

# Newsletter\_

Volume 4 issue 2

The Front End

February, 2007

### **Chairman's Message**

Heart of Ohio Chapter-NCRS Members we are now into a full fledge winter and its time to tours, take in seminars and work those little kinks out of your Corvettes while the snow and salt keeps your Corvettes indoors.

This past January 27<sup>th</sup> the Heart of Ohio Chapter-NCRS Members had the opportunity to tour the Ohio State University Center for Automotive Research (CAR) see article later in the newsletter for a details of our tour. This next month has two events that pose interest for NCRS members. The first will be Queen City's annual Swap Meet in Cincinnati Sunday, February 18<sup>th</sup> held at Montgomery Chevrolet see attached flier. The second interesting tour is the Trim Parts tour. Two years ago when the Heart of Ohio Chapter-NCRS toured Trim Parts plant we were given a first rate tour by the VP of sales. The tour consisted of a detail explained process of Trim Part's Development and Production assembly lines of GM authorized vintage part reproduction. You must RSVP to obtain a head count for this Tour.

Earlier this fall, with the help of Randy Rink, Perry Yasher we put in a soft top on my 65' Corvette. In the process I have come to find out that the 65' Corvette I purchased came as a hard top only car. I purchase another deck lid to save the old one as an original deck lid. And, once again with the help of these friends we removed the old paint off the purchased deck lid and repainted to match the car. Prior to this fall I had purchased a soft top frame on EBay and sent the frame to the west coast for a full restoration. This past November, December and January we put on a vinyl soft top from an Al Knoch kit. I must say that this was a long process but with the help of

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the friends and purchase of the Al Knoch video this made the installation a smother process.

For a winter project these same friends and myself have taken the task of performing a tear down to my 65' Black Beauty's engine. This winter with the help of these same friends, we will remove the big block heads. The heads will be taken to a local machine shop to have the valve seats replace with harden material to allow the use of unleaded gasoline. I plan on replacing the Rochester Quadra Jet with a vintage Holley Four barrel for that era and aluminum intake to match.

If you have questions or wish assistance on engines, soft tops or our prep and painting process by all means just ask. Our trio would be glad to answer any of your questions and be glad to assist you if you care. I had many questions before starting the soft top installation but after going through this process I would do it again. The video gave us many tips that prove most helpful and eased the installation process. The extra set of hands and eyes also proved to be a god send when working with old manufacturing techniques.



minor of restoration projects.

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If you have a winter project you would like to share that could make an interesting article. Please contact us so we can feature you and your project in the Heart of Ohio Chapter-NCRS newsletter. We all can use a little help in the most

A reminder to all, the Heart of Ohio Chapter 2007 Club Calendars are still available for purchase. Ask Perry Yasher; Vice President for your orders for a club calendar for 2007. The Calendar would have pictures of past club events and provide members with a calendar of Heart of Ohio Chapter club events. The cost is \$15.00

If you are interested in a Heart of Ohio Chapter events Calendar for your workshop or office, contact Perry Yasher at pcyasher@columbus.rr.com.

As always save the wave!

Lou Zuniga

### **February Events**

February 10 HoO Board Meeting

Gueen City NCRS Chapter Annual

Winter Corvette and Chevy Swap Meet.

See February Calendar in this

newsletter for details.

February 18 Pittsburgh NCRS Chapter –

Restoration Seminar – Kenny Ross

Chevrolet – Irwin, Pa

February 24 HoO Group Tour @ 10:am – Trim Parts, See February Calendar in this newsletter for details and RSVP Info.

### **Chapter Meeting Notes**

Heart of Ohio Chapter-NCRS Member Tour of The Ohio State University's Center for Automotive Research (CAR) by Lou Zuniga

As with most events we often gather for food. Since this is no exception a group of us met at Bob Evans for breakfast before our tour with CAR. Nothing too exciting here, just a good chat with Corvette friends and catching up on time between the Christmas party and the present day. After our breakfast and reminiscing we meet up with Kris Sevel. Kris is a mechanical engineer and working on his masters at OSU CAR. Kris communicated to our group that we would wait for another team member to joins. So, in the mean time Kris explained that currently CAR was involved with five major projects.

