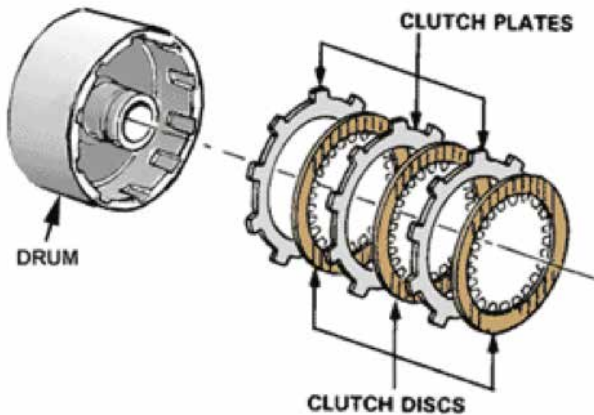


components rotate and which stay stationary. The final gear ratio depends on which component is fixed. For example, if the ring gear is fixed, the gear ratio will be much shorter than if the sun

Clutch Packs



A clutch pack consists of alternating disks that fit inside a clutch drum. Half of the disks are steel and have splines that fit into grooves on the inside of the drum. The other half have a friction material bonded to their surface and have splines on the inside edge that fit grooves on the outer surface of the adjoining hub. There is a piston inside the drum that is activated by oil pressure at the appropriate time to squeeze the clutch pack together so that the two components become locked and turn as one.



One-Way Clutch

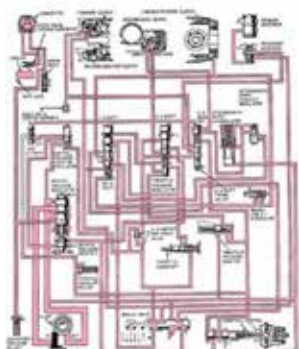
A one-way clutch (also known as a “sprag” clutch) is a device that will allow a component such as ring gear to turn freely in one direction but not in the other. This effect is just like that of a bicycle, where the pedals will turn the wheel when pedaling forward, but will spin free when pedaling backward.

A common place where a one-way clutch is used is in first gear when the shifter is in the drive position. When you begin to accelerate from a stop, the transmission starts out in first gear. But have you ever noticed what happens if you release the gas while it is still in first gear? The vehicle continues to coast as if you were in neutral. Now, shift into Low gear instead of Drive. When you let go of the gas in this case, you will feel the engine slow you down just like a standard shift car. The reason for this is that in Drive, a one-way clutch is used whereas in Low, a clutch pack or a band is used.

Bands

A band is a steel strap with friction material bonded to the inside surface. One end of the band is anchored against the transmission case while the other end is connected to a servo. At the appropriate time hydraulic oil is sent to the servo under pressure to tighten the band around the drum to stop the drum from turning.

Hydraulic System

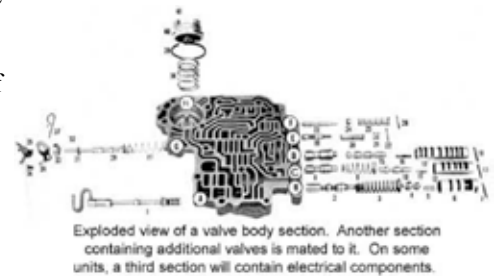


The Hydraulic system is a complex maze of passages and tubes that sends transmission fluid under pressure to all parts of the transmission and torque converter. The diagram at left is a simple one from a 3-speed automatic from the '60s. The newer systems are much more complex and are combined with computerized electrical components. Transmission fluid serves a number of purposes

including: shift control, general lubrication and transmission cooling. Unlike the engine, which uses oil primarily for lubrication, every aspect of a transmission's functions are dependent on a constant supply of fluid under pressure. This is not unlike the human circulatory system (the fluid is even red) where even a few minutes of operation when there is a lack of pressure can be harmful or even fatal to the life of the transmission. In order to keep the transmission at normal operating temperature, a portion of the fluid is sent through one of two steel tubes to a special chamber that is submerged in anti-freeze in the radiator. Fluid passing through this chamber is cooled and then returned to the transmission through the other steel tube. A typical transmission has an average of ten quarts of fluid between the transmission, torque converter, and cooler tank. In fact, most of the components of a transmission are constantly submerged in fluid including the clutch packs and bands. The friction surfaces on these parts are designed to operate properly only when they are submerged in oil.

Oil Pump

The transmission oil pump (not to be confused with the pump element inside the torque converter) is responsible for producing all the oil pressure that is required in the transmission. The oil pump is mounted to the front of the transmission case and is directly connected to a flange on the torque converter housing. Since the torque converter housing is directly connected to the engine crankshaft, the pump will produce pressure whenever the engine is running as long as there is a sufficient amount of transmission fluid available. The oil enters the pump through a filter that is located at the bottom of the transmission oil pan and travels up a pickup tube directly to the oil pump. The oil is then sent, under pressure to the pressure regulator, the valve body and the rest of the components, as required.



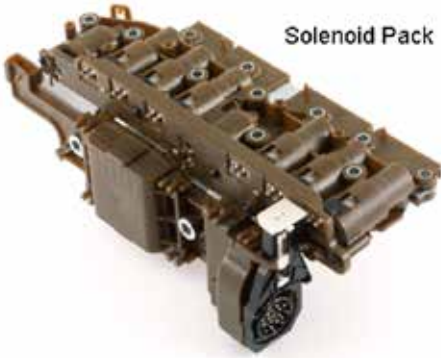
Valve Body

The valve body is the control center of the automatic transmission. It contains a maze of channels and passages that direct hydraulic fluid to the numerous valves which then activate the appropriate clutch pack or band servo to smoothly shift to the appropriate gear for each driving situation. Each of the many valves in the valve body has a specific purpose and is named for that function. For example the 2-3 shift valve activates the 2nd gear to 3rd gear up-shift or the 3-2 shift timing valve which determines when a downshift should occur.

The most important valve, and the one that you have direct control over is the manual valve. The manual valve is directly connected to the gear shift handle and covers and uncovers various passages depending on what position the gear shift is placed in. When you place the gear shift in Drive, for instance, the manual valve directs fluid to the clutch pack(s) that activates 1st gear. it also sets up to monitor vehicle speed and throttle position so that it can determine the optimal time and the force for the 1 - 2 shift. On computer controlled transmissions, you will also have electrical solenoids that are mounted in the valve body to direct fluid to the appropriate clutch packs or bands under computer control to more precisely control shift points.

Computer Controls

The computer uses sensors on the engine and transmission to detect such things as throttle position, vehicle speed, engine speed, engine load, brake pedal position, etc. to control exact shift points as well as how soft or firm the shift should be. Once the computer receives this information, it then sends signals to a solenoid pack inside the transmission. The solenoid pack contains several electrically controlled solenoids that redirect the fluid to the appropriate clutch pack or servo in order to control shifting. Computerized transmissions even learn your driving style and constantly adapt to it so that every shift is timed precisely when you would need it.



