



INTAKE MANIFESTO

Official Publication of the Arizona Chapter, NCRS

Spring 2021 Issue

CHAIRMAN'S MESSAGE BY PHIL D'ALESSANDRO



As I write this, we are less than fifty days away from our 2021 Western Region Regional Judging Event. Snuck up on us. Nine weeks ago, we didn't even know IF the event was going to happen. I communicated, what was then rumors, at the January 16th meeting, of the potential scenarios, one was cancellation and the other, moving the dates to perhaps July. Neither desirable options. At the end of January, the National Board and Officers determined to stay with the original dates based on the then current trends and the distribution of the vaccine. Fortunately for all of us, the positive trends continue, albeit the disaster on the border.

By the time you read this, we should be fairly locked in place with all logistics and activities. We have had an excellent response on reservations for both Flight and PV cars, in fact, the most PV cars (14) at a Regional in recent memory. The challenges of conducting a "mini" PV event on Wednesday, followed by the opening of the Regional on Thursday is being superbly managed by Dave Talley and Gary Craig with support from chapter members. WeKoPa management has been listening to our needs and has been able to accommodate our requests with minor arm twisting. Official "kick-off" will be the Opening Reception on Thursday evening in the hotel pool area with a full meal. Friday initiates Flight Judging, PV appointments and educational sessions. Friday evening offers the option to join fellow attendees at La Puesta del Sol for a Western-style cook-out with live entertainment. Bus coaches will provide transportation to and from the venue for your safety. Saturday continues with Flight and PV, educational sessions and a very special guest speaker, Larry M. Galloway, whose personal experience working on the fabled mid-year Corvettes, should fill your unanswered manufacturing questions.

We will wrap up with a reception in the new atrium followed by the Awards Banquet.

All this would not be possible without the owners, Chapter member support and our sponsors.

Looking forward to seeing all of you soon and certainly at the Regional because we need your help.

Continue to stay healthy, mask up and get your vaccine shot(s) and hopefully we can slowly return to "normal", whatever that means for you.

ARIZONA '21 REGIONAL BY GARY CRAIG

On May 13-15, 2021, the Arizona Chapter will be hosting the first NCRS Regional since the Covid-19 epidemic hit the country and cancelled all remaining 2020 Regionals and National plus this year's 2021 Florida Regional.

This event will be held at the We-Ko-Pa Resort in Scottsdale, same location as the 2018 Arizona Regional. However, this location has been significantly changed in that a new parking structure and a new casino area have been built and the old bingo hall and ballroom area will be available for our usage.

Additionally, on May 12, we are also hosting a Mini PV Regional event that helps those owners striving for a Mark of Excellence award to fulfill the necessary requirements for those awards, since many owners could not attempt those prerequisites at the many past cancelled Regionals. We have 9 cars coming out to succeed in this Mini PV as well as have their car Flight Judged at the Regional.

For our Technical Session at the Regional, our special guest speaker is Larry M. Galloway who's personal experience working on the midyear Corvette should fulfill your unanswered manufacturing questions.

Registrations are still open until April 26 and ready for your signup. Please mark your calendars!

Have a wonderful Spring and hope to see you at our upcoming Arizona Regional.



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2021 AZ Chapter Board

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NCRS (National Corvette Restorers Society) is a national organization open to all persons interested in the restoration, preservation, history, and enjoyment of Corvettes produced by the Chevrolet Motor Division of the General Motors Corporation. NCRS is not affiliated with Chevrolet or General Motors.

Membership in the Arizona Chapter of the NCRS is open to all members of the NCRS National Organization. Dues are \$20 per year. For membership information, please visit our website at www.arizonancrs.com.

NCRS registered marks used in the "*Intake Manifesto*" are NCRS Founders Award®, NCRS Master Judge Award®, NCRS Performance Verification Award®, NCRS Flight Award®, NCRS American Heritage AwardSM, and NCRS Sportsman Award®. All are registered with the United States Department of Commerce and Trademark Office.

The Arizona Chapter is proudly sponsored by the following businesses. We appreciate all that they do in support of our Chapter, so Please Support Them!

