



VAIRifiable News

Corvairs Rule the Road!

CVCC once again has a great turnout for the Veteran's Day Parade



Once more the CVCC was extremely well represented at the annual Veteran's Day Parade in picturesque Gordonsville. It was a beautiful day for a parade! Ray Davis made emblems for each person's car that thanked veterans from all branches of service for their contributions and it also had the name of the driver and any military background. While driving with the window down and waving to the onlookers, I overheard one man telling another that the Corvairs come out in support of this parade every year. It's good to know that we are noticed! Representing CVCC were the following individuals;

Richard Bethard ('63 Monza Convertible), Frank DuVal and Del Patten ('66 Monza 4 Door), Rex Buel, ('65 Convertible Corsa) Alan White, ('65 Monza) Garland Ray ('64 Monza), Jeff and Cherie Roadcap ('65 Monza Convertible), Steven Wright ('64 X-Tra Large Corvair...Impala SS), Ray Davis, ('62 Rampside) Chris and Julie Carter ('64 Monza) and Larry and Marty Laughon ('65 Corsa Convertible). By the time all of our cars drove by, the kids felt enough time had elapsed that Santa must be next!

--Alan White--

Calendar

Dec 6: CVCC Christmas Party at the Whelans 2pm (Details in Newsletter)

March 13-15: Spring Warm-Up, Myrtle Beach, SC

May 29-31: Virginia Vair Fair, Lexington, VA. Host Howard Johnson Hotel. 540-463-9189. \$59/night: Mention Corvair

June 24-27: CORSA International Convention, Knoxville, TN. Host is Knoxville Marriott, 865-594-4155, \$110/night: Mention Corvair



PHYLLIS LANNING: MORE THAN JUST A PRETTY FACE!



Photos: Photos of Wade's undercarriage washing rig (as suggested by Phyllis).

Yesterday I told Phyllis that since today was going to be warm that I wanted to powerwash the bottom of the '67 Monza again. I did it before by jacking up the sides and laying on the ground, but missed a few spots and areas. So she says why don't you do it on the trailer so you don't have to lay on the ground.

You'll see the results in the attached pictures. The tunnel pan is still off from rebuilding the shifter tube, and this time I took the heater hoses off and main heat duct out so I could clean better. The car had been driven somewhere on a red dirt road and was a nuisance to work underneath with the dirt falling down in my face.

I'll have to give Phyllis bonus Corvair points for the suggestion.

Wade



MORE ON ANTIQUE TAGS

RAY DAVIS & WADE LANNING

In the event you missed it, there was an article in the September newsletter that suggested if we use antique license plates on our antique vehicles, we should have a copy of the Virginia Code in the car. The link to that section of the Code is below.

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+46.2-730>

If you do not know it, for autos with antique tags with limited use the insurance is much less expensive and you (in most cases) set the value of your car, within certain guidelines.

Note that when using license plates made for the year model of your car, the number (and letters if applicable) can not be

currently in use on another vehicle, either as an antique or non-antique. You can go to the DMV website to make sure the numbers are not in use already or go to a DMV branch office. I recently licensed my '67 with antique tags using an NOS set of 1967 license plates I got on eBay. But before I bought them I checked the DMV website to make sure the number weren't already in use. Mine are A699-706, which I choose because they had a 6 and a 7 in the numbers to go along with my 1967 Corvair. I also find that plates that start with a letter followed by numbers, such as mine, are usually not in use

whereas a series of numbers only are often being used.

After you buy plates, DMV also wants you to bring them in when you register them so they can check the numbers again and to make sure they are not damaged. One time cost to register as an antique is now \$50 (used to be about \$10). I bought my plates from a guy in Goochland that had them on eBay for \$50.