Solenoid Pack

Because of computer controls, sports models are coming out with the ability to take manual control of the transmission as though it were a stick shift, allowing the driver to select gears manually. This is accomplished on some cars by passing the shift lever through a special gate, then tapping it in one direction or the other in

order to up-shift or down-shift at will. The computer monitors this activity to make sure that the driver does not select a gear that could over speed the engine and damage it.

Another advantage to these “smart” transmissions is that they have a self diagnostic mode which can detect a problem early on and warn you with an indicator light on the dash. A technician can then plug test equipment in and retrieve a list of trouble codes that will help pinpoint where the problem is.

Governor, Vacuum Modulator, Throttle Cable

These three components are important in the non-computerized transmissions. They provide the inputs that tell the transmission when to shift. The Governor is connected to the output shaft and regulates hydraulic pressure based on vehicle speed. It accomplishes this using centrifugal force to spin a pair of hinged weights against pull-back springs. As the weights pull further out against the springs, more oil pressure is allowed past the governor to act on the shift valves that are in the valve body which then signal the appropriate shifts.

Of course, vehicle speed is not the only thing that controls when a transmission should shift, the load that the engine is under is also important. The more load you place on the engine, the longer the transmission will hold a gear before shifting to the next one.

There are two types of devices that serve the purpose of monitoring the engine load: the Throttle Cable and the Vacuum Modulator. A transmission will use one or the other but generally not both of these devices. Each works in a different way to monitor engine load.

The Throttle Cable simply monitors the position of the gas pedal through a cable that runs from the gas pedal to the throttle valve in the valve body.

The Vacuum Modulator monitors engine vacuum by a rubber vacuum hose which is connected to the engine. Engine vacuum reacts very accurately to engine load with high vacuum produced when the engine is under light load and diminishing down to zero vacuum when the engine is under a heavy load. The modulator is attached to the outside of the transmission case and has a shaft which passes through the case and attaches to the throttle valve in the valve body. When an engine is under a light load or no load, high vacuum acts on the modulator which moves the throttle valve in one direction to allow the transmission to shift early and soft. As the engine load increases, vacuum is diminished which moves the valve in the other direction causing the transmission to shift later and more firmly.

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Accelerating into the front straight at Virginia International Raceway.
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By The Numbers

A series on every Porsche model



Not content with blowing the minds of its faithful customers with its first RS road car, Porsche unveiled its concept for a new, more powerful, luxury-orientated version of the 911 at the 1974 Paris Motor Show – the 911 Turbo.

With a 3.0-litre flat-six motor and a single KKK turbocharger the new model produced 260hp delivered to the rear wheels via a four-speed manual gearbox. With a 0-62mph time of just 5.5 seconds and a 155mph maximum speed it was the fastest, most powerful Porsche road car to date, and its arrival coincided with the oil crisis.

With its flared rear-wheel arches, deeper front and whale-tail rear spoiler it was far from subtle, but Porsche's customers loved it and nearly 3000 were built. In 1978 it gained a bigger, 3.3-litre engine and more power (now 300hp), could crack 160mph and would continue in production until 1989.

Porsche also offered as a 911 Turbo Cabriolet and Targa model from 1987-88, as well as the 330hp 'slant-nose' coupé from 1983 through to 1989. And if you wanted the show without the go you could order Turbo-look Coupés, Cabriolets, Targas and Speedsters. Has there ever been a more blatant example of the excesses of the '80s?



During the 1980s Porsche hit upon a winning formula for its rear-engined sports cars, despite the best attempts by various management boards to try and kill it off.

As engine capacity rose from 2.2, through 2.4, 2.7, 3.0 and finally 3.2-litres, so did the power and performance of the numerous models and variants introduced. The first 911 Cabriolet arrived on the scene in 1983, and before this a whole of host models had come and gone: the 2.45 became the Carrera in 1974 with 2.7-litres and 210hp, and the 3.0 Carrera in '76 with 200hp (US emissions laws had strangled the flat-six a bit). The 3.0 SC arrived in 1978 with a feeble 180hp but redeemed itself in 1981 with the new 3.0 SC arriving with 204hp.

In 1984 Porsche delivered its latest 911: the 3.2 Carrera. With 231hp, a 6.1 second 0-62mph and a 151mph maximum speed the 911 was back on track. In 1987 the somewhat wayward 915 transmission was replaced with a slick Getrag C50 'box and this generation 911 saw out its final years able to hold its head high and compete with the more youthful opposition.

930 Turbo 1432/1500 1140 2993 260 253 6.0* 155

I-Series – 1975 to 1976: 1976MY – **Significant developments:** Bodies now zinc-coated, galvanised steel. Bosch K-Jetronic fitted to all models. Sportmatic now only three-speed, not four.

J-Series – 1976 to 1977: 1977MY – Wheelbase (mm): 2271, Length/Width (mm): 4291 (Turbo 4318)/1610 (Carrera 3.0 1652, Turbo 1829) – **Significant developments:** Sportmatic cars get brake servo assistance. 'Black-look' trim standard on Targas.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911	1360/1342	1120	2687	165	176	7.8	135
Carrera 3.0	1372/1354	1075	2994	200	188	6.3	150
930 Turbo	1432/1500	1195	2993	260	253	6.0*	155

K and L-Series (the SC) – 1977 to 1979: '78 to '79MY – **Significant developments:** Super Carrera combined old 911 and Carrera with 3.0-litre engine, all had servo-assisted brakes. Turbo 3.3-litre engine equipped with intercooler and tea-tray spoiler replaces whale-tail. **SC (New A-Series) – 1979 to 1980:**

1980MY – **Significant developments:** Revised ignition and camshaft timing results in 188hp SC model. Turbo gets twin-exit exhaust.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911 SC	1369/1379	1210	2994	188	188	7.0	141
930 Turbo	1432/1500	1300	3299	300	304	5.1*	162

SC (New B-Series) – 1980 to 1981: 1981MY – **Significant developments:** First year of 17-digit international chassis number. SC now runs on 98RON fuel. **SC (New C-Series) – 1981 to 1982:** 1982MY –

Significant developments: Limited edition 'Ferry Porsche' model goes on sale. Tea-tray spoiler option available for SC. **SC (New D-Series) – 1982 to 1983:** 1983MY – **Significant developments:** Cabrio rushed into production and launched following successful design study.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911 SC	1369/1379	1210	2994	204	189	5.7*	146
930 Turbo	1432/1500	1300	3299	300	304	5.1*	162

