

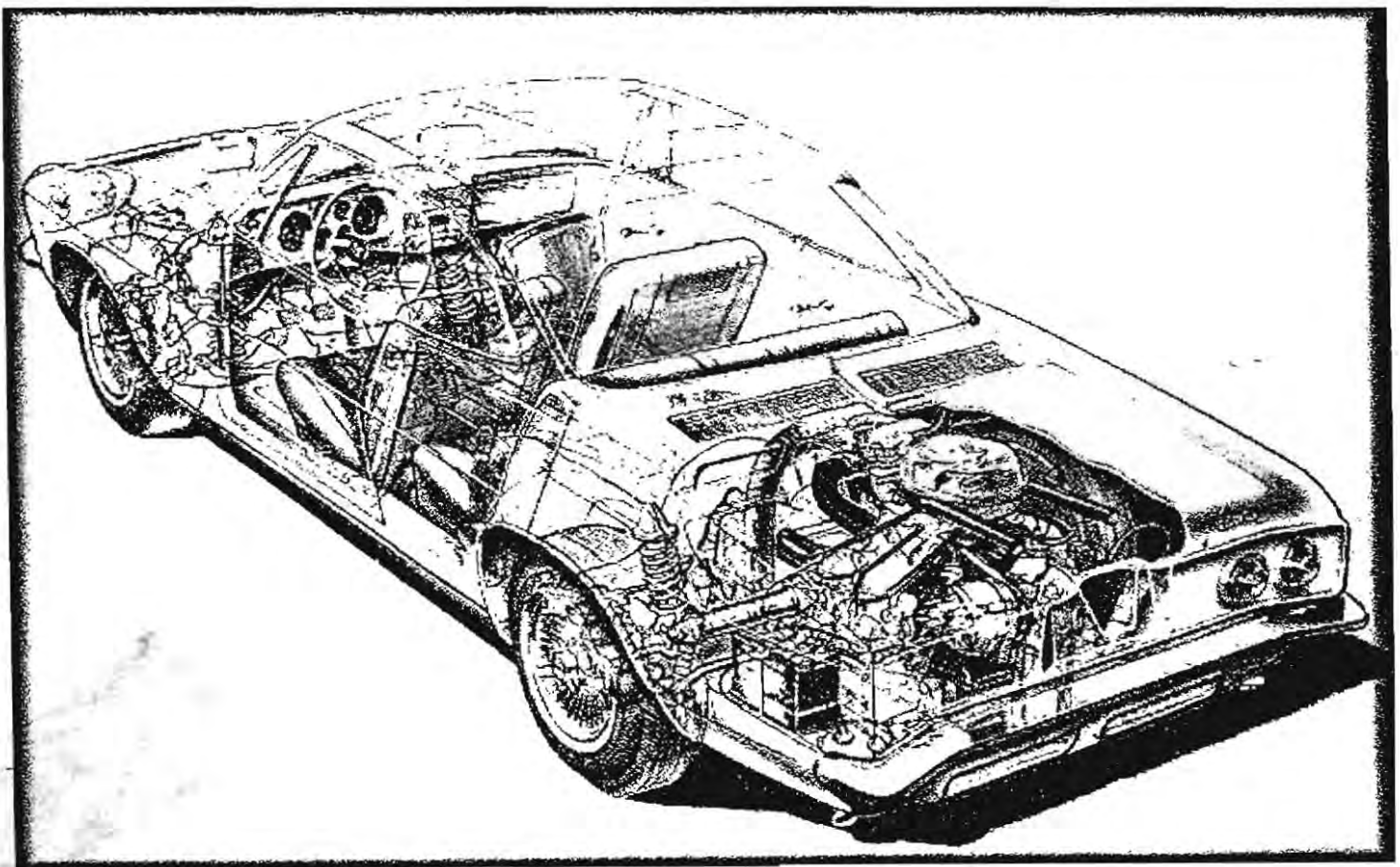
Corvairisation

www.corvairs.org

Tucson Corvair Association
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Tucson, Arizona
December 2000

Merry Christmas & Happy New Year



Tucson Corvair Association 25th Anniversary
1975-2000

Tucson Corvair Association
Established 1975

Corvairsation is a monthly publication of the Tucson Corvair Association, which is dedicated to the preservation of the Corvair model of the Chevrolet Motor Division of General Motors. The Tucson Corvair Association is a chartered member of the Corvair Society of American (CORSAs), Chapter 857.

Monthly Meetings are held on the fourth Wednesday of each month, except December. One technical/social event is planned for each month except August.

Membership Dues are \$15 per year for singles and \$18 per year for families. Initial dues are \$15 for singles and \$22 for families (includes name tags). Make checks payable to Tucson Corvair Association.