The other option is to use plates provided by DMV, either the black plates with block style numbers or the yellow plates. If you get them from DMV you can personalize the numbers and/or letters you want, provided

HOW IT'S MADE: DIFFERENTIAL NOISE

DAVID ROBERTSON

Until very recently, I worked at the machine shop that makes several items for the major Corvair parts vendor. One of the parts I made was the 'nose' or 'snout' for the manual differentials (the catalog calls it a "Throw out bearing shaft"). Before I forget everything, I thought you might be interested to find out what is involved in making such a part.

If you've ever put a clutch in a Corvair, you're familiar with what often happens when trying to separate the engine from the transaxle. Unlike what is found



on just about all other manual transmission or transaxle equipped vehicles, the long Corvair input shaft is not captive, IE, the shaft can slide right out once the engine is pulled away. I wish the engineers had put a spring-loaded circlip on the input shaft where the front splines mate to the main drive gear, similar to the way most front wheel drive cars' CV axle inboard joints are retained to their transaxles. As the late Percy White used to say when discussing what should've been done, "But then, they didn't ask me".

Unless you're either very lucky or very good, the input shaft often has a nasty habit of



staying engaged with the clutches' splines or hanging in the pilot bushing and tries to follow the engine. Sometimes, you can sneak a pair of long-handled Channel Locks into the small gap between the bellhousing and differential and free the shaft from the engine. Other times, since we usually work under less than ideal conditions, with the engine teetering on a single hydraulic jack and everything at a bad angle, the input shaft does follow the engine. Now, two bad things can quickly happen: the input shaft can get bent and/or the differential nose can crack. Several times, I've had the input shaft come out of the clutch OK, only to have the diaphragm fingers of the pressure plate catch the shaft as the engine is moved, lowered, or tilts unexpectedly. Do not let this happen to you. Because of the input shaft's extreme length, any force that pushes up or down on it is greatly multiplied. Even a slight bend in the shaft will cause run out and vibration that will greatly reduce pilot bushing and input shaft seal life.

The stock nose is a very nice cast iron piece that was machined inside and out to fairly exact dimensions. Unfortunately, after machining, the wall became quite thin, and

being cast iron, is somewhat brittle. It can only tolerate a limited amount of force being applied by a weighted down input shaft before it cracks or even chips. The stock nose was also designed for only one input shaft seal, which is prone to leaking. Because of these shortcomings, a stronger replacement, machined out of solid steel and designed for two seals, is a big improvement.

The replacement nose begins life as a 3" long chunk ('billet') of 2 3/4" diameter steel. The steel comes in long bars, usually 10, 12, or 20 feet in length and must be cut into individual pieces on a semi-automatic saw. Usually the order was for 100 pieces, so the operator would cut 100 pieces, plus a couple of extras, in case of problems.

These billets would then go to a CNC lathe. The first time I made them on a big, old, very heavy duty machine made



by Wausino. Later, I used a lighter duty, but faster and more user-friendly Hitachi-Seiki. Both are 'two axis' machines, where tools are moved up and down (X axis) and into and out of the part (Z axis). Both are 'turret' machines that hold multiple tools. The turret acts something like a revolver pistol, bringing each tool into position one at a time, much as the revolver brings one bullet into

DIFFERENTIAL NOISE (CONT)

position for firing. The part itself spins, but otherwise doesn't move.

Unlike a manual lathe, on which you tighten the three holding jaws onto the part by hand using a tee-shaped wrench, CNC lathes use an hydraulically-operated chuck that the operator actuates via a foot pedal. There are two types of jaws: hard and soft. Hard jaws are factory-shaped, hardened steel jaws with diamond shaped teeth similar to those of a vise. They are made for holding raw stock for 'part-off' jobs where the machine makes a relatively small part from a bar of material (metal or plastic), the semi-finished piece is cut-off (parted-off), the bar is pulled out a certain length from the chuck, and the cycle is repeated. For individual parts, such as the noses, soft jaws are used (soft jaws are also used for certain part-off jobs, when you don't want to damage the outside diameter of the material). Soft jaws are made of soft steel and come as rectangular blocks that must be bored to the correct depth and diameter to hold the part securely without damaging it. With the part securely clamped in the proper soft jaws, we're ready to start the first of four steps it will take to make a finished nose.