Carrera (New E-Series) – 1983 to 1984: 1984MY – Wheelbase (mm): 2271 Length/Width (mm): 4291 (Turbo 4318)/1610 (Turbo) **Significant developments:** Carrera replaces SC. Engine capacity climbs to 3164cc, Digital Motor Electronic engine management introduced as was the engine oil-fed chain tensioner. Turbo-look option adds 50 kilos and increases drag.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
911 SC RS	1398/1405	960	2994	255	184	5.0	159
930 Turbo	1432/1500	1300	3299	300	319	5.1*	162

Carrera New F-Series – 1984 to 1985: 1985MY – **Significant developments:** Carrera available with catalytic converter. Four-spoke steering wheel standard. **Carrera New G-Series – 1985 to 1986:** 1986MY – **Significant developments:** Sport seats now a no-cost option. Turbo-look track 1434mm front/1526mm rear.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
930 Turbo	1432/1500	1300	3299	300	319	5.1*	162

Carrera New H-Series – 1986 to 1987: 1987MY – **Significant developments:** Targa and Cabrio models available with Turbo engine. Slant-nose becomes an option. 915 transmission replaced by Getrag-built G50. Power hood standard on Cabrio. **Carrera New J-Series – 1987 to 1988:** 1988MY – **Significant**

developments: Celebration anniversary model available. Club Sport model weighed 50 kilos less, blueprinted engine pushed power to around 241hp. **Carrera New K-Series – 1988 to 1989:** 1989MY – **Significant developments:** 16-inch wheels now standard. Speedster introduced and available with either Turbo-look or flat-nose bodies.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62 0-60*	TOP SPEED (mph)
911 Carrera	1398/1405	1210	3164	231	209	5.6*	152
Club Sport	1398/1405	1160	3164	231	209	5.6*	156
930 Turbo	1434/1526	1300	3299	300	319	5.1*	162

964 (1989 – 1993)

1988 to 1989: 1989MY – Wheelbase (mm): 2271 Length/Width (mm): 4250/1651 – **Significant developments:** Launched in January 1989 with a new flat-six engine, suspension, brakes and numerous body parts, Porsche claim only 13 per cent carry over parts from predecessor. Carrera 4 split torque 31/69 front to rear. All wheel ABS and power steering standard, catalyst introduced. **1989 to 1990:** 1990MY – **Significant developments:** All pre-964 models now deleted. Carrera 2 introduced, Targa and Cabrio available for both Carrera 2 and Carrera 4 models. Tiptronic available on C2. Both Cabrio and Targa 50 kilos heavier than coupé equivalents. **1990 to**

Editor's Notes

Robert Rainer, Editor



Not much space left, I look at that fact as a positive. This is the busy season for us, and I hope you are out there enjoying your car. Last month, we had a members event, that was really kind of cool. There was a great exchange of ideas and interest. I also lead a drive to the outer bank this



1991: 1991MY – **Significant developments:** Rear drive, 3.3-litre 320hp 964 Turbo introduced complete with 'Cup' design mirrors. **1991 to 1992:** 1992MY – **Significant developments:** Stripped-out Carrera 2 RS launched – the first RS since 2.7 Carrera RS in 1973 – and proves a hit for those who like their 911s raw. 381hp Turbo S model available to order (80 built). **1992 to 1993:** 1993MY – **Significant developments:** Speedster introduced, rear-wheel drive only and based on Cabriolet for US market. 3.6 Turbo production begins in Jan 1993.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62	TOP SPEED (mph)
Carrera 2/4	1379/1374	1350/1450	3600	250	228	5.7	162
Carrera 2 RS	1379/1380	1250	3600	260	240	5.3	162
Turbo	1442/1448	1470	3299	320	332	5.0	168
3.8 RS	1440/1481	1210	3746	300	266	4.9	168
Turbo 3.6	1442/1448	1470	3600	360	383	4.8	175

993 (1993 – 1998)

1993 to 1994: 1994 Model Year – Wheelbase (mm): 2272 Length/Width (mm): 4245/1735 (Carrera 4S and Turbo 1795mm) – **Significant developments:** 993 production begins in Jan 1994. Internal engine upgrades increase power and torque. Multi-link rear suspension is one of the biggest developments in the 911's history and transforms 993 into a more driver friendly sports cars. Four-piston brake callipers standard front and rear. Two- and four-wheel drive offered across the range in either Coupé or Cabriolet guise. **1994 to 1995:** 1995MY – **Significant developments:** Carrera RS introduced as is redesigned, all-wheel drive system for Carrera and Tiptronic S with steering wheel-mounted shift controls for automatic gearbox. New 408hp four-wheel drive, twin-turbocharged 911 Turbo is launched and includes a six-speed gearbox and hollow spoked alloy wheels.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62	TOP SPEED (mph)
Carrera 2/4	1405/1444	1370/1420	3600	272	243	5.6/5.3	168/162
Carrera RS	1413/1452	1270	3746	300	262	5.0	172
Turbo	1411/1504	1500	3600	408	398	4.5	180

1995 to 1996: 1996MY – **Significant developments:** VarioCam engines announced and up both power and torque; revolutionary sliding glass-roofed Targa introduced. Lightweight, 430hp, rear-wheel drive, homologation special GT2 launched. It's the most powerful and fastest 911 production road car ever built. **1996 to 1997:** 1997MY – **Significant developments:** 430hp Turbo S offered as run-out model with 450hp factory engine upgrade also available. Turbo-bodied Carrera 2S built alongside Carrera 4S, but two-wheel drive obviously. It's the last rear-wheel drive, air-cooled 911. **1997 to 1998:** 1998MY – **Significant developments:** An end of an era. Production of the all-wheel drive Carrera 4 and Turbo continues until July 1998 but when the last car finally rolls off the production line (a Carrera 4S) it marks the end of air-cooled 911 production after 35 years. The purists aren't happy, but it signifies a new dawn for Porsche.

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62	TOP SPEED (mph)
Carrera 2/4	1405/1444	1370/1420	3600	285	251	5.2	172
Carrera 2S/4S	1411/1504	1450	3600	285	251	5.2	172
Turbo	1411/1504	1500	3600	408	398	4.5	180
GT2	1475/1550	1290	3600	430	398	4.0	184
Turbo S	1411/1504	1500	3600	430	398	4.3	185

996 (1997 – 2004)

1997 to 1998: 1998 Model Year – Wheelbase (mm): 2350 Length/Width (mm): 4430 (Turbo & GT2 4435)/1765 (Turbo & GT2 1830) – **Significant developments:** All-new water-cooled, 3.4-litre VarioCam six-cylinder 'boxer' engines. Rear-wheel drive, six-speed manual transmission or five-speed Tiptronic S at extra cost. Traction control also available. Four-wheel drive Carrera 4 introduced at the end of the year along with Porsche Stability Management (PSM). **1998 to 1999:** 1999MY – stripped-out, 360hp GT3 introduced. GT1-based engine helps create most focused 996 to date. Additional cooling for radiator, gearbox and engine account for extra weight over standard Carrera 2. Available in 'Comfort' or 'Club Sport' trim, breaks Nürburgring Nordschleife lap record for a production car (8mins 03sec). **1999 to 2000:** 2000MY – the new 911 Turbo arrives. Twin-turbocharged, water-cooled flat-six with VarioCam Plus develops 416hp through four-wheel drive chassis. First 911 Turbo available with Tiptronic S. **996 – 2000 to 2001:** 2001MY – GT2 returns with 462hp, rear-wheel drive, Porsche Ceramic Composite Brakes and no PSM! Breaks production car lap record at the Nordschleife (7min 46sec).