Barrett-Jackson

THE WORLD'S GREATEST COLLECTOR CAR AUCTIONS™



2021 SCHEDULE OF EVENTS

Date	Activity & Contact Information
January 9	Heart of Ohio Chapter Virtual Judging School—Wheels Part 1 Online Registration
January 16	Judging School & Chapter Meeting— TBD
February 6	Heart of Ohio Chapter Virtual Judging School—Wheels Part 2 Online Registration
February 13	Concours In The Hills— Online Registration
March 5-6	Southern California Chapter Judging Meet—Anaheim, CA Online registration Opens Jan 15th
March 12-13	Southern Arizona Chapter Judging Meet—Tucson, AZ
March 20	Judging School & Chapter Meeting—TBD
April 10	Chapter Driver—Bartlett Lake See article for more details
May 11-16	Arizona Regional—We Ko Pa Resort & Casino, Fort McDowell Online Registration
June 10-12	Heartland Regional—Cedar Rapids Iowa
June 19	Judging School & Chapter Meeting—TBD
July 17-22	NCRS National Convention—Palm Springs, California Registration Opens Feb 1st
August 21	Judging School & Chapter Meeting—TBD
September 18	Judging School & Chapter Meeting—TBD
October 15-16	Fall Chapter Judging Meet—TBD
October 21-23	Lone Star Regional—Frisco, TX
November 20	Judging School and Chapter Meeting—TBD
December TBD	Chapter Holiday Party TBD

The above list of events are subject to change. Visit the [Chapter Website](#) for latest details

These events may be impacted by the Covid-19 social distancing guidelines put into effect by federal, state, and local agencies. Updates, as soon as we know them, will be sent out to chapter members.

Throughout 2020, a few chapters started holding online judging schools, and being a virtual event, attendance was accessible to all NCRS members. Our chapter held several such judging schools, including the very first one. Attendance was typically in the 75-110 range, and as long as you were registered and stayed for at least half the class, you would receive one judging point.

The Heart of Ohio Chapter was one Chapter that held these judging schools, and took it one step further by recording them. You can go their Chapter website [here](#) and find links to the school videos.

Visit Nationals news and events webpage [here](#) to stay informed on other possible online schools that may become available.

GET INVOLVED!

THROUGHOUT THE YEAR THE CLUB IS LOOKING TO HOLD TECHNICAL AND SOCIAL ACTIVITIES IN ADDITION TO OUR TRADITIONAL JUDGING ACTIVITIES.

IF YOU HAVE AN IDEA YOU THINK OTHER MEMBERS OF THE CLUB WOULD BE INTERESTED IN, PLEASE CONTACT A BOARD MEMBER TO DISCUSS IT.

FALL CHAPTER JUDGING MEET RECAP BY GARY CRAIG

Arizona Chapter Judging School – January

On January 16, the Arizona Chapter held a Chapter Judging School in Scottsdale regarding Introduction to NCRS Flight Judging. The school was well attended with 22 members in attendance. This event was held at the WeKoPa Casino Resort which was a great location. The room was very large which allowed plenty of space for social distancing. The WeKoPa Resort construction is finished so the location was ideal. The Judging School went over the entire NCRS judging process – the CDCIF Matrix scoring system, standard deductions, awards and tools needed to reach the various levels of recognition within the judging and tabulating system. Many questions were asked and everyone got their fill of our traditional food: donuts and coffee.

Arizona Chapter Technical Session – February

On February 20, the Arizona Chapter held a Chapter Technical Session regarding Cam Valve Adjustment. This event was held at Gary Craig's garage where we had a chance to



see an engine on a stand so the action of the cam, lifters, pushrods, rocker arms and valves could be seen relative to the crankshaft balancer.



Unfortunately, the engine on the stand came from a 68 Z28 Camaro instead of a Corvette but the engine without the intake manifold and spark plugs worked very well to demonstrate the various methods that are used for adjusting valves (Chevrolet Service Manual, EOIC, Hinckley/Williams 30-30, and one additional method).