In this first step a 'rough' turning tool is moved into the spinning part, cutting away material with each successive pass, until the rough outer shape of the nose is achieved. But, because of the length of the part and the force the turning tool will exert as it cuts ('tool pressure'), the part needs extra support.



To provide this support we'll have to employ a 'center'. To do so, the turning tool 'faces' the part (cuts the front of the part smooth and even), then a small, stepped, tapered drill called a 'center drill' makes a cone-shaped hole dead center. There are two types of centers: dead and live. A dead center is basically a cone-shaped piece of steel with a base for mounting. It's used for support on

manual lathes at fairly low speeds. It doesn't spin with the part, so friction can cause damage to the part at higher speeds. On a live center the cone-shaped portion spins in precision bearings and can tolerate extremely high speeds and won't damage the part where it contacts it. The center we'll use



on the CNC is live and has a tapered base that plugs into a movable 'tailstock' on the machine. On the Wausino, the tailstock was not power-operated. When it was time to bring the center into position, I had to reach way back into the machine, pull the heavy tailstock forward on its slides close (but not too close!) to the part, lock it into place with two eccentric bolts, actuate the hydraulic ram in the tailpiece to bring the center itself into the drilled hole, run the turning routine, then retract the center, unlock the bolts, and push the tailstock back out of the way. It was exhausting. In comparison, the Hitachi was a breeze to use. Its tailstock was powered and all I did was press some buttons.

To finish the first step, a special type of drill, called a 'New Point', drills half way through the part and we remove the part from the jaws.

Now, repeat step one 100 or so times.

For the second step, we'll have to put an adjustable 'stop' into the chuck and use a different set of soft jaws. These will be 'through-jaws' without a step in them. The stop will determine how far the part sticks out. The part will go in backwards this time and the jaws will be gripping the section we turned to size in the first step.



The same New Point drill we used before will finish drilling its hole. Then, a very special type of drill, called an 'insert drill', is used to rough out the radius and counter bore that points into the differential. This is an easy job for the insert drill. Our insert drills were made by Mitsubishi, were very expensive, and used two carbide inserts to do the actual cutting. These drills are capable of cutting holes through tough material without the time-consuming 'pecking' routines (drilling a bit, backing out, drilling a little more, etc.) required by a regular drill. After the hole is drilled through, the programmer can back the drill out, move it up slightly in x and bore the hole larger. You can repeat the process many times to make the hole extremely large if need be. These drills are very versatile, but are also capable of making some of the worst noises you'll ever hear. Should an insert chip, you'd better back the drill out quickly or bad things will happen!

After the insert drill finishes, a boring bar enlarges the hole the New Point drill made to the specified size. This will be the running clearance for the input shaft. Because of its length and the twisting forces it

must absorb, the input shaft deforms or 'whips' under certain load conditions, so it needs some clearance. The exact size of this bore and holding it consistently will be very important in the next step. The bar also finishes the radius that the insert drill roughed out.

Now, repeat step two 100 or so times.

Step three is the most critical step, where we'll either make a good part or junk. The stop comes out, and another set of soft jaws are used to hold a special mandrel. The expandable section of the mandrel where the part will be held must run true. The mandrel is not perfect, so even if you have freshly-bored, almost perfect jaws, trial and error shimming at the jaws and tapping with a soft mallet are required to reduce TIR (total indicated run out) to .001" or less where it matters.

Whenever you must use an expanding mandrel such as this, the size of the bore you're holding and how much you tighten the mandrel's tapered center bolt will effect the part. A badly undersize bore may not fit at all. An oversize bore may not tighten enough and slip. Any movement of the part on the mandrel can, and probably will, ruin the part. Even a little oversize can require excessive tightening that can cause unwanted taper in the finished bores and the turned outside diameters in this step.