MODEL	TRACK (f/r mm)	WEIGHT kg	ENGINE cc	HP	TORQUE (lb ft)	0-62	TOP SPEED (mph)
Carrera 2/4	1455/1500	1320/1430	3387	300	258	5.2	174
GT3	1475/1495	1350	3600	360	273	4.8	188
Turbo	1465/1522	1549	3600	416	413	4.2	190
GT2	1485/1520	1440	3600	462	457	4.1	197

New 996 – 2001 to date: 2002MY – **Significant developments:** Second-generation 996 introduced. Engine capacity grows to 3.6-litres, power increase to 316hp. Turbo's trip computer standard across range, as are



911 (964): 1989 – 1993

Two-door, two+two Coupé, Convertible and Targa. Rear-mounted six-cylinder air-cooled 'boxer' engine, rear and four-wheel drive. For a company that had very little left in the piggy bank and suffering from an economic and sales downturn, Porsche's engineers pulled off a remarkable achievement when developing the 964-series 911.

This latest 911 was '87 per cent new' over the model it replaced, and the big news surrounding the 964 was the increased capacity flat-six and the introduction of a four-wheel drive transmission. This resulted in the gearbox and rear final drive having two electronically-controlled wet clutches, limiting slip in both the centre and rear differentials. A torque tube connected the centre and front diffs. The torque split was 31:60 front-to-rear.

Joining the new C4 was a Carrera 2 Coupé, Cabriolet and Targa models, three Turbo variants: 320hp 3.3-litre, 360hp 3.6-litre, and a limited run 381hp Turbo S. The stripped-out 964 RS and limited run 3.8 RS were available from 1992.

Overlooked by many, the 964 offers an affordable entry into classic 911 ownership, although they require regular maintenance and some TLC.



911 (993): 1993 – 1996

Two-door, two+two Coupé, Convertible and Targa. Rear-mounted six-cylinder air-cooled 'boxer' engine, rear- and four-wheel drive. Argued by many to be the most beautiful 911 design of all, the 993-series cars are also the best engineered and, for many punts, the pinnacle of the model's achievement.

The last of the air-cooled 911s had it all: pace, grace and, for once, a bit of space. The entry-level Carrera 2 was all you ever really needed, but who could resist the appeal of the Carrera RS or, for the first time, the all-wheel drive, twin-turbocharged Turbo? For the seriously brave there was the GT2 and those after the Turbo look without the go could always opt for the Carrera 2S and 4S.

The 993 also saw the introduction of VarioRam (in 1996). This controlled the length of the engine's induction tracts, and at low and medium engine speeds longer tracts provided a fuller torque curve, while at higher engine speeds the shorter induction length delivered higher peak power outputs.

past weekend, and just returned. It was a blast. Look for that story next month. I also hope you find the info above entertaining. I found this in a magazine out of the UK, and I thought it as interesting. It will go through all of the porsche models ever made. I was kind of blown away by the sheer number of styles. Our friends in Zuffenhausen have been busy. There are some upcoming events that you should consider. Being that I am the editor, I can plug Summerfest. If I don't have enough to do, I took this one on as well. I believe I have a good weekend planed, and my fellow upstate club members look forward to hosting you all. All I can say is downtown Greenville is really a great place, and we will be in the thick of it. We will also make you jealous with how close we are to some great mountain roads and our incredible monthly Cars and Coffee that John our AD started five years ago. Well that is about all for this month. I do want to thank everyone for the wonderful positive feedback I have been getting. It makes it all worthwhile.





EXPLORE BLOWING ROCK DRIVE

June 3rd, 4th & 5th, 2016

HOSTED BY: TRIAD AREA PCA

WHAT: Relaxing drive up to Blowing Rock. We plan to form a caravan and drive the back roads through the foothills (with stops along the way) ending up at host hotel in the afternoon. Saturday group drive to Little Switzerland and beyond with group dinner Saturday night at Bistro Roca in Blowing Rock and return on Sunday. Plenty of sightseeing, shopping opportunities and other surprises!!!!

WHEN: Leave on Friday morning, June 3rd from Porsche of Greensboro. Participants should arrive NLT 9:00am for check in and drivers meeting. Coffee and pastries will be provided. Departure at 10:00am sharp.

REGISTRATION: \$25.00 per car with all proceeds being donated to charity. To register mail your name(s), address, model Porsche, and cell number along with check made payable to Carolinas PCA to Rick Huskins, 2333 Hickory Forest Drive, Asheboro, NC 27203. There is a 20 car maximum so get your registration in early.

ACCOMMODATIONS: Must make your own reservations. Event hotel is The Meadowbrook Inn in Blowing Rock. Telephone # 828-295-4300. Special club rate is \$156.72 for double occupancy or \$179.27 for suite and includes complimentary breakfast, reserved parking area and car wash site. Each person is responsible for the cost of their meals.

QUESTIONS: Contact Event Co-Chairman Bill Suite at (wrsuite@gmail.com) or 276-730-4075; or Rick Huskins (huskinser@hotmail.com) or 330-329-1185.



Driver's Education:

We're headed back to AMP in 2016!!!

By John Babinski



Back in 2012 a new track had just opened outside of the sleepy little north Georgia town of Dawsonville. And the Carolinas Region PCA DE program was one of the very first events they hosted. While the track was complete, much of the adjoining infrastructure was simply just drawings, dreams and promises. The little bit of infrastructure that was in place could best be described as “utilitarian”. But that track – WOW!! Per their website: “AMP’s main road circuit is a two mile long road course that was designed by Formula One track architect Hermann Tilke. The track consists of 16 turns and 141 feet of elevation changes throughout the course. Two famous corners have also been incorporated into the track: Spa-Francorchamp’s corner of Eau Rouge and the famous Carousel corner from Germany’s Nürburgring track.” I just remember it was smooth, technical, and challenging with major elevation changes. It’s a driver’s track where you’re always busy and always working to master the subtle nuances of each corner.

