

# MAGNETO



## HISTORIC FREDERICKSBURG REGION Antique Automobile Club of America

May 2024

Volume 67, #5

### 2024 OFFICERS AND COMMITTEE CHAIRS

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Terry Thomann	Legislative Chair
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Ben Schooler	Chaplain
Doug Makin	Historian

### MONTHLY MEETINGS

Monthly meetings of the Historic Fredericksburg Region AACA will continue on the 4<sup>th</sup> Tuesday each month, except December, starting at 7 pm at the Fredericksburg VFW, 2701 Princess Anne St, Fredericksburg. Members will be notified of any changes. The next meeting is June 25, 2024.

### MEMBERSHIP

We are always looking for new members. If you or someone else you know is interested in joining our club, please come to one of our membership meetings. For more information on membership, please contact our Membership Chairman Wally Hunt at 540-424-0212.

\*\*Please call Connie (540-993-7941) with input for the **Sunshine** Committee.

## **SPRESIDENT'S MESSAGE**

The month of May is moving right along. Our Ball Park outing was well attended Tuesday evening. The head count was 43 with the minimum needed being 40. Great weather, food and fellowship. Thank you to Doug and Nancy for organizing this event. Remember we have one more on tap in August. As I write this the weather looks like a maybe for Saturday at Normandy Village. Fingers crossed. Mayo and the HFFI folks have put a lot of effort into the event show casing the early 50's homes in that area.

On the subject of social events. We have a JUNE CLUB SOCIAL scheduled for Saturday, June 29. Drive and BBQ starting at Tractor Supply on Route 3 west. Gather at 10 AM for drive to Gordonsville and the BBQ Exchange. Park and socialize and eat. Rain or shine, old car or newer. Just plan to be there. David and J are coordinating the event. David Armstrong @ 540-419-3888 for questions.

There have been two meetings at the Fair Grounds with good attendance. I know some of you have been unable to attend either on site gathering but this should be no problem. Wally and Robert will go over details at our Tuesday meeting. This is an all-hands event! And most important it should be a good time for all. Remember this is a new venue and new opportunity to reach out to the car community. There are lots of AACA eligible cars in our community that are not participating in the traditional AACA events and lots of car folks who can and would appreciate the effort to learn about auto history and preserve cars as manufactured. And we have the opportunity to see and appreciate other facets of the car hobby. This venue provides lots of opportunities and I hope we can begin to capitalize on what HFRAACA can offer the car community.

The next opportunity to meet at the show site is Tuesday 28<sup>th</sup> at 2:00pm. Mark will be marking the show field. This should be pretty quick. If you read this before meeting time, feel free to show up. Otherwise, Mark has it covered.

Most important: Please plan to arrive at 6:30 or as soon thereafter on show day. More details Tuesday evening at the meeting.

Reminder that we are assisting the Buzzards Breath Region tour June 9-13.

VFW Friday social/dinner June 21. Dinner available at \$10.

As always keep an eye on the Face Book Page for the latest news.

See you Tuesday 7:00PM. VFW

**MAGNETO.** It is a great way to reach Fredericksburg's most active antique automobile enthusiasts. Yearly advertising rates are \$2.00 per square inch: a typical business card is \$16.00; \$40.00 for a quarter page; \$80.00 for a half page; and a full page is \$100.00 per year. All types of ads are accepted. Contact the Magneto Editor to inquire about advertising. HFRAACA members are entitled to 4 months free.

## MONTHLY MEETING 23 APRIL 2024

Meeting was held at the VFW Hall in Fredericksburg. There were 35 members and three guests in attendance. Charlie Bachini submitted a membership request during the meeting.

The meeting was called to order at 7:02 PM by John Garnett, President.

**Minutes:** The March 2024 minutes were approved as published in the Magneto.

**Treasurer's Report:** Mark presented the treasurer's report.

### Presentation, Trooper Treakle

#### Fredericksburg Region

Trooper Treakle offered to talk to our club about laws associated with cars – inspections, tags, and anything else we would ask.