We have to make sure the mandrel is spotless (any tiny metal chips can cause big problems), the part must be solidly seated against the mandrel's shoulder,

and the center bolt must hold it securely and be close to the same tightness as on all the other parts. The boring bar will do its thing first. It cuts the front bore, which provides clearance for the big splines of the input shaft. We have $-.002"$ to $+.002"$ tolerance here, which is no problem. Then comes the tricky one, the smaller bore where the split-ring retainer and the seals reside. We have to hold $-.0005"$ to $+.0005"$ tolerance here. This is not usually a problem for these machines, but variations in the tightness of the mandrel's bolt or bore-to-mandrel fit can throw off the finished bore size.

Next, the turning tool faces the part, determining how far the nose will stick out of the differential. We have $-.005$ to $+.005$ in length tolerance. Then it turns the finished outside diameter where the throw out bearing (clutch release bearing) will ride. We have $-.001"$ to $+.001"$ tolerance here. Stay to the high side because we'll polish the part with emery cloth and Scotch-brite, later. The turning tool then travels up in a curve shaping the part before turning the large outside diameter that serves as the press fit for the nose to the differential case. We have only $-.0005"$ to $+.0005"$ tolerance here.

Lastly, a part-off tool is used to face the very back edge of the nose where it will butt up against the rear pinion bearing's pressed-in race. The blue print gives $-.005"$ to $+.005"$ tolerance for this thickness, but I always tried to hold it as closely to the $.460"$ ideal as possible, since this effects the

pinion bearing's positioning and pinion to ring gear contact.

Before removing the part from the mandrel, we polish it, but don't get carried away or we might go undersize on the outside diameter.

Now, repeat step three 100 or so times.

Finally, we're finished at the lathe and the parts go to a CNC vertical mill, where an end mill is

used to cut oil grooves into the backside where it butts against the pinion race. That operator has to deburr edges of the grooves and then the parts are sent off for plating.

Now you know how differential noses are made and how much work goes into each one. I used to think they were expensive, but after making them the price seems cheap.

CHRISTMAS PARTY AT THE WHELAN'S!

It's the most wonderful time of the year! It's the annual CVCC Christmas Party! This year the festivities will be hosted by Paul and Tina Whelan at their home in Powhatan at 2pm on Saturday, Dec 6. If you are going, you should have RSVP'd by now. The address is:

3567 Maidens Rd
Powhatan, VA 23139

Phone #'s are:

H) 804-598-7369

C) 804-363-0081

Please bring your favorite side-dish to share. The menu is as follows:

Cubed Cheese and Cracker tray

Fresh Fruit tray

Veggie Tray & Hummus

Asparagus & Asiago Cheese wrapped in Filo,

Chicken Piccata Bites

London Broil Tray with Costanz

Rolls / Horseradish Sauce

Ham Biscuits

Mashed Potatoes

Caesar Salad

Drinks: to be determined

Desserts: To be determined but are rumored to include apple dumplings!

See you there!



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1967 CORVAIR DEALER BROCHURE

WADE LANNING

I was recently looking at the 1967 Corvaair dealer brochure which features a red Monza with a red interior on the cover. The picture of the cover car is included with this article. Do you notice anything unusual about this '67? Right! For those with a keen knowledge of Corvairs know that red interiors were not available in 1967. Inside the brochure is a close-up picture of a Monza instrument panel, which also depicts a red interior, a scan of which is also included in this article. The only three interior colors for the Monza in 1967 were black, blue and gold. A scan of the brochure page that shows the interior colors is included here as well.

I asked Corvaair historian Dave Newell about this. He said due to the lead times to take pictures and print the brochures, Chevy would use a previous year car and touch up the pictures if needed. He did not know if they had planned to offer red as an option or simply overlooked retouching the pictures for the 1967 brochure.

