

# NORTHERN VIRGINIA CORVAIRS



**HOT  
AIR  
MAIL**



NVCC, CORSA Chapter 220

Volume XXIII, Number 11

November 2006

## CHAPTER CHATTER

By A. J. Paluska, Jr

Ohms, amps, volts, AC, DC, positive, negative, ground, multimeter, load, resistance! If you don't recognize these terms, or are confused by them, and you missed the October meeting, you missed out on the basics of electrical system troubleshooting. Mike Puglisi had been having a mysterious power drain every time he shut down his 1961 500 coupe. If the car sat for a while, he had no juice to crank it over, necessitating a jump-start. The obvious culprit was a short circuit that drained the battery after the engine was shut down. Knowing what the problem is and finding the source is a big problem, especially if you don't know the first thing about electricity or a car's electrical system. Mike fell into that category. Not to fear though, as there are a few NVCC members that know their way around a multimeter and can find the source of a short in no time at all.

The chief electrician, Curt Shimp, aided by L. D. Brent started at the obvious places and soon determined that the drain was about 12.56 volts. That is quite a lot for a car that is off and standing still. Further work located the problem and a fix was accomplished.

It seems that one of the heater hoses (with its metal skeleton) was touching the electrical connection at the starter. That was drawing the 12 volts itself. Curt duct taped the connection and that problem was solved. Further investigation revealed that the system was still losing .06 volts. That was traced to the ignition switch, which Mike will replace. He understands that the .06

drain will take quite a while to kill the battery, so he should be okay in the meanwhile.

Mike also wanted to get the car running better so it was timed and the carburetors were balanced. She runs like a dream now and Mike is exceedingly happy. Now he can drive the car to other venues than Darrin Hartzler's house in nearby Bethesda. Mike says thanks to everyone for their help on Saturday. It will be nice to keep some charge in his battery for a change.

Don't forget that there are two activities scheduled for November. The first is the Fall Tour on Sunday, 5 November 2006. The plan is to meet at Steve McLeod's, have a cookout brunch from 11 - 12:30, then caravan to Mount Vernon. NVCC will buy burgers, dogs, and sodas. Members are asked to please bring a side or dessert. Cost for Mount Vernon is \$12 (there may be an update to pricing). The second event is the regularly scheduled meeting at Greg Walthour's on Saturday, 18 November 2006.

October's meeting was also a farewell for two of our long-standing members. L.D. Brent has decided to permanently relocate to Florida and this was his last meeting with the NVCC crew. Also Daniel Goldberg is leaving soon for active duty with the U. S. Army as a Judge Advocate General Corps lawyer. He will eventually be stationed at Fort Sill, OK. We wish both of them good luck in their futures. I have a hunch that we will see them both again.

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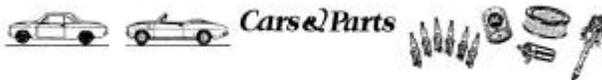
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The Northern Virginia Corvair Club (NVCC) publishes the HOT AIR MAIL newsletter monthly as a service to its members. NVCC is a non-profit chapter of the Corvair Society of America (CORSA). The \$10 annual dues are payable January 1st, to "Treasurer, NVCC" at the address herein. A prorated amount of \$5 is accepted for periods of less than six months. All other correspondence and submissions can be addressed to the Secretary/Editor. Newsletter expiration date is three months beyond dues anniversary if they are not current. Original material appearing in the HOT AIR MAIL may be reprinted in other non-profit publications with appropriate credits.



**\*\*\*AUTOMOTIVE CLASSIFIED\*\*\***

**NVCC Calendar**

**63 Greenbrier:** Powerglide, white/blue exterior with blue interior. 115, 000 miles, runs well, good condition, no rust through, a few rust spots. Manuals included. \$2500.00. Call Jeremy at (703) 964-6999 (4/06)

**63 Convertible:** Red with good body and nice paint. Asking \$2500.00, condition 3 to 4 on scale of 5. Contact Jim at (540) 465-5066. (9/06)

**64 Convertible:** 150 HP Turbo. New engine, extra engine and transmission. \$3500 OBO. Call Monk Fleming at (703) 339-7272. (4/06)