The project Kris was involved with was referred to as the Buckeye Challenge X. The Challenge X project is sponsor by General Motors Corporation (GM), DoE, and other government and industry leaders to developed a new competition called Challenge X: Crossover to Sustainable Mobility. This ground-breaking, three-year competition will give engineering schools an opportunity to participate in hands-on research and development with leading-edge automotive propulsion, fuels, materials, and emissions-control technologies.

Seventeen teams have been challenged to re-engineer a GM Equinox, a crossover sport utility vehicle to minimize energy consumption, emissions, and greenhouse gases while maintaining or exceeding the vehicle's utility and performance.



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Year 1 will focus on modeling, simulation, and testing of the vehicle powertrain and vehicle subsystems selected by each school. In June 2005, teams will come together to undergo extensive judging and evaluation. Teams will receive scores for five reports, a Pre-Competition Hardware Evaluation, an Oral Presentation, a Live Simulation Event, a Trade-Show Booth Event, a Control Strategy Oral Presentation, and K-12 Education Outreach Program. The teams that demonstrate a mastery of the key aspects of modeling their powertrain choice and constructing and controlling the powertrain will receive a donated GM Equinox after the June 2005 competition.

Years 2 and 3 will require teams to develop and integrate their advanced powertrain and subsystems into a donated GM Equinox. At the conclusion of each of these competition years, teams will come together to undergo extensive judging and evaluation. Events will encompass energy use and emissions goals, vehicle utility and performance, engineering, and K-12 Education Outreach.

The criteria guidelines for the Challenge X are detail as:

The Challenge X teams will construct vehicles that, when compared with the stock vehicle,

- Significantly reduce well-to-wheels energy consumption;
- Incorporate technologies that increase energy efficiency and reduce fossil energy consumption and emissions on the basis of on a total fuel cycle (well-to-wheels analysis):
- Significantly reduce criteria tailpipe emissions and greenhouse gases;
- Increase pump-to-wheels fuel economy; and

 Maintain or exceed consumer acceptability in the areas of performance, utility, and safety.



### Kris Sevel

The Challenge X project consisted of 5 team leaders responsible for the following areas:

Overall Team leader: Kris Sevel

Electrical systems: batteries, switchboxes, wiring and

routing. Led by John Neal.

Powertrain: diesel engine and transmission. Led by Eric

Belknap

Control strategy: theoretical aspects of control and their

simulation. Led by **Kerem Koprubasi**.

**Systems integration:** vehicle controller programming, control systems implementation, CAN networking. Led by **Jason DiSalvo.** 

**Telematics**: driver information display, multimedia and data logging. Led by **Eric Diamond**.

System administration: web and computer maintenance. Led by **Eric Diamond**.

Total Team members were 12 to 16 depending where in their education cycle each of the team members were in their respective fields and graduating requirements.



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John Neal

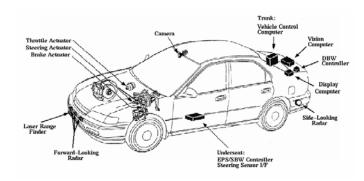
After our brief explanation John Neal joined our group and began our tour of the CAR facilities. John showed us several areas that students used as specific labs or work areas in performing electrical/electronic system building, mechanical or metal forming workshop and CAD/CAM design areas. Then John and Kris lead our group to a large room that housed multiple research areas for Fuel Cell testing room, Battery research testing room, a combustion engine Dyno test cell and a larger test cell that housed a single axle chassis dynamometer enclosed by a hemianechoic chamber. Encapsulating all these test cells and separated from these smaller areas this large room also were a number of research and testing vehicles.