He is not a mechanic; Trooper Treakle is a state trooper. He was previously K9, now in charge of state inspections. There are only a handful of dealerships that have their own inspectors. Cars 25 years or older don't require inspections. However, if stopped, the car would need to pass inspection for the year of the vehicle.

Antique Tags – DMV doesn't make it easy. Not very nice to the troopers either. If he sees the same car every day, he'll probably stop and ask why the driver is using it every day. There is a distance limit – 250 miles for pleasure driving, or to and from a show.

Weight limit – Carey asked about antique tags for trucks. 10,000 lb rule does not apply to commercial vehicles (eg. trucks and tow trucks). You can tow an antique truck on an antique trailer with an antique truck.

Refurbishing plates – you are not supposed to do so. However, you must have 2, and while you aren't supposed to do so, no one would really know. Wally noted that if you register specific tags, DMV wants to see the tags. AACA judges everything on the car, including the plates.

Farm Use – Trooper Treakle provided a checklist for inspection.

If you have property in two states, and an antique car is registered in another state, the VA trooper said if it comes back when he runs the tag and if it's valid, he doesn't have a problem. He would worry if the tags do not come back as valid.

Enjoy your cars, be careful, if a trooper stops them, they should pass the inspection for that year. As long as you are not driving them crazy or intoxicated, the trooper will be OK.

Restrictions on Right hand drive cars – as long as they meet federal motor carrier standards, you are OK. Last year, there were many of the mini-trucks throughout VA that were issued tags. It was discovered that they didn't meet federal emission standards and DMV recalled their modern tags. Antique tags are OK for these cars that are over 25 years.

Some other topics covered included:

- Rebuilt – vehicle disclosure statement

- Inspection code
- Farm equipment
- Antique license plate certification form
- Does VA have any “slow moving” vehicle requirements? He is not aware of any.

The trooper told of a recovered a 2016 Lexus 300, found out from a safety and emission inspection. The inspector noted that the VIN for the emissions didn't match the VIN on the car. The daughter purchased the car and didn't realize that the VINs on the car didn't match either. They had replaced the windshield VIN and peeled the sticker off the door and replaced it. They sold the car across state lines. The police repossessed it from unsuspecting buyer.

Stolen cars are a big item these days. Some notes include: If it's not a brand-name key fob, it might be that the correct key fob is hidden in the car and another key fob is provided with the car. Air tags might help track a stolen vehicle.

Dead registration stickers – troopers can stop you on the 1<sup>st</sup> day of the 4<sup>th</sup> month.

Tinted windshield is a primary violation, unless you have a waiver from DMV for medical reason. You won't pass inspection with tint on your windshield. Other windows are a secondary violation. Even still, no darker than 35% even with a waiver.

At the end of the day, Trooper Treakle's goal is highway safety.

### **Todd Brown from Fredericksburg City**

Mr. Brown came to talk with us about doing a downtown car activity. Based on his history, he loves car shows and respects our cars and car shows. He would like to offer a partnership with the city to have some of our cars at some of the parks or events to enhance the city recreation downtown. They would like to work with us to have some cars on display at times to make their events better and/or a park more inviting for a day.

Are there any existing events looking for cars? If there are, they have not been organized through the city office.

Mr. Brown's discussion isn't for a particular show. But more for access to have cars when something is going on. Mr. Brown notes that this is actually about both – a bit more like a partnership with the car club.

Mr. Brown sees working with our club as more of a partnership, which would alleviate some of the fees and work associated with the show. His worked with the club last year to move the show to Riverside Park and understands why we are at the Fairgrounds this year. He would like to see the cars back downtown, even if it's not a big show or event.

He noted that they don't waive fees, but he is seeking to create partnerships in favor for the taxpayers. Members noted that fees for parades are cost prohibitive for individuals and a full fee per car is too much.

Mark Irving noted that we might be more willing to participate in a car display, not a show that includes judging and awards and all. Club members noted that we might be more willing to participate in events, to enjoy old cars and events, but not return the car show to

downtown. Todd Brown notes that the businesses are not clambering to get the cars back to downtown.