Gary's 71 LT1 engine was also used for demonstrating that one additional method used by Gary since the 70's (much simpler and does not require you to pull spark plug wires, spark plugs, nor use a socket/ratchet on crankshaft balancer bolt, just observe the current open valves and adjust the mating valves). The Technical Session was attended by 23 of our members, a very good showing. What was most impressive was the amount of Corvettes that were driven to the event with 3 C8 in attendance. It was neat to see all these Corvettes lined up in my driveway.

Too bad, only one Corvette in the driveway was mine. I have to thank David Peterson for recommending this topic for this Technical Session, I think that our members may have learned something new.

Arizona Chapter Judging School – March

On March 20, the Arizona Chapter held a Chapter Judging School in Fountain Hills regarding Preparing for Flight Judging at the AZ Regional. This event was held at the Fountain Hills Community Center which provided plenty of space for social distancing and a nice area to present this topic. There were 13 members in attendance for this School with a couple of visitors that have an unrestored 69 C3 Corvette (my favorite!) Many of the members that attended are also signed up for the Arizona Regional so this topic was very germane for the upcoming Event and how to prepare your car and yourself for Flight Judging. The presentation went over the items to bring that are not part of your car like folding chairs, blanket for placing your items removed from the car during Judging, and the three items (NCRS sticker, fire extinguisher, battery cutoff) that can give you up to 10 free points. Many questions were asked and I think that the information in the School was well received and valuable to our members that are getting their Corvette Flight Judged at the Arizona Regional, some for the first time.

WEBSITE UPDATE BY LOREN PETERSON

"Would you like to see a picture of your corvette in our website?

How about a buy/sell parts section?

Do you have a specific question on judging?

Please help make our local website better. We will be making some changes to our website and would like member input.

Please email your suggestions to webmaster@arizonancrs.com."

END OF YEAR TREASURY UPDATE BY DAVE BARCLAY

If your personal information (e.g. address, phone number) or email address has changed, please email those changes to me at treasurer@arizonancrs.com.

Our financial balances and breakdown as of March 28th, 2021 are:

Checking Account: \$24,892.15 Money Market Account: \$48,198.24

Income	
2021 Regional Registrations	\$25,504.63
2021 Regional Advertising	\$1000.00
2021 Regional Sponsors	\$17,000.00
Membership	\$1664.40
Charity	\$0.00
Interest	\$0.76
Total	\$45,169.79

Expenses	
2021 Regional (prepays/refunds)	\$2,160.55
Membership	\$169.23
Judging	\$186.17
Miscellaneous	\$32.00
Social	\$0.00
Web Site	\$616.84
Good Will	\$6.52
Total	\$3,171.31

Income:

Membership: 2020-2024 Dues
Interest: Money Market Account

Expenses:

Membership: Badges, Shirts, Other
Judging: Schools, Tech Sessions
Miscellaneous: Administrative
Good Will: Charity, Sympathy

APRIL DRIVER BY JOHN RICHARDS

We are going to try once again to have a road trip in April. Think of it as Road Trip 2.0 since we will try to achieve what we were unable to in April 2020 due to Covid 19. Hopefully by now most everyone will have had their Covid vaccine. The restaurant where we will be has outdoor seating with plenty of room but most tables do seat four people so there may have to be some doubling up at tables. So here is the plan:

The proposed date is April 10 and the start point will be WeKoPa Resort in the south parking lot just off the Beeline Highway. Plan to be there by 08:30 and we will leave at 08:45. We will be driving to Bartlett Lake just as we planned last year but this time there will be an interim stop at Alpio's at Troon since the second Saturday of each month Alpio hosts a Cars and Coffee get-together there. So the route will be through Fountain Hills and then North to Rio Verde, then West on Rio Verde Drive/Dynamite where we will make a slight detour to Alpio's at Troon. We should be there around 09:30. Cars and Coffee



runs until 10:00 but there still should be some great cars to admire and for those who haven't been there before just touring Alpio's displays is pretty cool. We will leave around 10:30 and continue on to The Cove at Bartlett Lake (name and ownership change from last year) by heading North on Pima Road to Cave Creek Road and then Bartlett Lake Road. The drive is quite scenic with little traffic and we should arrive around 11:15.