1967 Corvairs were externally the same as 1966's, so apparently they used a 1966 for the cover photograph and probably the dash. Note that red was an interior option for 1966. If you look closely at



the cover car, it appears that the steering wheel has a narrow bar from the center to the outer rim. In 1967 they changed to a steering wheel that had wider bars, further indication that a 1966 was used for the cover photo.



As far as the dash picture, it may be hard to tell in the scan included here, but in the original brochure it appears to still have the 1966 style knobs instead of the wider and flatter 1967 knobs, except for the gear selector which has a 1967 style knob in the brochure. It also looks to have a 1966 style dash



pad, however it does have the silver bar under the light and wiper switches with "LIGHTS" and "WIPERS" embossed, as well as the "BRAKE" idiot light in the gas gauge bezel, both of which first appeared in 1967. So they apparently touched up a 1966 dash picture to look like a 1967 except for the most of the knobs, color and dash pad.

One thing did occur to me was that Chevy had planned to stop Corvaair production after the 1966 model year, but continued it on instead, possibly as result of Nader's book. So I wonder if they made the decision to make 1967 models so late in 1966 that they had to use these pictures in place of taking new pictures for 1967. Just speculation.

I don't have all the other year model brochures, but I did look at a few and didn't notice any errors in those issues. I was especially glad to see that the 1960 brochure didn't copy any 1959 Corvaair features over, such as those 4-cylinder engines or other rare features we always hear about....

Top Left and Above: Photos from the 1967 Corvaair Dealer Brochure showing the nonexistent Red-on-Red combination for 1967
Left: Actual interior colors available for 1967

VAIR FAIR HELP NEEDED!

The 2015 Vair Fair is scheduled to be held May 29-31 in Lexington, VA at the Howard Johnson Hotel. We need volunteers to staff the following positions:

Registration: This involves manning the registration table to hand out registration packets and t-shirts, take registrations at the door, take up money for additional registrations.

Hospitality: Keep food on the tables, take up money for door prize tickets, draw door prizes and post results.

Corvair Games: We will get the games but we need someone to head this up and others to staff individual game stations. We don't intend to use cars this year so it shouldn't be nearly as time consuming or stressful.

Rally: We need people to man rally stations for participants to draw cards for their poker hand.

Anyone who can help who has not already committed to helping in an area, please let Alan White know by emailing him at

dralwhite@yahoo.com



December Birthdays

2- Debbie DuVal
5- Frank Farmer
5- David Riggle
7- Collins Barnes
13- Paige Morgan
13- Khloe Davis
15- Smitty Smith
18- Barbara Herwald
19- Garrett Davis
21- Gerry Novarro
23- Denise Barnes
27- Jordan White
28- Wade Lanning

THE CARS ARE THE STARS!

In last months newsletter, Ray Davis wrote an article describing his involvement with a movie being filmed in Culpeper, VA. On Nov. 8, several other CVCC members became involved in the movie as well.

The initial scenes shot that involved Ray were supposedly filmed at an upscale prep school. While Ray's Rampside was considered nice enough for that footage, the rest of us were relegated to a scene shot at a poorer public school where the kids drove cars that weren't quite as fancy.

Rex Buel, Larry and Marty Laughon, Alan White and Richard

Bethard all supplied Corvairs for the scene.



We were told that if we dressed in 1969 vintage clothing, we might get a scene as an extra as well. That explains the ridiculous garb that I am wearing. Really, I don't normally dress that way! It turns out that they didn't want us, only our cars!

ALAN WHITE

The day turned out to be a cold and brisk one and so to be out of the wind, we all commandeered a school bus both to find a seat and to get out of the cold!

All was not lost. We each received \$50 for our troubles and a certificate showing our car was used in a movie!



Above Left: Actors rehearsing a scene.

Above: Rex and Alan in costume.

Central Virginia Corvair Club
Minutes
November 8, 2014

President Frank DuVal opened the meeting at IHOP, Zion Cross Roads with the following members present: Rex Buel, Julie Carter, Christopher Carter, Marty Laughon, Larry Laughon, Del Patten, Bruce Bettis, Pat Bettis, Wade Lanning, Phyllis Lanning, Jeff Roadcap, Cherie Roadcap, Alan White and Ray Davis.

