



VISION

SEPTEMBER 2012

VIC HOWARD, EDITOR

VEGAS VAIRS, CHAPTER 891 OF CORSA, MEETS AT 7:00 P.M.

THE 2ND WEDNESDAY OF EVERY MONTH AT:

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AND \$13 FOR NON-CORSA MEMBERS

DUE BY FEBRUARY 1ST OF EACH YEAR.THEY MAY BE PAID AT THE MONTHLY MEETING OR MAILED TO:

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--THE CLASSIC CORVAIR.

A technical maintenance and upgrade manual. 330 pages. \$35+\$8 S&H.

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If interested in purchasing any of these books, please call me, Bob Helt, at 256-2008 or email me at Bobhelt@aol.com for delivery to one of the Vegas Vairs club meetings for no S&H charges.

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BIRTHDAYS IN SEPTEMBER

KELLY MAGOWAN



2012 schedule for The Strip at Las Vegas Motor Speedway

September

- 1 – Short Line Express Jr. Dragster Series race No. 11 – Nevada State Jr. Championship (daytime).
- 1 – Tony Rowe Enterprises Las Vegas Bracket Drag Racing Series Presented By TRE Operation Street Legal – NHRA King of the Track wild card race.
- 2 – NHRA Pacific Division Jr. Dragster Championship Series (daytime).
- 2 – Tony Rowe Enterprises Las Vegas Bracket Drag Racing Series Presented By TRE Operation Street Legal – King of the Track championship.
- 3 – Short Line Express Jr. Dragster Series race No. 12 – NHRA Jr. Dragster Challenge.
- 7 – Dodge Midnight Mayhem Presented By Tony Rowe Enterprises Operation Street Legal.
- 14 – Friday Night Fury: Test ‘n’ Tune and 1/8-mile gambler.
- 15-16 – Super Chevy Show (www.superchevyshow.com) – autocross, car show, thrill show, bonus race, NHRA National Dragster Challenge.
- 21 – Dodge Midnight Mayhem Presented By Tony Rowe Enterprises Operation Street Legal.

October

- 2-3 – Frank Hawley Drag Racing School.
- 3 – Wednesday Night Club Clash Drags
- 4-5 – Frank Hawley Drag Racing School.
- 5 – PSCA Test ‘n’ Tune.
- 6-7 PSCA Magna Fuel West Coast Nationals (www.pscaracing.com).
- 8-9 – Frank Hawley Drag Racing School.

17-18 – NHRA professional and sportsman tune-up.

19 – Dodge Midnight Mayhem Presented By Tony Rowe Enterprises Operation Street Legal.

25-28 – NHRA Big O Tire Nationals – NHRA Powerade Drag Racing Series national event.

29 – NHRA professional testing.

31 – Lucas Oil Drag Racing Series Test ‘n’ Tune.

November

- 1-4 – Short Line Express Markets Gambler Showdown – Lucas Oil Regional Championship.
- 14 – Street Car Super Nationals Test ‘n’ Tune.
- 15-18 – Street Car Super Nationals (www.StreetCarSuperNationals.com).
- 17 – Vegas Drift Pro-Am sanctioned by Formula Drift (Strip drift arena).
- 21 – Las Vegas Bracket Nationals time trials and Geezer Gambler.
- 22-25 – Las Vegas Bracket Nationals.
- 30 – Dodge Midnight Mayhem Presented By Tony Rowe Enterprises Operation Street Legal.

December

- 1 – Track Day.
- 2 – Import Face-Off .
- 14 – Dodge Midnight Mayhem Presented By Tony Rowe Enterprises Operation Street Legal season finale.

For more information, please call Samantha Rudder at The Strip’s operations office at (702) 632-8213 or visit www.LVMS.com. Follow LVMS on Facebook

and Twitter.

