



VISION

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EDITOR: VIC HOWARD

ON A ROOF NEAR "PAWN STARS" IN LAS VEGAS



THE CORVAIR POWERGLIDE TRANSMISSION

By Bob Helt

Strange as it may seem, the Corvair Powerglide transmission was patterned after the Model T Ford (1908-1928) transmission. Both of these transmissions used a sun and planetary gear set that provided two speeds forward and one reverse. The main difference being of course that the Corvair tranny included automatic shifting between the two forward gears, with the addition of a torque converter that multiplied the low speed engine torque.

In addition, of course, the Corvair Powerglide was simply a slightly smaller version of the Chevrolet big-car Powerglide that had been in production for many years, and was fully developed from Proving Grounds testing and customer experiences.

Thus it was that the Corvair Powerglide was an exceptionally rugged transmission that incorporated many of the worst-case fixes made necessary by Chevrolet's prior experiences.

For example, the Powerglide was designed to be capable of withstanding without failure 100 WOT low-to-reverse shifts on dry pavement. This was ensure the ability to accept possible customer abuse. (Frank Winchell said that this test was the result of actual driving responses by the public) Of course not every transmission was tested this way. But periodically a production unit would be so tested to ensure that this criterion was still being met.

The bell housing surrounding the torque converter allowed cooling air to be sucked in thru an opening and swirled around the converter prior to being exited from the housing. This effectually cooled the converter and the lubricating oil within. While fairly effective for normal driving, the oil was prone to running at high temperatures when the converter was maximizing the torque multiplication at high ambient outside temperatures. This lead to factory recommendations of frequent transmission oil changes

The torque converter was capable of multiplying the torque a maximum of 2.4 times (later 2.6). This, coupled with the low gear ratio of 1.82:1 gave an effective low speed gearing of 4.36 with the 3.55:1 rear axle ratio.

With the brakes firmly set and the transmission in low gear, the 80 HP engine speed was limited to 1600 rpm at WOT. This was called the stall speed. Although there is no official documentation known, it is believed that later engines were allowed a higher stall speed to more nearly match their torque characteristics.

Although a high speed lockup was considered (all current production vehicles use a lockup), it was never used on the Powerglides. As a result there was always some slight slippage in the converter even at a steady cruising speed. Maximum coupling was about 94% at 100 Lb-ft torque.

One nice feature, not commonly provided now was the ability to push-start a dead engine because of the included rear oil pump in the transmission.

Although, there were slight changes made nearly each year, there are really two different versions of the Corvair Powerglide. One designed for the 140/145 CID engines with their torque capabilities and a second version designed to handle the greater torque available from the 164 CID engines. This second version transmission used much higher internal oil pressures to counter this increased engine torque. While this later version Powerglide may be installed and used with the smaller engines, it is not recommended that the earlier version ever be mounted to a LM engine because of the lower internal pressures that might allow slipping and loss of power under some circumstances.

There was also a modification to this second version Powerglide that was used for the 140 HP, four carburetor engines, (Powerglide was never available with the turbocharger engines.) This modification effectively raised the shift points to more nearly match the increased speed of the engine.

One might wonder if there were ever any hidden defects or operational problems discovered in the Corvair powerglides. We can't think of any but there were a few common failures due to age and wear. These follow.

After standing unused for several days, the transmission oil would tend to drain from the converter and settle in the pan. This raised the fluid level to the point that it would leak from a worn or damaged control cable where it entered the transmission, leaving big oil spots under the vehicle. The fix was to replace this cable or tightly wrap the leaking portion of the cable with an oil-tight covering (available from vendors).

Another possible problem is the diaphragm failure in the modulator allowing transmission oil to be sucked into the engine via the vacuum hose connection. This can be checked by pulling the short coupler hose from the balance tube and looking for a wet condition (i.e., ATF fluid there). This fix was to simply replace the faulty modulator. In addition, a faulty modulator possibly allowed some uncontrolled shifts that could have broken the e-clip within the valve body. This required the valve body to be removed and a new e-clip to be installed. The broken or lost e-clip resulted in erratic shifting.

Failure of the front oil seal in the differential would allow transmission oil to enter the differential and mix with the differential lube causing excessive wear on the ring and pinion within. This was an infrequent problem luckily.

And lastly, the already mentioned factory recommendations to make frequent transmission oil changes due to deterioration of the ATF.

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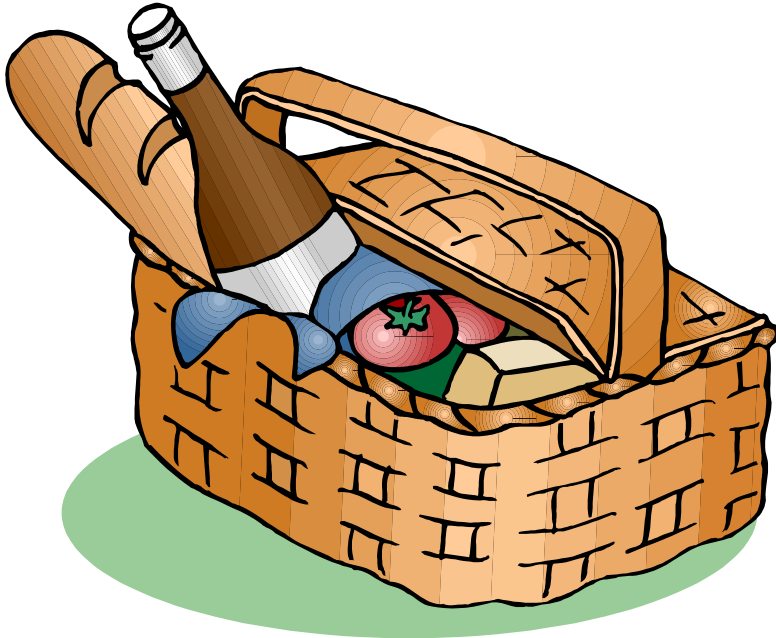
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WE'RE HAVING A PICNIC!!!!