So now it’s 2016. We needed something on our DE schedule to fill the gap between our March and Sept DE events at CMP. We explored a number of possibilities - RRR, VIR, RA, NCCAR, the new Dominion track, etc. but ultimately decided that a return to AMP would be our best option. AMP has continued investing heavily in the track and the supporting facilities. What was once a series of shipping containers stacked up to make a timing and scoring tower has now become a fully functional multi story clubhouse with included timing and scoring tower, outdoor viewing veranda, classrooms, garages, and member areas. Porta-johns have made way for permanent bathrooms. The tiered mud and grass paddocks of old are now member garages and smoothly paved asphalt. A tunnel takes viewers beneath the track and over to “spectator hill”. The .85 mile go-kart facility with 43 feet of elevation change is in full service. They have installed a skid pad and “ice hill” for driver training programs. AMP was recently voted one of the Top 10 Tracks in North America by Road & Track Magazine. And the restrictive 92db noise limit of old has been upped to a much more realistic 98db making it even more inviting for a wider number of

participants. Watch this short video and you can see many of the recent improvements noted above. <http://tinyurl.com/jv26591>

One of the comments we oftentimes hear from first timers to this track after their first couple of sessions is “I’m not sure I like this



track”. We’ve come to understand their real meaning is “This is a tough track to master”. It takes multiple sessions and a good bit of seat time to become fully comfortable here. The elevation changes are dramatic, there are blind corners, and every corner has unique camber setups. Your hands and eyes are always busy. There’s no time to really relax. What always surprises me – but I’ve gotten accustomed to it – is those same people coming back to me at the end of a weekend and saying how much they really enjoyed the track once they figured it out.

Any track in July can be a bit warm, but we’re hoping that early July in the NE GA Mountain area will keep things more than tolerable. A quick check of weather statistics shows that Dawsonville has a historical average Low temperature of 62 and average high of 86 on July 9th. Pretty tolerable actually.

While the trek to AMP may be a bit of a haul for some of our members from the northernmost areas, there’s plenty to see and do in the Dawsonville/Dahlonega area that would make it worthwhile for an extended family weekend trip. There’s even a large selection of national chain hotels and restaurants within an easy 15 minute drive of the track to make your stay super convenient.

You say you just want more track time to make the trip worthwhile. You got it. We’re doing a 4 run group schedule to maximize track time. 2 student groups, a solo group and a super solo group with expanded passing. Still not enough? Hooked on Driving will be doing a DE event on Friday before us. You could add it on to get 3 full days on the track.

While you’re on track the family can be enjoying the



.85 mile long go-kart track at AMP. The elevation changes make it one of the most unique tracks in the country.

Dawsonville is recognized as the unofficial birthplace of NASCAR, and the Dawsonville Pool Room is “ground zero” for auto racing. It is a must-see for racing fans and history buffs. The casual, fun atmosphere is very comfortable, and the “Bully-burgers”, sweet tea, and hand-cut fries are legendary. The Pool Room is covered with racing memorabilia from Bill Elliott’s illustrious NASCAR career, and also features artifacts from the early days of auto racing, which originated with the North Georgia moonshine runners. Just down the street from the Pool Room and worth a visit to learn more about the many legendary drivers who came out of this area is the The Georgia Racing Hall of Fame.

For those more interested in shopping than track events how about a visit to The North Georgia Premium Outlets mall at the junction of Georgia 400 and Highway 53. With more than 140 retail outlet stores, it’s one of the largest designer outlet malls in North Georgia and it’s located right there in Dawsonville.

Dahlonega is just a short drive away and was home to the first major gold rush in the US. The historic Lumpkin County Courthouse on the square now houses the Gold Mining museum. For those looking to strike it rich you can do some panning for gold at one of the local mines. Did you know Dahlonega is known as the Heart of Georgia Wine Country and the Wine Tasting Room Capital of Georgia? It’s home to 12 wine tasting rooms and five wineries. USA Today even named Dahlonega the “4th Best Summer Weekend Escape”. Want to just enjoy a pleasant mountain drive? Got that covered too with multiple well planned routes including Georgia’s Dragon – The Suches Loop, the Brasstown Bald Loop or the Lumpkin-Union Loop. During those drives you’ll be able to stop and cool off at a few of the over 120 waterfalls in North Georgia. At the end of the day spend time in the quaint and historic downtown area offering boutique B&B’s and over one hundred shops, restaurants, and other local, small businesses.

Registration for our driver’s education event at Atlanta Motorsports Park is now open at www.clubregistration.net. As shown above, there’s something for everyone to do while visiting the Dawsonville area. On the track or off, it’s a drive well worth making. We look forward to seeing you on track.



Area Updates: APR 2016

Triad Area By Jerry Kilcrease



Meeting: Third Tuesday of the month at 7:00 PM
River Ridge Tap House, Clemmons NC
Contact Jerry Kilcrease, Area Director
triad-ad@carolinas-pca.com (336) 476-3120

The Triad Area PCA held the April 19th monthly meeting at River Ridge Tap house in Clemmons and there were 51 members and guests in attendance. We were pleased to welcome first time attendees Nick Johns, Tom Shields, Jim Prout and Steve and Teresa Sagraves. We recognized our primary sponsor Porsche of Greensboro's representatives Karyn Smith and Scott Owen and welcomed them to the meeting. The group joined in to sing "Happy Birthday" to Stan Simm and Dana Sebastian who celebrated birthdays during the month of April. They were also treated to a free desert. Kathy Boehm was the lucky 50/50 split the pot winner. Porsche of Greensboro donated two gift certificates to attend the Porsche Experience Center in Atlanta and they were auctioned off to the highest bidders. High bidders were Charles Branch and Wayne Capwell and the proceeds will be donated to charity. It was decided to split donation between YMCA Camp Hanes and the American Children's Home. Many thanks to Porsche of Greensboro for their continued support of the Triad Area PCA. We had a lot of discussion from attending events chairman and they passed along important details related to schedules and registration information. After the meeting ended several of the members moved outside to check out the Porsches as there was still a little daylight remaining. Thanks to all for attending and please join us again next month...and bring a friend.



UPCOMING TRIAD AREA EVENTS:

May 14th – (Saturday) – Porsche of Greensboro – LADIES ONLY –

Porsche of Greensboro has invited the ladies in the Triad Area PCA and the GIP's (Girls in Porsches) to attend a free luncheon at their dealership on Saturday, May 14th, from 11:00am to 1:00pm. There will be a light lunch served between 11:00am until noon. There will also be a demonstration from 12:00 to 1:00pm of the Porsche Cayenne's capabilities along with other interesting presentations. Please RSVP by May 9th to Karyn Smith of Porsche of Greensboro at ksmith@foreigncarsitalia.com if you plan to attend. There is a limit of 25 attendees so RSVP early.

May 21st - (Saturday) – Porsche Corral at The American Children's Home Annual Charity Car Show:

The Triad Area will host our annual Porsche Corral Charity Event in conjunction with the American Children's Home 18th Annual Car, Truck and Motorcycle show to be held on their campus in Lexington, NC. A flyer with complete details and registration information is located in this edition of Tobacco Roads. This is our 8th year hosting Porsche Corral so please make plans now to come out and support this event.