John Garnett thanked Mr. Brown for his presentation tonight and noted that we are not divorced from Fredericksburg and there may be an opportunity to work together for displays in the future.

**Sunshine Report** – J noted that Jane Shelton has continuing health issues, but she has a new doctor and things are looking up. A card or call would be appreciated (for any or all).

Venables – Bill is here this evening. Millie has been up and down with improvements and fallbacks. A card or call wouldn't hurt.

Laura Lowe had heart surgery; Jimmy has been ill.

Hank – J talked with Hank; his situation will not go away, he is able to live with it under restrictions. He is staying the course.

Lauman is here; Frances has had some problems. She was in the hospital and is now at a rehab center. She will be discharged to home on Saturday with home health care.

**Activities and Social events** – J suggested a monthly activity as a club.

- David Armstrong and Nichole are expecting a second child in October. Dave would like to arrange a meet up / tour and food in June.
- Powell has offered access to his river house in July for a cookout.
- J is asking for club members to sign up for a month to cover an event. Let J know what month and what you'd like to do.
- June 21<sup>st</sup> – Steve Blancard has offered to host the club at the VFW for dinner (\$13/person) – starting around 4:00, dinner is served at 5:00. Rain date is the following week (6/28)

## **Old Business**

**Scholarship** to a student in the region. We received one application; the youth reached out to John before the due date and submitted an application. Club moved and voted for the scholarship to be awarded to this student.

**The bricks** have been installed.

**Ball Game** - Doug spoke about the May 21<sup>st</sup> ball game, \$21 per person. Game is at 7, gates open at 6. Funds are due by May 11<sup>th</sup>. Doug is collecting the money for tickets. The club is obligated for 40 tickets.

**HFFI Mid Century Tour** - Mayo – HFFI information is in the Magneto. MidCentury Tour – American Legion Building will be open from 10-4 for tours. HFFI will be providing free house tours for Veterans, including a group of disabled veterans. They will supply hot dogs, chips, and poppies. This is Memorial Day weekend.

## **Activities –**

Activities build the club and give us footing for recruiting. Wally Hunt encourages people to step up and help out. Wally will also try to continue with “pop up activities” as well.

In the **Magneto**, Sam is doing great with keeping up with all the activities. Attending other events is a great way to drum up attendance at our show. Wally has cards to hand out to invite others.

June is a busy month for us. Our show, tour, Richmond, AACA Eastern Divisional Tour, and more.

With our car show, we have a few holes in the job list. Please sign up to help. Registration booths are air conditioned. Paper copies of registration forms are available tonight. Michael Sizemore is sending acknowledgements of registration. Wally said the fairgrounds is normally available from 10-2 if the club wants to go walk around. Any later would require special arrangements. Thursday, May 9<sup>th</sup> looks like a good date, see the fairgrounds at noon. Meet at the main office. 5/24 Is the registration deadline date for the show. This show should be less labor intensive than in the past. Parkers, judges, needed. Friday, some setup will be needed to mark the field.

Question – regarding registration for Richmond and ODMA. Wally will help.

Terry has trophy examples – we will be using plaques this year for 1,2,3 best makes and kids choice.

As of tonight, Michael has approximately 25 registrations for our show. He will also let Mayo know of fashion show entrants.

Our show still needs partnerships. We have corporate partners (about 4) and marketing partners (\$50 for a spot at the show). Wally has forms for the partnerships.

**HFRAACA Tour** - June 2<sup>nd</sup> – tour starts at 0900 at Classic Car Center – tour to Northern Neck with a few stops.

**Divisional Tour** – help (2 people at each stop) is needed at the various stops. Registration is limited to 50 cars. Email Susan Etmeyer at National for registration.

Ben closed the meeting with a prayer.

Meeting adjourned at 8:20 PM.

*From Wally:*

We would like to Welcome the Classic Car Center of Fredericksburg, VA as our Presenting Corporate Partner for our upcoming Antique Automobile Meet on 1 June. The Classic Car Center has been a longtime supporter of HFRAACA. We invite you to attend the Cars and Coffee on the last Saturday of each month from 8 am to 10 am.