**65 Monza:** 110 HP, 4 speed needs, some work, body not too bad, rockers have some bondo, trunk is solid, battery tray and rear quarters not too bad. Asking \$1,950 or best offer. Located in Highland Springs (near Richmond, Virginia). Call Stewart: (804) 326-0919 or Cell 690-9000. (12/05)

**66 Sedan:** 110 HP, 4 speed, professionally restored in 2004, Winchester, VA. 51K miles, \$5500. Call Bill at (540) 665-1837. (9/06)

**Parts/Miscellaneous For Sale**

**Late Model Parts:** 1, new 195/15-50H BF Goodrich Euro Radial T/A: \$25. Free 65 front cross member. Call Curt Shimp at (540) 955-1516. (2/06)

**Parts:** From our club's 65 coupe parts car: Right hand door, 4 Monza Wheel disks. Call Venice Cox at (703) 791-6517. (1/05)

**Parts:** Darrin Hartzler has parts to clear out this spring. Does anybody need either a transaxle or a complete PG with transaxle? How about a late model 3 speed manual transmission? If so, let him know. Very cheap. (301) 365-7332 (2/06)

**RARE HISTORICAL ARTIFACTS LOCATED!**

Take this unusual opportunity to purchase a piece of Corvair history. Available for a limited time. Genuine 2003 Virginia Vair Fair T-shirts. A steal at \$8.00, two for \$15, in sizes S, M, L, XL. Hurry, this rare find won't last for long! Call Curt at (540) 955-1516.

**Corvair Parts:** Large parts lot available. Will not be sold separately. For information contact Kim at [kimpjasonp@juno.com](mailto:kimpjasonp@juno.com) or [whitetiger@hereintown.net](mailto:whitetiger@hereintown.net).

**5 November 2006:** The NVCC Fall Tour conducted by Curt Shimp. Meet at Steve McLeod's for a cookout brunch from 11 - 12:30, then caravan to Mount Vernon.

**18 November 2006:** The regular NVCC meeting for November at the home of Greg Walthour.

**9 December 2006:** The regular NVCC meeting, elections, and Christmas party hosted at the home of Ron and Karen Tumolo.

**Fall Tour:**

**Sunday, 5 November 2006, 11:00 AM**

Steve MacLeod  
8820 Fort Hunt Road, Alexandria, VA  
(703) 360-2436

**Next Meeting:**

**Saturday, 18 November 2006, 9:00 AM**

Greg Walthour  
7025 Coventry Road, Alexandria, VA  
(703) 768-6040

**Directions:** Map/directions on Page 5 for both activities.

**Treasurer's Report:**

Balance (9/25/06)	\$2,250.23
Vair Fair Hotel Deposit	200.00
Closing Balance (10/25/06)	\$2,050.23

Reprinted from the October 2006 *Airhorn*, the newsletter of the Chicagoland Corvair Enthusiasts.

## Tank Engines

By Charley Biddle

There was some discussion after the September meeting about weird cars in general, and Bill, a prospective new member, asked Larry Claypool if he had ever heard of Tank engines. Larry was not aware of any manufacturer called Tank.

I went home and did some research, and found that there was a large application of air-cooled engines in military armored tanks, particularly in Europe during World War II. These were produced by various companies, none of which had the corporate name of Tank.

The advantage of air-cooled engines in military armored vehicles are numerous:

- Lower weight, not needing the water jacket around the cylinders and heads. Air-cooled engines often use aluminum components.
- No need for water. For operations in the tropics and in deserts, or on extended campaigns, there may be no water available.
- No radiator. Numerous advantages, here. Water cooled engine will fail if radiator is shot up. Efficient radiators need metals that can be in short supply during wartime.
- Lower auxiliary power load. Water pump and cooling fan need space and engine horse power to operate.
- Modular design can mean fewer parts needed to be carried around by support teams.

One of the major problems in using water cooled engines in armored tanks, was that to compensate for the ducting necessary to provide air to the over-sized radiator behind the armor, the fan was required to use up to fifty percent of the engine output to move enough air to cool the engine.