June 3rd-5th, 2016 – "Explore Blowing Rock Drive"

The Triad Area will hosted this event and Bill Suite and Rick Huskins, are the co-chairmen. See the "Explore Blowing Rock" flyer in this edition of Tobacco Roads for registration information and details.

June 24th-26th, 2016 – Roads and Rails Charity Drive -

Robert Van Camp, Charlie Massler and Emily Branch are working on the final arrangements of the 5th Annual Roads and Rails Charity Drive. This is a great trip where all proceeds go to YMCA Camp Hanes. See Roads and Rails flyer in this edition of Tobacco Roads.

Other Triad Area hosted events planned for 2016 are as follows:

July 9th – Three Area Drive/Dine/Car Show (Triangle/Sandhills/Triad)

July 30th - John Robinson Memorial Family Picnic/Shine & Show

October 1st – Oktoberfest – Porsche of Greensboro, Sponsor

December 6th – Christmas Party – Porsche of Greensboro, Sponsor

NEXT TRIAD AREA MEETING – TUESDAY, APRIL 19TH, 2016

The Triad Area will hold its next monthly meeting on Tuesday, May 17th, at the River Ridge Tap house in Clemmons. Our scheduled special guest speaker will be Roger Bear, Chief Marketing Officer for HI-REV Racing. Roger visited us last year and did a great job sharing racing information that included a live interview via website media with one of their drivers. You will not want to miss his presentation. We start socializing around 6:30pm and start our dinner business meeting at 7:00pm. Please make plans to come and join us....and bring a friend. Thanks, hope to see you then.



Metrolina Area by Laura Varney



Monthly Meeting: Third Wednesday of the month at 7:00 PM, see report for location. Contact Laura Varney Area Director metrolina-ad@carolinas-pca.com



The Metrolina March PCA meeting was held at the Waldhorn Restaurant in Pineville on March 16th. There were approximately 38 PCA members in attendance including new members and some members who have not been to a meeting in the past, so it was great to have new faces to our Metrolina Community. After dinner our 50/50 raffle raised \$185 for Second Harvest Food Bank, so we are off to a great fund raising year for this great

charity. On April 9th we had a good turnout for our Suspension/Alignment Seminar hosted by GMP Performance in Charlotte and lead by Quentin Boatright. Here are some of the photos taken that morning. GMP will be hosting additional sessions this year, so stay tuned to future dates and mark your calendar for their Open House - Saturday, May 7th - From 10am until 5. They will have vendors, product displays, raffles, and all the proceeds from the event go to Ronald McDonald House Charities of Charlotte. For more information visit their website at <http://www.gmpperformance.com/index.cfm?PG=detail&PID=236917> or give them a call. We are in the process of scheduling a Shine and Show breakfast event which will take place some time in June or July, so details and location will be announced in May.



Upcoming Events

May 18th - Our monthly meeting/dinner will take place at the Waldhorn restaurant in Pineville. Please let me know if you will be attending so I may provide them with a head count.



May 15th - Cars and Cappuccino will be held at Caribou Coffee located at 7804 Fairview Road <http://carsandcappuccino.com/> This event is held the 3rd Sunday of every month at 9 AM and we have quite a few members that enjoy this gathering.

July 24th: Drive to Raffaldini Vineyards which includes displaying some of our member's cars at the car show they are hosting, followed by a drive that our adjoining area director Michael Vittorio will map out for those who would like to explore a drive through the foothills. You can learn more about the Vineyard at: <http://www.raffaldini.com/>.

Please let me know if you have any questions and have a great day! Laura Varney Carolinas PCA - Metrolina Area Director

You'd like to try track driving but not ready to drive your own car?

Got a friend that would like to try this exciting sport?

Is your car in the shop but you don't want to miss the next track event at VIR?

Or, maybe you just want to try a different car?



TrackRentalCars.com has your answer. We currently have a selection of four Porsches: three 944's and one 968, all at VIR and ready for the track. And more are on the way!

Book yours today. Visit our website at www.TrackRentalCars.com or call: 855-869-1124



Hickory Area By Michael Vittorria



Meeting: Second Tuesday each month at 6:30 PM
Refer to Monthly Area Report for Location/Detail
Contact Michael Vittorrio, Area Director
hickory-ad@carolinas-pca.com

Our April 2 meeting was the first of three planned Saturday meetings to be held in conjunction with a Drive and Dine. Fifty-eight (58) Members attended, making this the best attended meeting in some time and suggesting that this could become a very popular format.

The meeting was hosted by our good friends at Porsche of Hickory who also provided a light breakfast of coffee and pastries.



Following a period of social interaction, our guest speaker, Phil Evans (son of Hickory Area members, Ruth and Phil Evans) gave an excellent talk about the sport of Autocross.

Phil is an avid "auto-crosser" and multi-year winner of his class - in a 356 no less! He provided a thorough description of the sport and how, in his opinion, it represents "a great opportunity to safely experience the capabilities of your Porsche in a way that just isn't possible on public roads". Phil provided a useful checklist of "to-do's" to help prepare for participation in an event as well as some insightful tips for how to score well. His comments were met with a good deal of enthusiasm and a number of really good questions.

The timing of his presentation (just prior to our upcoming May 1 Autocross event) was intended to encourage Members who haven't yet done an Autocross to give it a try. Judging from audience response, he certainly met this objective. Thanks, Phil, for a job well done!

Following our program, we held a brief drivers meeting in preparation for our departure to Raffaldini Vineyard and Winery. The drive and lunch was organized by Bob Futrell with assistance from Bryson Kiser. A total of 25 cars participated.

The weather couldn't have been better and Bob and Bryson mapped out a scenic and fun route through the



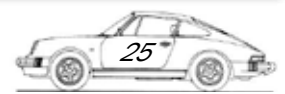
NC foothills into Wilkes County and the Swan Creek area vineyards. The winery set aside a special parking area for us that provided some wonderful photo opportunities.

A tasty buffet lunch was provided along with the opportunity to sample/purchase a variety of fine wines. Though the tour officially ended upon arrival at the winery, a number of folks spent the better part of the afternoon enjoying the weather, the scenery, the fellowship and, of course, the wine.

Many thanks to Bob, Bryson and everyone at Raffaldini Winery for making this such a special event. Our next Saturday meeting/Drive and Dine will be held on July 9 - details forthcoming.