Vegas Vairs - CORSA Chapter #891

Monthly Meeting Minutes for August 8, 2012

- 1) - Vice President Mel Jackson called the meeting to order at 7:02pm. (Prez Paul Bernardo was headed to the *Hot August Nights* car show.)
- 2) - We only had 12 in attendance buuuuuuuuuuuut, it reached the "one-teens F." today. When I parked at *Denny's* at 6:30 pm it was still 112F! Later, when I reached the traffic light at Paradise & Sahara going home at 9:00pm it was still 106F.!!! Those brave souls who wilted all the way to the meeting were (in alphabetical order) Jerry Dunning (back from N.Y- and, with a new Chrysler 300), Chuck Hanson (if he can come from Mesquite so can you!), Bob Helt, Ingrid and Vic Howard (again, all the way from Fort Mohave, AZ - that's Arizona folks), Mel Jackson, Ernie McKinney, John O'Shea, Harry Ransom, Arlon & Suzan Sibert, and Steve Wentworth; Sallie is still in Wyoming. Can someone cook Steve a good meal?
- 3) - Ingrid gave the Treasurer's report. After paying all current bills we have \$519.27 in the bank. However, Ingrid relayed that the annual Post Office box bill has jumped to \$120.00/year. Should we eliminate that fee and use some volunteer's home address instead????????????????
- 4) - We jumped right into Old Business discussing the fall picnic. Although Steve Wentworth volunteered his home once again many felt that that was over using his (their) generosity. Maybe using a public park as we had numerous times in the past would serve as a varietal change of venue? Mel suggested using *River Mountain Park* in Henderson off Int. 95 between Wagon Wheel and Horizon Ridge. He relayed that there are many shade trees. Harry Ransom suggested that we consider a paddle wheel boat cruise on Lake Mead either as an *additional* club outing or as a possible substitute venue for the fall picnic. The cost for a champagne brunch on a Sunday cruise would be \$33.75. However, we discussed using club treasury money to subsidize that cost at \$20.00/person. Out-of-pocket would then only require \$13.75 which is less than most Vegas buffets. Those present voted unanimously to consider the cruise in some manner. There is also a \$10.00 Lake Mead National Recreation Area *entrance fee*. We don't know if that's per carload or per person? Cool.
- 5) - While discussing upcoming activities 10 possibilities were addressed. Of special club interest might be the return of the Fairway Chevrolet Open House and Cruise Night on October 19th from 6:00 to 9:00 pm.

- 6) - Steve Wentworth gave an update on the medical condition of John D'Angerio. His brain surgery has been delayed.
- 7) - Harry reviewed the upcoming *National Championship Air Races* in September and the impact they could have on many forms of motorsports.
- 8) - Mel outlined a new A/C alternative to R-134A. It's called "Red Tek" and it decreases head pressure as well as lowering max temperature 6 degrees Celsius! Bring it on! BUT, it does require different hoses though they are also cheaper. Is this a win-win? Punch up: {redtek.com}. Much A/C talk then commenced for quite awhile.
- 9) - Vic Howard brought up the subject of revamping the club website. The last entry was added during November of 2011. The "person" who volunteered to take over web duties has fallen behind. Should we abolish the site if it isn't attractive? Come to the next meeting and voice your opinion. This subject was followed by much criticism of CORSA's new website.
- 10) - Next Chuck Hanson presented a unique new fuel injection system for *Corvairs*. Machined from a solid billet it replaces the top half of the Rochester carburetor which is gutted internally. It offers rather unlimited applications of type and style of injectors. But the real power secret is the vastly increased air flow. This same company installed direct port injection of Chuck's *Ultra Van* and he's seen 10,000 trouble free miles so far. They cost about \$400.00 each.
- 11) - The club members then proceeded to drool over a red '64 Monza convertible for sale in Champagne, Illinois. It has a white interior, real wires, etc., etc. Let's see - the upper midwest - they only rust up to the door handles! No, this one looked like a jewel.
- 12) - Since Howard Stoner was still in Australia we had no raffle. We must buy another roll of tickets.
- 13) - The meeting was adjourned at 8:10 pm and a good time was had by all!
- - - Submitted by club secretary G. Harry Ransom (I won't be present for the 9-12-12 meeting - the air races beckon in Reno)
- GHR IV

To All Vegas Vairs Members

~ Consideration Of A Stern Wheel Lake Meade Cruise ~

During the August 8th monthly meeting we discussed the possibility of participating in one of the Lake Mead Sunday Brunch cruises. The club could consider this activity as a separate event or, as a possible replacement (one time) for our fall or spring picnics. Everyone in attendance at the last meeting voiced approval for the idea in one form or another.

The price for the 1 1/2 hour cruise with full buffet is \$33.75 per person. There is also a \$10.00 Lake Mead National Recreation Area *entrance fee*. We don't know if that's per carload or per person? However, no one at the meeting objected to using treasury money to offset the cost. As of August 8th we have \$519 on hand. The club could supply \$25.00 per ticket which would leave only \$18.75 out-of-pocket expenses. That's about the current average Vegas buffet - without the lake! Yet, 20 members would cost the treasury \$500.00!! Reservations *ARE* required. If you want to do this in say, October (they stop the yearly tours on October 21st.) we'll have to decide quickly since October is THE most popular month for activities in the greater Las Vegas area.