World War II era American utilization of air-cooled engines was based on the Continental radial aircraft engine. The disadvantages of the use of radial engines are the increased height of the armored vehicle, and the inaccessibility of the lower cylinders.

German air-cooled engine development was more advanced, especially at the beginning of the war. The Simmering engine was a 16-cylinder X-type arrangement. This engine produced 620 HP from 515.81 cubic inches at 2000 RPM. This engine is described as [a] compression ignition oil engine, better known on this side of the pond as a Diesel engine.

The following is the description of this engine is from the British translation of Julius Mackerle's book, *Air-Cooled Automotive Engines*. Mackerle was formerly the chief designer, Tatra Works, in Czechoslovakia.

The Simmering Engine: The general layout of this air-cooled compression-ignition engine is influenced by the fact that it was intended as a prime mover for tanks. In order to keep the engine light and small, the "flattened X" layout was adopted for the sixteen-cylinder engine. With a bore of 135 mm and a stroke of 160 mm, the engine displacement is 36.8 litres. The performance is 750 bhp (550 kW) at 2000 rev/min. The net weight of the engine without the exhaust gas turbine driven supercharger is 1850 kgf and the gross weight 2250 kgf.

It is apparent from the sectional drawing of the engine that each crankpin carries a master rod with three connecting rods. Cast lead-bronze is used for the 90 mm diameter big-end bearing.

The crankpins are hardened. Steel cylinders are screwed into aluminum cylinder heads and attached to the crankcase by flanges and bolts. There are two valves in each cylinder head, the inlet valve port being of 60 mm diameter, the exhaust 56 mm. Valve lift is equal (10.5 mm) for both valves. The cylinder centre lines are 215 mm apart.

The engine is supercharged by two exhaust gas turbine driven superchargers and valve timing overlap is therefore as much as 135°. Valve timing: 10-62°, IC-35°, EO-45°, EC-72°. Two fans are used to draw air over the engine and their positioning has been subjected to the specific space limitations of an armored vehicle. Transmission to both fans is through bevel gears and each has a performance of 6 m<sup>3</sup> /s.

A special chamber for indirect fuel injection is employed in the design as is apparent in the transverse section of the engine. Glow plugs are used to facilitate starting. The compression ratio is 14.5:1 and the specific fuel consumption is 200 to 225 g/b.h.p.h (1240-13651kW h). The rate of fuel supply per stroke decreases with increasing engine speed and thus suitable torque characteristics are obtained and cooling is aided at maximum engine speed. The engine dimensions are: height 900 mm, length 1150 mm, width over cylinder heads 1350 mm, overall width 2700 mm. In order to reduce gearbox size and weight, the intermediate gear between the engine and gearbox transmission increases revolutions so that an engine speed of 2000 rev/min corresponds to a transmission speed of 3000 rev/min.

5 November 2006 Fall Tour: Sunday, 5 November 2006, 11:00 AM, Steve MacLeod, 8820 Fort Hunt Road, Alexandria, Virginia (703) 360-2436

From the North: Take the George Washington Parkway south toward Mount Vernon. Approximately 3 miles before Mount Vernon exit right at Fort Hunt Road/Fort Hunt Park. Just prior to the entrance to the park bear right. Continue on Fort Hunt Road for one half mile to 8820, the fifth house on the left.

From the South: From IS 95 North take exit 166A heading toward Fort Belvoir and Richmond Highway (Route 1). At Route 1 take a left. Approximately 1 mile past the Main Entrance to Fort Belvoir take a right onto Mount Vernon Memorial Highway. Take for approximately 7 miles and enter the traffic rotary to GW Parkway. Approximately 3 miles north exit right at Fort Hunt Road/Fort Hunt Park. Follow directions as noted above.

November 2006 Meeting: Saturday, 18 November 2006, 9:00 AM Greg and Virginia Walthour,  
7025 Coventry Road, Alexandria, Virginia (703) 768-6040

Take I-495 (Washington Beltway) East to US Route 1 (Richmond Highway) South. Turn left on Popkins Lane. Turn Left at Coventry Road.



Steve McLeod Map



Greg Walthour Map