One particular vehicle of interest was the Fuel Cell golf cart. At the present time was being fitted with two 1 KW Fuel Cell systems and a stainless steel Hydrogen tank encapsulated with a 2 inch covering of Carbon fiber for add security. These Fuel Cells generated the energy that was supporting the Nickel Metal Hydride battery cluster and the engine is a 48Volt DC motor. John Neal explained in simple terms the operation of the PEM Fuel Cell. PEM stands for Proton Electro-Chemical Membrane. The hydrogen is passed through one side of a membrane that gives up an electron and the other side oxygen is passed under pressure, the combine hydrogen and oxygen

give off the energy which in turn is used in the storage battery for energy. The by-product of the PEM of course is  $H_2O$  or pure water. The water is claimed to be clean enough to drink.



Another Project of interest within this same facility was the Center for Intelligent Transportation Research (CITR) has developed an automated vehicle demonstrating advanced cruise control, automated steering control for lane keeping, and autonomous behavior including automated stopping and lane changes in reaction to other vehicles. Various sensors were used, including a radar reflective stripe system and a vision based system for lane position sensing, a radar system and a scanning laser range-finding system for the detection of objects ahead of the vehicle, and various supporting sensors including side looking radars and an angular rate gyroscope. The vehicle was a black ION donated by Daimler/Chrysler.





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Last in this building was a Electronic Energy Integrated Motion research project



This project is slightly older technology that consisted of large banks of batteries on either side of the driver's cockpit. The driving engine, of course, is an electric motor but not the usual motor an AC motor. The electronics used is an inverter used to convert the DC battery stored energy to AC motor to utilize the high torque that an AC motor can provide.

At this point we were escorted to the student's project building were 6 various student projects were housed. This building were most of the activity was underway and were John and Kris project's was housed. The student projects consisted of:

- ChallengeX
- Formula SAE
- Baja SAE
- Buckeye Bullet
- OSU Solar
- OSU FIRST

The Challenge X as is explained earlier was John and Kris' project with team members fitting in an electric rear drive motor and transfer case. The front of the vehicle housed the retro fitted biodiesel engine.

The Formula SAE project consisted of students from a variety of majors from electrical engineering, mechanical engineering, welding engineering, business administration, marketing and arts & technology. These students are dedicated to the design, fabrication and racing of an open wheeled race car with limited horse power. The concept of the formula SAE race car is to allow students to participate in design, develop and fabricate a SAE formula race vehicle in a real world problem solving experience.

The Baja SAE project is based on a annual competition, this group of dedicated students from a variety of undergraduate fields, assemble with the same goal in mind: to design, build, and race an off-road vehicle in the Society of Automotive Engineers' (SAE) Mini Baja Design Competition. This student project competition features teams from over 350 colleges and universities from around the world. The day we visited, the student's work was creating a new chassis design with a partial frame in the welding stages.

The OSU Solar project is a project team made up of undergraduates with faculty advisors working to have a fully functional solar-powered car. The 1-person vehicle will be roadworthy and highly efficient, capable of traveling at highway speeds using only the power of the sun. The day our visit took place, we noticed that the team members must have been out in the warmer climate searching for some sun. The activity was not in the project and the time but must have been in a design stage.

The Buckeye Bullet project has been designed, built, and maintained by undergraduate and graduate students at Ohio State. As of October 13th, 2004 the Buckeye Bullet is the fastest electric vehicle ever recorded. The team continues to pursue and improve the electric land speed



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record while promoting world-class engineering. The word is that this year team was in the design of an 800 hp electric motor with a new battery energy storage system in hopes of beating the record set from last year. The Bullet set the land speed record for and electric power vehicle at 323 mi per hour. The AC electric motor runs for only 90 seconds. Since University under law is not allowed to have students drive a car in excess of 100 mi per hour the car has a professional driver SCCA classified.