The Cove is now owned by a brewpub (Arizona 48 out of Tempe) so the menu is quite good and craft beers are available. The owners told me they will have to restrict the menu because if we have 30 or so people as I anticipate they cannot accommodate all choices. The location is quite remote and they don't have a large staff, particularly in the kitchen. Below are photos of the restaurant and the menu but the menu will be restricted. Remember most members I talk to say the drive is more important than the food! And don't forget the great beer!

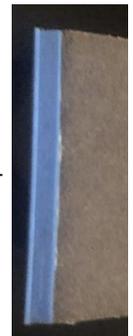


Please let me know if you plan to attend by April 1. That will give time to coordinate with The Cove and Alpio. You can email jrichards16@me.com.

GARAGE TOYS—BRAKE SHOE RE-ARCH BY GARRY MION

Continuing on from the last newsletter, the Ammco Safe-Arch Model 8000 was looking in bad shape, but was pretty much all there. Many of the component pieces were not moving freely, however the motor did spin. It took a few weeks of labor, some web searching for data and replacement parts along with a manual purchase, but the shoe grinder is back in running condition.

The machine was taken completely apart and cleaned. Most of the issues related to stubborn movement of parts were due to dried out grease, which an application or two of Kroil penetrating oil took care of. Some areas of rust, mostly on the underside area, were cleaned up, and I decided to take a few components out for powder coating (those items associated with the vacuum blades and cover).



One of the areas I had trouble finding out about was exactly how the drum assembly, and its associated bearings, were held in place, and thus should I attempt to press it out from the top or the bottom and would it matter. I was able to locate a manual on ebay for purchase, and it only took a couple of days for delivery (still surprised I couldn't find a pdf somewhere for free). Fortunately, it had an exploded view of all the components, and it was evident that I should press it out from the bottom. With the assistance of a friend's press, the drum easily came out of the housing, and the bearings came off the shaft easily as well. Now I could start the search for replacement bearings.

They turned out to be standard bearing sizes, but the configuration of having an offset one end was not. At left is a picture of the top bearing, which also shows a groove for a retaining ring (not a problem), and the offset (a problem). Since I wasn't going to find such a bearing, the solution would be to replace it with a large washer that was similar in thickness. Well, a C2 has several large/thick washers, and I found something close, but the ID was the critical piece. Not a problem when your friend has a lathe. We were able to cut the ID needed. The picture above-right shows how the bearings and related pieces were stacked.

There is a local place, [Bearing Belt & Chain](#), that had the bearings I needed in stock. At right is the assembly after pressing in the bearings. Note the offset washer at the top. After a thorough cleaning of the housing, I went back to my friend's house and pressed the assembly back into the housing. The rest of the machine went back together after all the pieces were thoroughly cleaned and lubricated. I brightened up some of the chrome pieces by using a buffer.

Now the project focused on the abrasive for the drum. The original belt was an open design with special ends that fit into a bracket installed in the opening of the drum head. The picture at left and right illustrates what this looked like. There was a company, [Friction Works](#), that was advertising a replacement belt, but the cost was pretty steep, as in close to \$165. So I looked at the solution, and thought... I could do that. A little research on custom belts revealed they could be had for a fraction of the cost.

I started out by creating a test belt using 2" wide sand paper strips shown below. Using math (see, it does come in handy), I figured the approximate size of the belt by calculating the circumference of the drum, plus some additional length to accommodate the new mounting piece (more on that later).

After a couple of tries, I came up with 14" as the length of the belt.



GARAGE TOYS (CON'T)



I found a few articles on the web about gluing belts together, and this is how I built my prototypes. See pictures left and right. I did a test fit using an irrigation coupler as my temporary mounting rod (picture below).

Now it was on to making a mount for the belt. I figure it would consist of a rod similar in size to the irrigation coupler. I decided that 3/4" was a common size for metal rods, and it so happened I had one in the garage. I created a temporary rod for testing



using a 3/4" wooden dowel (pic at left). Using the original mount as a template, I cut the dowel to length and marked the locations to drill holes for the allen head retainers. Picture at right is the final result. Now I needed to order the actual belts, and make a more permanent mount using the metal rod.