## **2024 HFR CALENDAR**

### **MAY**

28 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.

### **JUNE**

1 67<sup>th</sup> Annual HFR Car Show, 8-3, Fredericksburg Fairgrounds.

2 HFR Tour, start from Classic Car Center, 9-2, Fredericksburg.

8 55th Richmond AACA Car Show, 8-3, St Joseph's Villa, hosted by Richmond Region.

9-13 AACA Eastern Divisional Tour, Fredericksburg, sponsored by Buzzards Breath Regn.

15 Car Show to end Alzheimers, Spring Arbor, River Rd, 10-2, Fredericksburg.

16 Father's Day Classic Car Show, 9- ?, Colonial Beach.

16 49<sup>th</sup> Sully Antique Car Show, Sully Way, Chantilly, VA, sponsored by MAFCA.

21 HFR dinner, 5 pm, at Fredericksburg VFW.

25 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.

29 HFR Barbeque Outing, 10-?, BBQ Exchange, Gordonsville, VA.

29 Cars & Coffee, 8-10, Classic Car Ctr, Lee Hill Dr, Fredericksburg.

### **JULY**

23 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.

27 Cars & Coffee, 8-10, Classic Car Ctr, Lee Hill Dr, Fredericksburg.

### **AUGUST**

13 Nationals game & HFR dinner, 6 pm, VA Credit Union Stadium, Fredericksburg.

17 7<sup>th</sup> Annual Cooking for Autism Car Show, Aviation Way, Stafford.

22-24 Special AACA Eastern Fall Nationals, Hampton, hosted by VA Peninsula Region.

27 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.

31 Cars & Coffee, 8-10, Classic Car Ctr, Lee Hill Dr, Fredericksburg.

### **SEPTEMBER**

21 48<sup>TH</sup> Edgar Rohr Memorial Car Meet, 8-3, Manassas, hosted by Bull Run Region.

21 9<sup>th</sup> Annual 65 Roses Car Show, 9-3, Spotsylvania HS, Courthouse Rd.

24 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.

28 Cars & Coffee, 8-10, Classic Car Ctr, Lee Hill Dr, Fredericksburg.

## OCTOBER

- 2-6 Fall Carlisle, Carlisle Fairgrounds, Carlisle, PA.  
8-11 AACA Eastern Fall Nationals, Hershey, PA, hosted by Hershey Region.  
22 HFRAACA meeting, 7 pm, Fredericksburg VFW, 2701 Princess Anne, Fredericksburg.  
26 Cars & Coffee, 8-10, Classic Car Ctr, Lee Hill Dr, Fredericksburg.

## OTHER

Other local car shows can be found in the AACA publication Antique Automobile, at [www.capitalcruisin.com](http://www.capitalcruisin.com), at [www.carclubcouncil.com](http://www.carclubcouncil.com), & on the HFR Facebook page.

**2024 AACA Eastern  
Divisional Tour**  
June 9-13 ▪ Fredericksburg, VA  
*From Our Founding Fathers to the Final Frontier*

**TOUR HIGHLIGHTS**  
Fredericksburg Battlefield ▪ Chatham Manor  
Ferry Farm (Boyhood home of George Washington)  
Udvar-Hazy Air & Space Museum  
James Monroe Birthplace ▪ Menokin  
National Museum of the Marine Corps

**HOST HOTEL**  
Holiday Inn and Conference Center  
20 Sanford Drive, Fredericksburg, VA 22406  
540-368-8000, Code: AAC  
\$139 per night, includes breakfast for two people