Change of Address: Report any change of address or phone number to the Membership Chairperson. Do not report such changes to the Corvairsation Editor.

CORSA Membership Dues are \$27 per year and include a subscription to the CORSA Communique, a monthly publication. CORSA membership is not required for membership in the TCA, but is highly recommended. See any TCA officer for more information.

Classified Ads are free to members and \$2.50 per 4-line ad to all others.

Deadline for all materials submitted for publication in the Corvairsation is the 10th for that month's issue. Mail or deliver all materials to the Corvairsation Editor.

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Prez Sez

Happy Holidays!! 'Tiz the season for the Annual Christmas Dinner. Come one, come all. Bring the entire family for a festive get together. Club member or not, you will be welcomed for a dinner and prizes at DMAFB Officers' Club Wednesday night. We have had a fabulous year so come and help us recap all of our outstanding events.

Our last mid month activity was really fun at Little Anthony's. We have to do that more often.

Special thanks to Gordon Cauble and Chris Cunningham for use of their convertibles in the U of A Homecoming parade. The Corvairs were the hit of the parade!

Our January mid month activity is the Car Nuts car show at Tubac. There are some beautiful cars there so join us for that show.

Also, get ready for another very exciting tune-up clinic coming up in February.

Our club will elect new officers in February for the up coming year, so your attendance is greatly needed in the next few months. Please help out and come to the meetings.

Merry Christmas and Happy New Year,

Barry

from the editor.....

Anymore, Corvairs are pretty reliable and one of the big reasons is owners have a better understanding of the cooling system. That's what this month's feature article is about.

Little Anthony's mid month was great! Although it was cool, turn-out was good with nine Corvairs and lots of spouses, significant others and family members. We took home three trophies! John and Amy Torpey (late model coupe), Allen and Marianne Elvick (early sedan) and Tim and Robin Green (truck ie, forward control) were the winners. Congratulations to all!

So that you will have plenty of time to get ready to show your Corvair at the Tubac Golf Resort, you will find a registration form in this issue of the Corvairsation. Plan to make a day of this event which starts off with breakfast at the Cow Palace in Amado; then we will tour on down to the car show. This a very beautiful and relaxing place, because it is right on the grass tree- lined course. You will love seeing all the cars, too.

Just around the corner, in the Corviar drivers vernacular, is the Christmas Party! I'm looking forward to as much fun as last year. Hope you are too!

Notice all the Corvairs on the road in November? Keep on Corvairing!
Thanks for a great year! Happy Holidays!!!

COOLING FANS

From Bryan's Autocross Page www.geocities.com/motorcity/9164/fan.html

First, a few quick notes:

- Yes, electric fans have been tried on Corvairs. No, they don't work very well.
- The stock fan will not keep a high power Corvair engine cool for long at WOT.
- Fortunately, unless you're road racing this isn't usually an issue.
- The late fan is better than the early because it's lighter and the belt stays on better. The '64 fans are the magnesium style and fit the early bearing. '65 - '69 fans are all the same.
- The stock fan isn't very efficient above 4000 rpm.
- Keeping the hot air from recirculating to the fan is very important. Don't remove any of the shrouds unless you understand how they work.

General Operation.

Let's cover how to keep the stock system together. You should be able to keep the belt on up to 6k RPM with the following setup:

- Don't put the belt on too tight. A too tight belt will just wear out bearings faster, and it won't be able to slip when the relative speeds of the pulleys is changing quickly. You should be able to turn the alternator pulley with one hand if the belt is properly tensioned. Do not use a pry bar to pull the idler pulley tight, just pull on it with one hand and tighten the front nut with the other, then tighten the rear bolt.
- Use a fully wrapped belt (available from any of the vendors) instead of one of the cut belts. The wrapped style are more expensive, but they stay on much better. Wider than stock (3/8") or cheap stretchy belts tend to come off more often. Be aware also that what works well for one Corvair owner doesn't always work for another, oftentimes folks have a favorite so if you're having problems and you've gone over the rest of this list, try a different belt.
- Make sure that all the bearings are ok. Idler, fan, and alternator should all turn freely without very much sound. Check to be sure the fan bearing is not installed too high. The belt is meant to come off the pulleys in a straight line, if it's running at much of an angle you have some adjusting to do.
- Also check that the pulleys run true, and aren't rusty or heavily pitted. File off any gouges and sand the pulleys smooth. Check to be sure your harmonic balancer is not separating. The large washer for the idler pulley is just that, a washer, not a spacer, it goes between the nut and the pulley bracket.
- For early owners, use the '64 and later magnesium fan and belt guides, adjust the guides so they are about 1/8" away from the belt. Some amount of contact while the engine is running is normal. Be aware that the early fan bearings are different from later fans, you'll either need a '64 fan, or swap a late bearing and fan onto an early engine.
- If your car has an alternator, watch out for rebuilt alternators with non-Corvair (wrong diameter) pulleys (and fans), and on earlies make sure that the mount casting is for an alternator, not a generator (the giveaway is the pulleys don't line up).