Frank indicated the Goat's Milk Tour on October 25-26 had been cancelled due to a lack of interest. He noted several members had just come from the Gordonsville Veteran's Day parade. The next event will be our annual Christmas Party at the Whelan's at 2 PM on December 6.

Wade had a non-GM part from his "new" 65 Corsa and asked the members to ID it. Bruce guessed correctly that it was a window lock. It was used to prevent the vent window from being opened.

Alan White presented a detailed overview for the 2015 Vair Fair in Lexington. The Howard Johnson Inn will be the location and the room fee will be around \$69 plus tax. They provide a full breakfast. The registration fees will remain about the same as 2012. We do not need to make money, but we also do not need to lose any. The schedule will be pretty much the same as in 2012. Del will assist Wade with registration. Rex is in charge of pizzas Friday evening. There will be a BBQ lunch Saturday noon. Folks are on their own for dinner. Frank will be in charge of the hospitality room. Everyone should begin collecting raffle and door prizes. An "out of state" category was discussed for People's Choice. Should there be an "all around" award similar to ??? David will be asked to be in charge of vendors. Should we have an Econo Run in conjunction with the rally? The rally will be on the Blue Ridge Parkway going North. Alan, Jeff and Cherie will run the Rally. Rex will be chair of the People's Choice. Alan will look into ordering T-Shirts. (Yes Del, he will order a 3X for you.) Someone is needed to volunteer for the Corvair games. It was suggested they not be in a Corvair (car). Volunteers will be needed for these mentioned committees and others. Volunteer or be assigned.

There being no further business the meeting was adjourned.

Respectfully submitted

Ray H. Davis
Secretary/Treasurer

CLASSIFIED ADS

1961 rear air grill, rare, used but in VGC. Has vertical bars. Will fit 61-64 (not wagons). \$40
1962-1963 rear air grill, hard to find in decent shape, used but in VGC. Has horizontal bars.
Will fit 61-64 (not wagons). \$50
David Robertson 804/266-7295 corvairdave@msn.com

I am searching for a good home for my 64 Monza Convertible. Owned since 1966 but I cannot drive a manual transmission due to a recent stroke.
Red, black interior and top. Generally very good condition. Garage kept. Hate to sell her but cannot justify having her and want someone to enjoy the car.

If you know of anyone that would be interested please have them call me at (540) 292-2558 or contact me by email.

Richard Dickerson
Staunton, VA

Two Convertibles For Sale: '64 4 speed, good driver, top is bad. '63 automatic, runs, trans leaks, rear window is bad \$4,000 for BOTH.

Doug Workman, 20273 Spotswood Trail, Elkton, VA 22827. Home 540/298-8900 Cell 540/820-3318

My brother and I have our father's 1965 Corvair that we would like to find a good home for. Daddy had owned the car for many years before he passed away in 2012. He loved Corvairs and bought his first one in 1963 that I learned to drive on.

The car we now have is in excellent condition...2 door Monza, beige color, with about 9500 original miles. It has been garage kept for the last couple of years, but was regularly driven before then. The car is located in Chase City, VA.

Please let me know if your club members would be interested in this nice car; or, perhaps how I could go about advertising it in your newsletter. My phone # is (804) 472-2797 so feel free to call or reply to this note.

Thanks so much,
Paul Billings

SERVICE: Russell Davis can provide your specialized Corvair tool and machine needs. Machining heads to reduce compression to allow use of regular gas (below left) and carb high performance modifications are just a couple of areas of expertise. He makes special Corvair tools including bearing greasing tools, headlight bezel tool (Below left), harmonic balancer puller that can be used without lowering the engine and EM axle bearing pullers. See more pictures, details and order online at <http://bluechipmachineva.com/index.html> or call Russell at 757-642-0665 to discuss your needs.