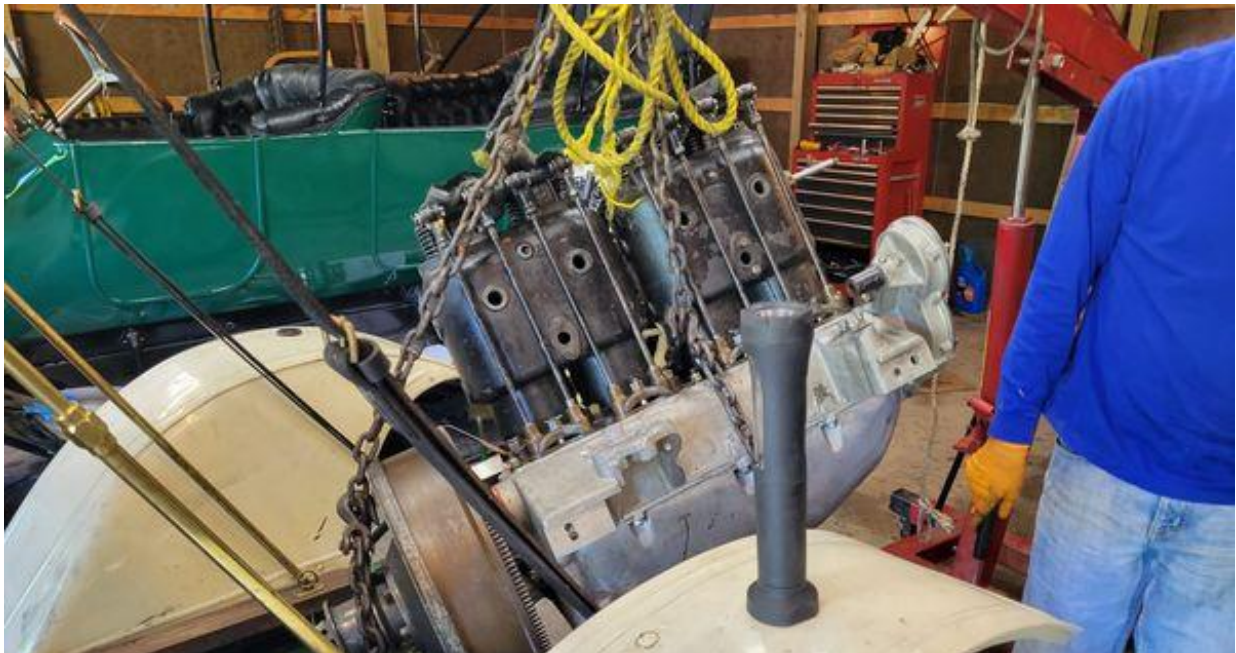
**TOUR CHAIR/REGISTRATION**  
Charlie Steffy  
407-261-9318  
Chas1963@hotmail.com

 **Hosted by the  
Buzzard's Breath  
Touring Region** 



## Member Activities

Angie adjusting toe-in on her T; Brian removing dad's 1910 Buick engine.



## **Precision Engineering – the Overlooked PCSV**

**By Neil, the Magneto's *Mystery* Author and Contributor**

### Article 24

Throughout the multi-year restoration of the 1999 Hyundai Elantra that I have been undertaking, there have been many occasions when diving into the electricals and mechanicals where I have been struck by the *brilliance* of the engineering that led to the production of the car. As it happens, this also occurred when I decided to dissect the entire emissions control system and ended up renewing much of it. In doing that work, I always had a curiosity about how the *Purge Control Solenoid Valve (PCSV)* was constructed and operated – and what caused the PCSVs to fail on other owners' cars. When the Elantra went in for its painting recently, I finally had some time to solve the curiosity. So, I went to a regional junkyard (and pulled the entire wiring harness assembly that contains the emission system's *Canister Close Valve* wiring) and pulled the PCSV. Back home, I performed an autopsy on the PCSV, slicing it straight through its center.

The autopsy revealed the PCSV to be highly complex and intricate, construction- and operation-wise - with stunning *precision engineering* ... across more than 13 components, all of which would have required high creativity and careful planning, execution, and integration. While studying and analyzing the components and assessing the PCSV in the larger context of the entire emissions control system, there was so much complexity that I was driven to document the findings (to be able to mentally manage all the information and for others who may be undertaking similar outyear restorations and preservations). The result proved to be my 8<sup>th</sup> paper and book that I have authored on the Elantra. Excerpts from the book are included below. As can be seen in the *Autopsy excerpt*, the various internals and sequences of their functions have been identified. And, the intricacies of their designs, sizes, fittings, and compartmentalization stand out. The additional details of how exactly the PCSV works are beyond the scope of this article, but suffice it to say they are *mind-stretching*. And, not simple.