Do you want to play Huck Finn? Come to the September meeting on the 12th. and VOICE YOUR OPINION!!!

THE CORVAIR DEVELOPS A FEVER

By Bob Helt

Operating temperatures for Corvair engines have always been higher than those for water cooled cars. And it is expected that air-cooled engines would operate at temperatures that disregard the artificial limits imposed by boiling points. The Corvair is fortunate in those respects. The designers could allow for a large range of temperatures in the Corvair engine and still achieve completely satisfactory operation. All of course, assuming that certain maximum temperatures were never exceeded.

The original 1960 80-HP engine was described in great detail in the Society of Automotive Engineer's (SAE's) report number 140C by the Chief Corvair Engineer, Robert (Bob) Benzinger. He stated that the worst road load cooling condition of maximum vehicle speed produced peak cylinder head temperatures of about 435° in 100 degree ambient air. Similarly, full throttle operation at speeds near 60 MPH produced worst case cylinder head temperatures of approximately 465° in 100 degree air. This was in an engine displacing 140 cubic inches with a blower fan rated at 1850 cubic feet per minute (CFM) of cooling air at an engine speed of 4000 RPM. To cool the engine oil, a separate folded-fin (FF) type cooler was used that dissipated about 160 BTU's of heat per minute. This cooler kept the lubrication oil down to 280° when the engine was operating at its worst case conditions (for oil temperature) of maximum vehicle speed in an ambient air of 100°.

While the 465° F maximum cylinder head temperature appears safe enough, the 280° oil temperature is cause for concern. Oil tends to thin out and oxidize very rapidly at higher temperatures with the rate of oxidation

doubling for every 33 degree rise in oil temperature. Many experts recommend an absolute maximum oil temperature of 250 degrees with a preferred operational temperature of about 220 degrees.

The Corvair operational oil temperatures were about 230° and 240° for speeds of 60 and 70 MPH respectively in 100 degree air. So the oil temperatures at conservative speeds were within satisfactory limits for long engine life in the 1960 Corvair.

However from these 1960 cylinder head and oil temperatures, defined in the SAE report, operational temperatures started to increase as yearly model changes heaped more burdens on the cooling system. First there was the air conditioning option in 1961 that raised operating temperatures. This was followed in 1963 by a change in the oil cooler construction to a less effective design (although tests show the 1964 12-plate oil cooler is as good as the FF cooler or even slightly better). 1964 brought a larger displacement engine that actually required more cooling since it developed more horsepower within the same overall shape and size as before.

THE AIR INJECTION REACTOR

However slight these previous changes might have been, for the 1966 model year, the Air Injection Reactor (AIR) option, K19, — sometimes called a smog system, to lower the exhaust emissions— was a major change made mandatory on most Corvairs delivered in California. It was a major addition to the burden of cooling the engine. For only the 1966 model year, the turbo engines that were being discontinued after that year, and all air conditioned Corvairs were exempted from the AIR requirement.

The AIR option included especially calibrated lean carburetors and revised distributor calibrations to lower exhaust emissions allowed by burning excess hydrocarbons in the exhaust manifolds as they leave the engine. This was done by pumping air into the exhaust manifolds and producing an effect similar to a person blowing on campfire embers. When these hydrocarbons burn, they produce significant temperature increases in the engine.

Although the AIR system was only installed on the California delivered cars in 1966 and 1967, Federal government mandated emissions requirements forced the use of the AIR system on all 1968 and 1969 Corvairs.

TERMINATION AND RE-INSTATEMENT OF PRODUCTION

In April 1965, Chevrolet management decided to terminate all Corvair production at the end of the 1966 model year and issued an order to immediately stop all development work on Corvairs, except for safety, legal, and forthcoming government mandated changes. Thus it was that any Corvair engine cooling problems caused by the AIR option would die with the Corvair itself. However for whatever reasons that Chevrolet might have had, the termination order was rescinded and Corvair production was extended for three additional years thru most of 1969. Some say that this decision was due to Nader's book and the following need to show confidence in the car itself by Chevrolet.

But when the order came down to continue Corvair production after the 1966 model year, panic must have hit the Chevrolet Engineering Department since the heating effects of the Corvair AIR system were not thoroughly known or tested, and the lead time to 1967 production was much too short to make any major changes to the cars.