Lastly the OSU First Robotics Project is an educational outreach program of the College of Engineering at The Ohio State University. We mentor high school students in a national robotics competition called FIRST (For Inspiration and Recognition of Science and Technology). The high school students we met up with were from Columbus school for girls. The group housed a good part of the back portion of the building and much activity was in progress. Students work on chassis, electrical, and computer functionality. There must have been 20 to 30 students in quite a activity of robot assemblies.



In conclusion this tour was most illuminating. In our talk with John and Kris we concluded that the Heart of Ohio Chapter-NCRS would return in warmer weather and show off some of our Corvettes. So, I claimed I would keep in touch and at a later date would talk about a show at CAR with Heart of Ohio Chapter-NCRS Corvettes on display.

If you would like to read more about what is happening check out the CAR website. http://car.eng.ohio-state.edu/

### **Articles of Interest**

I found this article in the January 2007 issue of "For Vettes Only" the Newsletter of the National Corvette Owners Association.

### **Snake Oil?**

For over a year, oil companies have been marketing American Petroleum institute (API) approved motor oils blended with greatly reduced levels of zinc dithiophosphate (ZDDP) and other anti-wear additives like manganese and phosphate. This change in formulation was made because such anti-wear additives reduce the effectiveness of catalytic converters used on 1973 and newer cars and eventually damage them. ZDDP is also an air pollutant.

The first oils affected by new regulations calling for the additive levels to be reduced were those bearing the API's Service Symbol and Certification Mark "SM." These are oils made for the latest generation of automobile engines. However, they are being marketed as if they were safe for ALL car engines. Now, there is much debate over whether this is true.



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It has been discovered that the new SM oils provide less boundary lubrication and tend to increase sliding and high pressure (EP) friction in the engines of older cars. This has led to such

the engines of older cars. This has led to such problems as the total failure of a new camshaft and a new set of valve lifters in a vintage sports car after just 900 miles of use. The engines most susceptible to such damage seem to be primarily those of the "flat tappet" type made in the 1960s and earlier.

When the parts involved in one failure were returned to the supplier, he went through the trouble of verifying that a molybdenum disulfide camshaft assembly lubricant had been used when the sports car's valve train was re-assembled and that proper break-in procedures had been followed.

After checking with Delta Camshaft, the parts supplier learned that such failures have been more frequent since the API approved the use of the new oil formulations last year. Another company — Crane Cams — is even recommending the use of an oil additive during break-in. Comp Cam's Technical Bulletin no. 225 recommends using both an assembly lube and an oil additive.

Engine rebuilders believe that the reduced levels of zinc, manganese and phosphate are causing very early destruction of camshafts and cam followers. The American Engine Rebuilder's Association (AERA) issued Technical Bulletin No.TB2333 specifically to address this growing problem. Clevite, a major supplier of engine hearings, also says that it is aware of the problem.

Some automakers insist the first oil change is the only time additives are needed. However, those who service and repair older cars remain skeptical. Many recommend using new API CJ-4 dieselrated oils — such as Delo or Rotella in older

engines. These oils are generally available at auto stores and gas stations.

Redline Oil Co. says it is well aware of the olderengine problem and still uses the old levels of anti-wear additives in its products. Redline does not produce API-approved oils, so the company doesn't have to comply to API guidelines. Redline is telling enthusiasts to use its street-formulated synthetic oil. Valvoline also offers an "Off-Road" 20W-50 oil that doesn't comply to the new API formulations. Castrol, on the other hand, says that only its diesel - rated oils should be used in older cars.

Chevrolet is also aware of the problem. It recommends adding EOS oil fortifier at each oil change, which costs about \$12 for an 8-ounce can. For cars that use "engine oil" in their gearboxes, General Motors sells oil specifically formulated for Manual Gearboxes with Brass Synchronizers. Redline offers a similar product.

A lengthy article on this topic was written by Neil Maken and published in Skinned Knuckles magazine. It was reprinted in the Oct. 5, 2006 issue of Old Cars Weekly. To learn more about Maken's article visit http://skinnedknuckies.net/pages/index.htm.