High Performance Operation.

For higher RPM use, you start to run into the limits of the stock system, but there are some things that can help:

- Better pulleys. Ray Sedman makes billet pulleys for the fan and idler, they run **much** more true, the fan pulley is lighter, and the idler pulley is equipped with larger sealed bearings. Bob Coffin offers an SFI quality steel balancer, with a deeper groove, and again it's far more accurate than the stock piece.
- Seth Emerson has found that spraying the belt with silicone lube to help it slip when the engine changes RPM works well.
- A cut down fan will reduce the inertia, and the airflow won't stall at high RPMs.
- Some racers have had success with a spring loaded idler, however it only seems to help if the pivot is bushed to provide accurate movement.
- There's an article in the Tech Guide on making an additional belt guide that attaches to the oil cooler and helps keep the belt on the balancer.

There have been a number of very informative posts on the technical specs of the Corvair's main cooling fan on Virtual Vairs. I've condensed a couple from Rad Davis and Ray Sedman to give you an idea of what the requirements are:

The Corvair engine design requires approximately 18 cubic feet of air per minute (CFM) per indicated horsepower and a system pressure of 7 inches of water at 4,000 rpm (see SAE 140C "The Chevrolet Corvair"). This works out to 80 hp and 1800 cfm on the '60, which represents a 20% safety factor. Note that the temperature curve is quite close to the indicated mean effective pressure (IMEP) curve. The peak is about 2,600 rpm. At this rpm, temperature will be 30 degrees F hotter than at maximum speed. If the power output of the engine is increased by shifting the IMEP to a higher speed, the same temperature levels will follow. No change in fan or speed ratio is required to cool the higher output engine, however there is the problem that the fan starts to stall above 4K rpms (oil temperature is a different beast).

The GM Stock Engine Test Reports (reprints available from Clark's, "GM Restricted") show fan power consumption curves as part of Standard Test 1. Airflow over the engine was also measured, and is cited, as were delta-t and plenum pressure. These data are shown on the panel for Standard Test 9a. Note that these are observed values, not theoretical.

RPM	1960 Fan		1964-69 Fan	
	hp	cfm	hp	cfm
1k	.4	450	.1	380
2k	1.0	950	1.1	740
3k	4.0	1350	3.5	1115
4k	9.0	1800	8.2	1500
5k			15.2	1680*

*= Note: the airflow curve is starting to flatten out on the 140 test. The HP demand curve isn't, though.

Allowing for graphical error, the 1960 fan is always more efficient than the magnesium fan, at least to 4K rpm. The one number I have for the 61-63 fan is 1460 cfm at 4k rpm. This would make it pretty close to identical to the magnesium fan as an air pump. At 2-3K rpm, where most 2-carb engines live, the '60 fan is functionally the best. It does have shortcomings of noise and belt jumping problems, however.

But I think these data make it pretty clear that a) any stock fan starts to suck up a LOT of hp at rpm above about 3500, b) an axial flow fan's linear power demand curve is really much better for an engine with a wide rpm range like a 140 or turbo.

Santa Cruz Valley Car Nuts, Inc.

7th Annual Collector Car Show

FOR THE BENEFIT OF THE S.T.O.P. PROGRAM

Tubac Golf Resort, Tubac, AZ

January 27, 2001

(RAIN DATE - FEBRUARY 3, 2001)

PLEASE PRINT

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ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PHONE: _____ CLUB AFFILIATION: _____

Pre-registration Entry Fee-\$12.00/ car. Pre-registration entries must be in by January 22, 2001

Leave Blank
For Club Use

_____ Car 1 - Make _____ Year _____ Class # _____

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Total Entry Fee \$ _____

Please make your check payable to: Santa Cruz Valley Car Nuts, Inc.

Mail to: Santa Cruz Valley Car Nuts, P0 Box 943, Sahuarita, AZ 85629.

The undersigned does hereby release the Santa Cruz Valley Car Nuts, Inc., its officers, directors, and members, the Tubac Golf Resort, its owners, officers, and members, the S.T.O.P. Program, its officers, the Village of Tubac, Pima County, and anyone else connected with this Event of and from any known and unknown damages, injuries, losses, judgments, and/or claims whatsoever that may be suffered by anyone participating in this event or by any spectator.

Signature: _____ Date _____

All entry forms MUST be signed and dated.

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