THE SHAKE DOWN TESTING

As a result, Chevrolet engineers embarked on a shakedown test during the Summer of 1966 in order to test all their cars with AIR systems in high ambient temperatures. This was a 4762 mile long test with a fleet of Corvairs, Chevy IIs, Chevelles and full size Chevrolets. The trip was intended to be a general evaluation of the AIR systems under desert, high altitude, and other strenuous driving conditions. All of the cars being tested were equipped with the AIR systems.

There were two 1967 prototype Corvairs that made the complete trip: a 95 HP, 3-speed, and a 110 HP Powerglide with air conditioning. For the desert testing, a third Corvair with a 95 HP engine and air conditioning was also included.

The results of these tests showed conclusively that the Corvairs exhibited excessive operating temperatures during the desert test sequences. These excessive temperatures manifested themselves in several ways. Severe part throttle and high speed Wide Open Throttle (WOT) detonation was encountered using premium gas. Serious vapor lock problems developed with the two air conditioned Corvairs during the tests. Once vapor lock occurred, it became impossible to start the engines normally. Vapor lock problems also caused surging and speed loss when the engines were running. The critical soak period appeared to be 30 to 60 minutes. On shut down, some dieseling also occurred.

80 MPH RUNS

High speed runs at the Desert Proving Grounds, near Mesa, AZ, were made with ambient air temperatures of 100 to 107 degrees. During the first of these tests at a constant 80 MPH, cylinder head temperatures reached the maximum of 565° with an average head temperature of 515° being common. Oil temperatures under these conditions were all well over 300°, with an average temperature of 315° and a peak of 329 degrees.

WIDE-OPEN-THROTTLE TESTS

But if the previous tests resulted in the Corvairs overheating, the Wide Open Throttle tests were a total disaster(!) The air conditioned Corvairs would not stabilize temperatures. That is, the operating temperatures just continued to climb on these cars. Each test was terminated when the cylinder head temperature reached 590° to prevent melting the engine. Oil temperatures soared to 345°. Muffler temperatures were well above 1600° causing the muffler hangers to burn off. One Corvair developed an exhaust gas temperature in the muffler of 1720° while pulling a long grade at 58 MPH with Wide Open Throttle.

Even the Corvair without air conditioning ran excessive temperatures with a head temperature of 550° and an oil temperature of 335 degrees.

Clearly all these temperatures were excessive and meant real problems for the Corvair.

Temperature tests run on five other Corvairs (for comparison) produced similar results to the desert testing and an engine summary report was prepared for Chevrolet management's analysis and action.

RECOMMENDATIONS

Recommendations were made to management to delete the air conditioning option on the AIR equipped Corvairs and to use the 12 plate oil cooler with the AIR option. (Air conditioned cars already used the 12 plate cooler.) These changes would take effect for the 1968 model year. An aluminized muffler was already standard on the AIR cars due to the high exhaust temperatures.

Unfortunately no further development programs were initiated on the Corvair to resolve the excessive temperature problem, due to its negative status with Chevrolet management by late 1966.

The Corvair's excessive temperature problems had no easy solutions. A really large oil cooler would have reduced the oil temperatures significantly, but considerable design effort would probably have been required to lower the head temperatures. A larger capacity cooling fan might have been a partial solution but this would have sapped considerable horsepower and possibly caused fan belt problems.

So the last three years of Corvair production occurred with apparently known and uncorrected potential heating problems. No wonder Chevrolet was anxious to terminate the Corvair and supplant it with its replacement, the Camaro, which it did in 1967.

Want To Go Flying?

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Corvair Ugly Car Contest

Here are two of the ugliest Corvairs ever to roll down the street. It appears nearly every doodad or geegaw known to man has been pasted onto one or the other of these cars. However, it looks like antenna foxtails and curb feelers were left off for some mysterious reason. If you are hiding away something even uglier please let us have a look at it.



Corvair MacGyver Moment

Here's a picture of a clever "MacGyver" fix for a Corvair exhaust manifold with one or both ears broken off. A muffler clamp has been attached to the exhaust manifold just behind where the ears would be that hold the studs used to attach the exhaust pipe. Before the muffler clamp was attached two eye bolts were put on it. The eye bolts take the place of the studs. Anybody can do it. Clever, huh?



Credit for the picture goes to username
"flamingchariots" on CorvairCenter.com

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