Reprinted from "for Vettes only" January 2007 published by the National Corvette Owners Association.

### **Authors Wanted**

Do you have anything that is Corvette or car related you want to share with our members? A special vendor you found, a tip on how to fix something, a story about a corvette experience.



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Please take a few minutes and send me an email. I will be glad to put your article into our Newsletter. You can reach me at **Herb@harltons.com** or (614) 847-0774.

Moving?

Let us know if your mailing address or your email address has changed so, we can update our records and keep you up to date. Please send changes to Garry Brown our acting Membership Chairman:

Garry Brown 614-793-9467 tpgdirop@aol.com



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# Calendar Of Events

**Dates in Bold are Heart of Ohio Chapter events** 

Note – Many of our 2007 Events are still in the early planning stages – for further information please contact our new Event Chairman Steve Steffensen.

<u>Dates underlined are NCRS chapter events</u>

Dates in italics and underlined are Corvette Alliance events

Dates in plain type are other Corvette related events

### February 2007

February 3 HoO Board Meeting

February 18 Queen City NCRS Chapter Annual Winter Corvette and Chevy Swap Meet.

Location:

Joseph Chevrolet 8733 Colerain Avenue

Cincinnati, Ohio

(3 miles south of I-275; ½ mile north of Ronald Regan Highway)

Time: 8:00 am – 2:00 pm General Admission: \$3.00 Food and Drinks Available

February 18 Pittsburgh NCRS Chapter – Restoration Seminar – Kenny Ross Chevrolet –

Irwin, Pa

February 24 HoO Group Tour @ 10:am – Trim Parts, 2175 Deerfield Road, Lebanon,

Ohio 45036 (I-71 to Exit 28 – Ohio – Rt. 48). For those wishing to meet for breakfast be at the Cracker Barrel at I-71 and Stringtown Road (Exit 100) in Grove City at 7:30am if eating or 8:30am if just caravanning. Please RSVP

to Steve Steffensen at shsteffensen@sbcglobal.net or 614-790-

6967regarding your plans.



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**March 2007** 

March 11 Pittsburgh NCRS Chapter – Swap Meet – Tom Henry Chevrolet – Bakerstown

**Chevrolet** 

March 17 Dayton NCRS Paint Seminar - location and time to be announced.

March 24 Corvette Parts Auction, Cincinnati, Ohio. (For more information, call

VanDerBrink Auctions at 605-201-7005 or 507-673-2517 or visit

www.vanderbrinkauctions.com)

March 25 Glass Society Corvette Associations - Corvette Parts Swap 'n Sell - Allen

County Fairgrounds, Lima Ohio – 9am-3:00pm

<u>March 30-31</u> <u>Indiana NCRS Chapter Meet – Kruse Museum – Auburn. Indiana</u>

<u>April 2007</u>

April 21 HoO Group Trip – Packard Museum Tour

**May 2007** 

<u>May 6</u> <u>Pittsburgh NCRS Chapter – Tom Henry Pennies for Patience Charity-</u>

Bakerstown, Pa.

May 13 HoO Spring Road Tour – Old Mansfield Prison

May 17-19 Garden State Regional, Edison New Jersey

<u>June 2007</u>

June 1-2 Michigan NCRS Chapter – Judging Meet – Cauley Chevrolet – West Bloomfield

Mi.