As to what causes the PCSVs to fail over time, there are various external factors – including upstream charcoal canister and metal piping issues – and various internal factors such as coil windings fatigue, seal fatigue, jet-blockage, diaphragm plate obstruction, vapor-swirling *arc-slit* blockages, and improper energizing and filter screen over-cleaning (by uninformed owners and probably technicians).

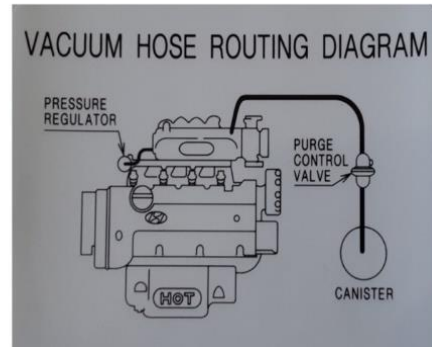
Finally, when one considers the science, aerodynamics, electrical current and magnetism theories, thermal dynamics and requirements, industrial mining and drilling, metallurgy and chemistry, physics, manufacturing, production, integration and assembly, testing, and logistics that enabled and went into the engineering of this little and often-overlooked PCSV, it is *mind-awakening* and *reverence-inspiring*. An *intellectual journey* - well-travelled by the countless engineers who pioneered early combustion and then engines and automobiles ... and *joyfully wandered* by this “yours truly” member of the Antique Automobile Club of America ... and I suspect many or all of you.



## 1999 Hyundai Elantra

### Purge Control Solenoid Valve (PCSV) Analysis

For the Purposes of Facilitating  
Diagnostics  
and  
AACA Preservations and Restorations



Autopsy Excerpt of Hyundai's Second Generation Elantra's *Purge Control Solenoid Valve*

### How it works - An Autopsy View

The PCSV is a highly complex, intricate device. An autopsy reveals the internal components.

1. It has a hard plastic inlet port;
2. a tiny mesh filter screen (encased in a hard plastic seal) for capturing and preventing any debris from the vapor canister, metal vapor piping, and interconnecting rubber hoses from entering the valve;
3. a steel shaft in the center of the valve with a precision-drilled straight-through *vapor-passing channel* (jet) which is slightly larger in diameter than a sewing-needle;
4. coil windings that are encased in a sealed-off hardened plastic enclosure, 5, (that prevents any vapors getting past the enclosure) and that wrap around the central shaft;
6. a metal plate that is *magnetically-attached* to the bottom of a magnetized upper bracket, 7, [which has two built-in 180° *arc-slits*, 8, (which are explained on page 7)] and *sits above* the top of the vapor-passing channel hole as well as above the coil windings; this plate has a small somewhat-offset-from-center *hole* that matches the diameter of the vapor-passing channel; this plate also has a sealing pad, 9, on its top that seals against the bottom of the top bracket's two 180° *arc-slits*;
10. a pliable circular rubber seal that the top bracket sits in and a smaller pliable rubber seal, 11, at the beginning of the outlet port that *together* seal the outlet end of the valve to prevent the IM's constant vacuum pull on the outlet port from causing any internal PCSV leak-through;
12. a venturi-carved channel in the beginning of the hard plastic outlet port for accelerating and swirling the vapors (with the rest of the outlet port, 13, being a smooth channel).





**Robert Aftel**  
Certified Appraiser

540-809-4419  
raftel@i-van.org

www.aftelconsulting.com  
www.i-van.org

**Troy Dillard**  
President/CEO  
troy@dillardalarm.com

(540) 898-0771  
www.dillardalarm.com

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1440 Central Park Blvd Suite 210  
Fredericksburg, VA 22401  
Office: 540-681-1500  
Fax: 540-681-1611  
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**THE HUNT TEAM**  
WALLY HUNT, REALTOR  
Cell: 540-424-0212  
whunt@huntteamva.com  
LIZ HUNT, REALTOR  
Cell: 540-424-0213  
lhunt@huntteamva.com