Next Meeting:

May 14 (Tuesday), 6:30 PM ~ 9:00 PM:
Fourk Restaurant, 1410 4th Street Dr,
NW, Hickory, NC 28601



Triangle Area By Adam Morrison



Monthly Meeting: Fourth Tuesday of Month
Tobacco Road Sports Cafe
1118 Environ Way, Chapel Hill 27517
Contact Adam Morrison, Area Director
triangle-ad@carolinas-pca.com (336) 239-5735

This is my first area update since assuming the Triangle Area Director's responsibilities from Howard Wasserman last month. We are very pleased that Howard will continue to participate in Area activities. Howard's wisdom, leadership, and enthusiasm will continue to benefit our area even in an informal role. My goal is to continue the great work Howard has done for our area. Howard's replacement will never replace him; but I will try my best.

Last month we had a lot of activity. We hosted a tech session on brakes, conducted a drive and dine to an amazing BBQ place, and hosted a joint area membership event with the Triad Area.

March 26th Approximately 16 members attended a tech session at my home. At first the goal with the brake tech session was very ambitious to do a complete rebuild including stainless lines and painting. However the subject car was unavailable due to a coyote "incident". Fortunately we had volunteers who allowed us to demonstrate brake bleeding on a Cayenne and a 911S. Jim Ellis demonstrated some crazy jack stands that were also a hit. Afterward the fellowship continued as we ate lunch at a popular Mebane hot dog spot.



April 2nd we put on a membership event at the Burlington Shrine Club. We had two objectives in mind. First we wanted to attract some members we rarely see to come out to our event. Second we wanted to introduce or re-

introduce all the activities available to our members that we put on within the Carolinas Region. The event was successful on both counts. It was a good time for all. Special thanks to Martha Babinski for checking everyone into the event and Annie Hodges for catering. Your efforts made the event possible. I'd also like to thank Bill Scarbrough (Club Race), Brian Powell (Drive & Dine), Robert Rainer (Tobacco Roads), Kathy Boehm (Goodie Store), John Babinski & Shane Tisdale (Driver's Education), Wayne Capwell (AutoCross), and Karyn Smith & Henri Martin (Porsche Greensboro) for manning the several tables educating our participants.



April 3rd Mike Brooks and Howard Wasserman led our group on a beautiful drive to Pik-N-Pig in Carthage, NC. They divided the 16 cars into two groups. The BBQ was fantastic. I had the BBQ



sundae (and would recommend it). The Pik-N-Pig is unique as it has an airstrip attached to the property. Small aircraft were flying in while we were eating. We took pictures of the planes while the pilots took pictures of all the Porsches. J Thank-you Mike for helping us to make such wonderful memories.



Recurring Triangle Events:

Cars & Coffee: 8:30am every 3rd Saturday @ Panera Bread, Patterson Place. 3603 Witherspoon Blvd Durham, NC 27707.

Dinner Meeting: 6:30pm every 4th Thursday @ Tobacco Roads Sports Café. 1118 Environ Way Chapel Hill, NC 27517.

Future Events:

July 9th Third Annual Tri-Area Spring Dr, Shine & Show – Pittsboro, NC.

Join our MeetUp group to keep up with future Triangle Area events. <http://www.meetup.com/triangle-area-carolinas-region-pca/>

Adam Morrison

Triad-AD@carolinas-pca.com

336-239-5735



Sandhills Area By Marty Barrett



Meeting: Fourth Tuesday of the month at 6:30 PM
Rotating Location - See report below
Contact Marty Barrett, Area Director
Sandhills-ad@carolinas-pca.com

Shorter report this month....from the Bourbon Trail in Kentucky....then immediately back to Pinehurst for the Concours!

In March, we tried a new monthly meeting venue at Vito's Ristorante in Southern Pines and it worked pretty well.

No meeting in April, but back to Vito's on 4th Tuesday in May.
-- Marty



Upstate Area By John Budinich



Meeting: First Monday of the month at 6:30 PM
Quaker Steak & Lube
10 Chrome Drive Greenville SC
Contact John Budinich, Area Director
upstate-ad@carolinas-pca.com (864) 915-0011

brought out his Cayman Club Racer, Rick Gaan his 911 RSA and Scott Clark brought out his GT3. Porsche of Greenville completed the Porsche display by loaning me their brand new 2016 Cayman GTS. In the main area there were all manners of Porsches, including air cooled, water cooled and SUVs. If you area true car lover, you owe it to yourself to check out a local Cars & Coffee event soon.

The March meeting had 37 people in attendance and was hosted by Kim Paquette. I would like to thank Kim for filling in for me while I was traveling for business.

Kim reviewed Porsche of Greenville's reception for the new 911 held on Wednesday, April 6. A good number of Upstate Area members attended the event and there were many positive reactions to the updates to the car. Thanks to Porsche of Greenville for including the club in this fun activity.

The monthly Ladies Night Out is being suspended due to a lack of participation. Once things settle down between school activities, holidays and other conflicts, we will see if there is enough interest to start this gathering back up.

The Upstate Area and surrounding club members turned out in force at the March Cars & Coffee of the Upstate event. Cars & Coffee Upstate was celebrating its five year anniversary and had the largest turnout ever. Somewhere between 1,300 and 1,400 vehicles turned out to celebrate this milestone. Of those vehicles, over 70 Porsches were in attendance. There was a special display of 52 cars in the front of the event, showcasing the diversity of vehicles that make it out to Cars & Coffee on a monthly basis. In the display, Upstate Area Porsches were well represented, with 9 cars present. Michael Chen (Black GT2), Ed Macatuno



Upcoming Events:

The Outer Banks weekend getaway will take place April 28 through May 1. Robert Rainer has put together an adventurous outing that will include some great coastal roads, plenty of dining opportunities and even a ferry ride to some remote parts of the Outer Banks. Details for this event can be found on the Carolinas Region website.

The Appalachian Region is hosting the Appalachian Adventure at the Fontana Village Resort in Fontana Dam, North Carolina, August 12 through 16, 2016. If any Carolinas Region members would like to participate, they said we are more than welcome.

Check out the details for the event on the Appalachian Regions website at apprca.org.

The Upstate Area is making plans for hosting Sommerfest this year, on August 26 through August 28. Details will be posted as soon as they become finalized. Mark you calendars for a great weekend in the Greenville area.

Reminder: Upstate Area of Carolinas Region PCA Email Distribution List

We are now using Mailchimp for local, Upstate Area communications. We want to

capitalize on this opportunity to build a more complete and accurate distribution list as well. This effort will ensure we reach all Upstate Area members, both existing and new, who are interested in receiving updates on local activities. Complete instructions on how to opt in to the email distribution list are in last month's Tobacco Roads in the Upstate Area report. If you have any questions, feel free to email me at upstate-ad@carolinas-PCA.com.

Upcoming Upstate Area Meeting

Monday, May 2 at 6:30 pm at Quaker Steak & Lube, Greenville, SC

Monday, June 6 at 6:30 pm at Quaker Steak & Lube, Greenville, SC

July meeting is TBD due to conflict with July 4th holiday

As always, I would ask members to keep the ideas, suggestions and feedback coming to upstate-ad@Carolinas-pca.com as they can only help to improve our meetings and activities throughout the year.