<u>June 7-9</u> <u>North Central Regional – Rochester, Minnesota</u>

June 10 Pittsburgh NCRS Chapter – Judging Meet – Kenny Ross Chevrolet – Irwin, Pa

June ?? Corvettes at Roscoe Village (Alliance Event)

June 14 -16 Bloomington Gold – Pheasant Run Golf Club – St. Charles, IL Lake Erie Chapter NCRS – Chapter Meet – Hudson, Ohio

June ?? Chapter Picnic (Date TBA)

June 30 Miami Valley Chapter NCRS – Chapter Meet – Dayton, Ohio



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**July 2007** 

July 14 - 16 Pittsburgh NCRS Chapter – Summer Road Tour

July 22-26 NCRS National Convention – Boston (Marlborough), Massachusetts

July 28 Alliance Gathering IV – Lancaster Ohio

August 2007

August 4 HoO Judging School

<u>August 10-12</u> <u>Illinois Chapter Meet – Galena, Illinois</u>

August 18 Woodward Dream Cruise – Detroit, Michigan

August 19 <u>Pittsburgh NCRS Chapter – Road Tour/Johnstown Cruise-In</u>

August 24-26 NCRS Gallery at Carlisle – Carlisle, Pennsylvania

(Possible Unofficial HoO Road Trip)

September 2007

September ?? HoO Fall Tour (Date, etc. TBA)

<u>September 7-8</u> <u>Cincinnati Chapter NCRS – Chapter Meet – Cincinnati, Ohio</u>

September 9 Corvettes at Ohiopyle

September16 Pittsburgh NCRS Chapter – Picnic at Cedar Creek

October 2007

October ?? HoO Chapter Judging Meet, Lancaster Ohio (Date TBA)

October 14 Pittsburgh NCRS Chapter – Fall Tour

November 2007

November ?? Hoo Chapter Elections and 2008 Planning Meeting (Date TBA)

November 18 Pittsburgh NCRS Chapter – Judging School at Dennis Mitchell's

December 2007

December ?? HoO Christmas Party (Date, etc TBA)

January 2008

<u>January 17-20</u> NCRS Florida Winter Regional Meet – Kissimmee, Florida



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**April 2008** 

April 17-19 Southwest Regional, Chattanooga, Tennessee

**May 2008** 

May 15-18 NCRS Michigan Regional Meet – Novi, Michigan

<u>June 2008</u>

<u>June 12-14</u> NCRS Pennsylvania Regional Meet – Seven Springs, Pennsylvania

**July 2008** 

<u>TBA</u> <u>NCRS National Convention – St. Charles, Missouri</u>



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# **HEART OF OHIO CHAPTER OFFICERS**

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# **CHAPTER REGISTRATION**

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First Name:	MI:	Last Name:		
Spouse Name:	MI	Last Name:		
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City, State Zip:				
Home Phone:		Business Phone:		
Fax Number:		Email Addr	ess:	
National NCRS Number:				
Corvettes Owned:				
Year:	Body:	Color:	HP:	
Year:	Body:	Color:	HP:	
Year:	Body:	Color:	HP:	
Year:	Body:	Color:	HP:	_
Year:	Body:	Color:	HP:	

Complete this form and enclose check or money order in the amount of 20.00, made payable to "Heart of Ohio Chapter — NCRS" and send the completed form to:

Garry Brown HoO Chapter NCRS Membership Chair 2416 Summit View Road Powell, OH 43065-8400 tpgdirop@aol.com

# WINTER CORVETTE & CHEVROLET SWAP MEET

# \*\*\*INDOORS\*\*\* SUNDAY FEBRUARY 18, 2007 8AM UNTIL 2PM

# PRESENTED BY **QUEEN CITY NCRS**

### **HELD AT**

# **MONTGOMERY CHEVROLET**

(COLUMBIA CHEVROLET)
9750 MONTGOMERY ROAD
3 MILES SOUTH OF 275
2 MILES NORTH OF RONALD REAGAN HIGHWAY

VENDORS WANTED

10 \* 10 SPACE \$10

SET UP 6 – 8AM

CORVETTE AND CHEVROLET ONLY PLEASE

**AMPLE PARKING** 

GENERAL ADMISSION \$3 FOOD AND REFRESHMENTS AVAILABLE

> FOR INFORMATION CALL: STEVE HACK (513) 553-2080 JIM DUMONT (513) 761-9593