**SALLIE AND STEVE WENTWORTH HAVE GRACIOUSLY OFFERED THEIR PLACE FOR THE BIG EVENT!!!
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**OCTOBER 29TH ,
11:00 AM TIL ??????????**

**THE CLUB WILL PROVIDE THE HAMBURGERS AND
HOT DOGS AS WELL AS SOFT DRINKS.
BRING A SIDE DISH AND A GOOD APPETITE FOR FOOD
AND FRIENDLY CONVERSATION.
DON'T FORGET TO DRIVE YOUR CORVAIR!!!
MORE DETAILS WILL BE DISCUSSED AT THE OCTOBER
MEETING.**

THERE ARE NO MINUTES TAKEN OF THE AUGUST MEETING HOWEVER, PRESIDENT PAUL BERNARDO DID TAKE SOME NOTES AND THEY ARE RELAYED TO YOU BELOW:

DISCUSSION AND DECISION WAS MADE TO HAVE A FALL PICNIC, OCTOBER 29TH WAS CHOSEN.

**PAUL SUGGESTED WE HAVE A MONTHLY HELP SESSION AT A MEMBERS HOME TO ASSIST THEM WITH GETTING THEIR CORVAIR ON THE ROAD:
ITEMS SUCH AS TUNEUPS, CARB REBUILDING, BRAKE REPAIR , ETC. HE ASKED MEMBERS TO SUBMIT THEIR REQUESTS TO THE VIC SO HE CAN POST THEM IN THE NEWSLETTER. (AS OF THIS DATE, NONE RECEIVED)**

VIC DISCUSSED THE ISSUE WITH IRS REVOKING OUR EXEMPT STATUS DUE TO FAILURE TO FILE AN ANNUAL INFORMATION RETURN FOR THE PAST THREE YEARS. HE AGREED TO FOLLOW UP ON THIS TO SEE IF WE NEED TO DO ANYTHING FURTHER.

THERE WERE THE USUAL DISCUSSIONS OF ISSUES MEMBERS HAVE WITH PARTS NEEDED AND AVAILABLE.

REMINDER OF THE GREAT WESTERN FAN BELT TOSS & SWAP MEET TAKES PLACE OCTOBER 21-23.

HERE ARE SOME SPECIAL CORVAIRS

Stubby the Corvair

There were some radical body modifications done to Corvairs along the way. One of the popular modifications was shortening the body. There were quite a few early models shortened and a lesser number of late models. Here are a few pictures of “Stubby”, a 1960 Corvair sedan that was modified in the early 1980s, then disappeared for quite a few years and reappeared just the other day.



Credit for the pictures and for getting Stubby back on the road goes to Caveman Pete, a regular on the CorvairCenter website.

AND THEN THERE ARE THESE TWO BEAUTIES:



AND LASTLY, CHECK THESE OUT:

Corvaair Road Racing Still Alive and Well



Bob Coffin, GT3



Mel Francis, GT3



Dan Giannotti, GT3



Chuck Sadek, GT3

Here are four of the many Corvaairs that compete in racing events almost every weekend -
And often win!

BOOKS NOW AVAILABLE

--THE CLASSIC CORVAIR.

A technical maintenance and upgrade manual. 330 pages. \$35+\$7 S&H.

--CORVAIR SECRETS.

Little known design and operational *insights*. 170 pages. \$25+\$6 S&H.

--HOW TO IDENTIFY AND REBUILD CORVAIR ROCHESTER CARBURETORS.

Comprehensive carburetor information. 110 pages. \$20+\$5 S&H.

--HOW TO IDENTIFY AND REBUILD CORVAIR CARTER YH CARBURETORS.

Comprehensive carburetor information. 90 pages. \$25+\$5 S&H.

If interested in purchasing any of these books, please call me at 256-2008 for delivery to one of the VV club meetings for no S&H charges

Check or money order (sorry no Paypal) to:

Bob Helt

3016 Pearl Harbor Dr.

Las Vegas, NV 89117

FOR SALE ITEMS:

I recently purchased some Corvair parts from a fellow in Fort Mohave that used to build sandrails and power them with 140 hp Corvair engines. Unfortunately, there was only one engine left that was in the stack of parts. There were several pieces of engine top sheet metal (aka turkey roaster) that I had powder coated and am offering for sale. two are for 140 engines and one is for a 110 engine. I'm asking \$55 each. Other misc pieces are also available, Here are photos of the parts:



VIC HOWARD: PHONE 928-768-6062 EMAIL: vichoward@frontiernet.n

JERRY DUNNING HAS PUT HIS TWO CORVAIRS UP FOR SALE:



1964 CONVERTIBLE
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