John



(Red GT3) and Donny Albrecht (Yellow GT4) were positioned as the German flag. Jim And Barbara Phillips displayed their '58 Speedster and '74 Mexico Blue 911 Carrera 2.7. Jimmy Martin



Porsches & Parts

Notice: Caveat Emptor. Neither the Carolinas Region-PCA nor the Editors (Carolinas Region) endorse, guarantee or have, in any way, screened, verified or attest to the veracity of the following ads. The Carolinas Region makes no warranties, express or implied, with regard to any advertised goods or services. Buyers should practice due diligence.

Additional information on all classified ads can be found by either contacting the seller or checking our website for photos at www.carolinas-pca.com.

Porsches

1997 911 C2 Cab: Arctic white with navy blue top and interior, 67,000 miles, bone stock with motor sound and turbo twist wheels. VIN WPO-CA2994VS341694, price \$60,000. Contact: James Hecht, Cornelius, NC email: jhecht@bellsouth.net Phone: 980-253-5963

1995 968 Coupe: Summer yellow(only one!) and tan interior, 108,000 miles. Car is last 968 imported to the USA and was featured in May 2003 Excellence. VIN WPOAA2964SS820318. Daily driver and sometimes DE car but still a looker! Price \$15,000. Contact: James Hecht, Cornelius, NC email: jhecht@bellsouth.net Phone: 980-253-59

1999 Porsche 911 (996) Carrera Cabriolet: \$35,000. Two-owner car with 13,500 original miles. 100% original with clean Carfax. Black with Black Leather Interior and Black Top, Porsche Cassette with Remote CD Player, HI-FI Sound, Three Spoke Steering Wheel with Crest, Power Seats with Memory and Lumbar, Limited Slip with ABS, 18" Multi Spoke Wheels with Crest Caps, 6 Speed Manual Shift, Cruise Control. The car has been serviced at Porsche of Greenville annually for the past 5 years with the major service completed within 200 miles. Contact: Frank Morelli, Greenville, SC email: morelli.fd@gmail.com Phone: 864-252-5088

2006 Cayman S: VIN is WP0AB298X6U784255. 3.4 rebuilt 30,000 miles back w/ arp rod bolts, water pump, AOS, ceramic IMSB, all other parts factory. Had spun rod bearing when purchased. Professionally modified to allow future IMSB change in the car (if ever needed). 6 spd. 97,000 miles now. 2 KEYS!! No tracking. Remote 6 cd changer. Heated seats like new. No chafed spots. Auto dim rear view. \$24,000. Contact: John Ogle Jr., Conover, NC email: sepiantony2@bellsouth.net Phone: 704-685-2895

2008 Porsche Boxster Limited Edition: 46,500 miles - \$25,250. Current CarFax. Dealer receipts. Contact: Ron Larkin, Charleston, SC

email: lvmyks@gmail.com Phone: 206-713-3773

Parts – Parts Cars – Projects

4x 18" Turbo Wheels: 4 turbo wheels 18" MILLEMIGLIA Cup Wheels made in Italy, fair condition 18 x 8.5 front, 18 x 10 rear, 4 Michelin sport cup tires mounted, 2 weekends front, 1 weekend rear - \$600. Contact: Gary Hediger, Greenville, SC email: ghediger@hedigerconsulting.com Phone: 864-787-5961

Roll bar for 996NS: DAS Bolt-in roll bar for 996NS, flat black powder coated \$700. Contact: Gary Hediger, Greenville, SC email: ghediger@hedigerconsulting.com Phone: 864-787-5961

Wheels and tires: \$585 for the set of 4 rims and snow tires. Spare wheel set bought with 2013 BMW 1-series. Rim model 7Jx17 EH2+ IS47 alloy. No curbing or other damage. Perfect condition. Tires are 3 winter seasons old, good tread Goodyear Eagle Ultra Grip Run Flats 205/50 R17 89H. Shipping not included in price if it's required. Contact: Richard Hermann, Mooresville, NC email: rd_hermann@yahoo.com Phone: 314-853-3171

Wanted

Articles for Tobacco Roads... Let us know about your car, your drives, your technical knowledge. Editor@carolinas-pca.com

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2016 ROADS AND RAILS. REGISTRATION NOW OPEN



JOIN US FOR THE 5TH ANNUAL ROADS AND RAILS CHARITY FUNDRAISER THIS JUNE 24-26.

THIS YEAR'S EVENT WILL BE ONE OF THE BEST AS WE JOURNEY ON THE POTOMAC EAGLE SCENIC RAILROAD IN WEST VIRGINIA AND SEE THE AMERICAN BALD EAGLE IN ITS NATURAL HABITAT.

TO REGISTER AND FIND OUT MORE ABOUT THE EVENT GO TO:

WWW.CLUBREGISTRATION.NET AND CLICK ROADS AND RAILS



SEATING IS LIMITED



Carolinas Region Summer Fest Returns to Greenville SC. August 26-28



Friday Night

Saturday

Sunday



Historic Event Hotel



Shine and Show at Cars and Coffee



Carolinas Region Autocross



Friday Night Social Night



Photo & Gimmick Rally with lunch at the Pisagh Inn



Explore Downtown Greenville



Saturday Night Dinner and Social

Anytime you see this, Click to Register



Register at <http://clubregistration.net> and search for Sommerfest.



Amelia Island Concours

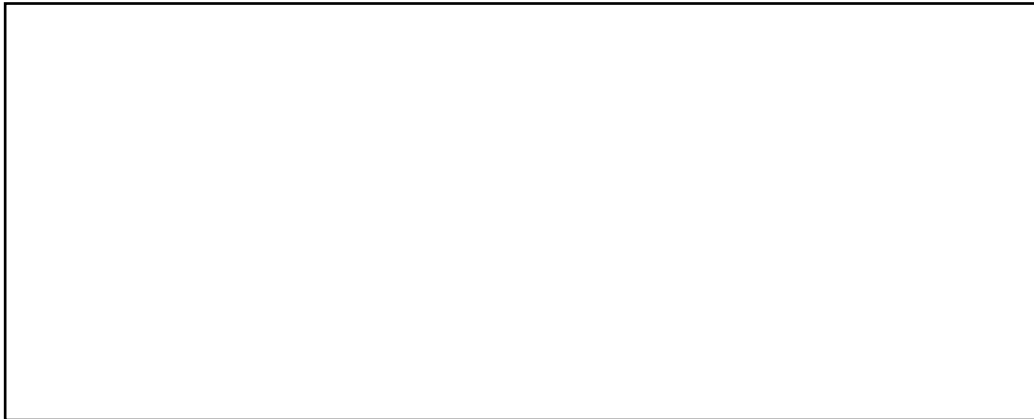
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