Belts, if you do some research, come in various abrasives, grits, and backings. I figured the abrasive needed to handle grinding down organic material, likely with embedded metal (e.g., semi-metallic brake shoes). I wouldn't want it to clog easily, and the grit had to be such that it would cut aggressively, but leave a relatively smooth surface. After contacting and talking to a few suppliers, I settled on Silicon Carbide and Zirconia Alumina as two abrasive coatings that would work. Other choices were Aluminum Oxide and Ceramic. I may try these down the road.

As for the grit, I figured that the original belts were probably in the 50 to 80 range. As the belts were relatively inexpensive, I decided to order a range of grits. I went to customsandingbelts.com for my order. For example, a 60 grit, 4.5" x 14", Silicon Carbide belt cost all of \$2.96. I ended up ordering eight belts in total, and shipping was only \$5.



The backing material was a little more problematic, as it turned out you get what you get based on the abrasive material you wanted to order. My preference for the backing was going to be a cloth type, like the original. There are various "weightings" for the cloth: F; J; X; and Y. F being the most flexible and lightest duty, to Y being the least flexible most durable. I was targeting F and J weighting, but found that X and Y were more prevalent.

Because I could order these custom belts for between \$3 to \$6 each, I decided to order my 4.5" x 14" belts in various abrasives and grits, which meant they came with various backings.

On the mounting front, I took a 3/4" hollow metal rod and cut it to 4.5". I used the original mount in a vise to locate and drill the holes, as I wanted it to be as precise as possible (picture at left).

The sanding belts arrived in about three days. I found out very quickly that the heavier backings were likely not going to work very well, as they were too stiff to make the turn into the mounting area. I'm sure I could do something to help form the belt for the bend, but I'll first see if the other, more flexible belts, work well enough.

I settled on one of the 60 grit belts, and punched out two holes somewhat centered over the area where the belt was spliced (picture at left). I then inserted the new mount and used the original allen head screws to tighten it all down. Fit perfect (picture at right). I applied enough tightening force to ensure the belt fit snug against the drum, but not so much that I might stress the splice.



GARAGE TOOLS (CON'T)

With the sanding drum all figured out, it was time for final cleaning, lubrication, and assembly. Below are the before (left) and after pics. I considered painting the unit, but decided to leave it alone and maintain that original, 40+ years of use look.



Now the big question—does it work?

I didn't want to do a test using the shoes I had on the '60 I'm restoring. After a bit of time, I found someone who was doing a brake job, and they happily gave me the used shoes. They were worn at the bottom much more than at the top, indicating that they likely did not initially fit the arch of the drum, assuming the rest of the system was working properly.



I took off one of the drums on my car, and used an Ammco 8500 Safe-Mike Drum Micrometer (another garage tool) to measure the current diameter of the drum (which happens to be an original). Came out to be .112 over, or 11.112" (see picture at right). I set the slide table to 11", and adjusted the Micrometer dial to 112 (see picture below). This sets the proper arc that will be ground into the shoe. On the Model 8000, an automatic .030" cam grind (undersizing) is built into the measurement of the micrometer.



Given the uneven wear of the shoes, it took about .160" of grinding to get the shoe to fully match up with the drum. The picture below left shows the surface of the brake shoe after grinding. Looks even and clean. 60 grit seems to be OK, but 80 grit might be better.



The picture at right shows how the shoe fit against the drum now that it has been arched to match up with the drum (minus the slight .030" CAM grind offset). The shoe pad is now much thinner as well.

I have a dust collection bag as originally designed, but a vacuum with a paper filter is best. Using this machine is best done outdoors as well.



With this test completed, I felt comfortable with using the machine, and proceeded to re-arch the shoes on the wheel I took the drum off of. Took about .040" off each shoe to match the arch of the drum.

Perhaps I should now get back to putting my car back together... Squirrel!

ARIZONA CHAPTER

