



MACC "TRACKS" MONTHLY NEWSLETTER

February - 2008

www.midalcorvette.com

2008 CHAPTER OFFICERS

President & Executive Board Member:

Jeff Williams

Vice President, Show Chairman & Executive Board Member:

Terry Truett

Secretary & Executive Board Member:

Jane Lewis

Treasurer & Executive Board Member:

Sara Boehme

Past President & Executive Board Member:

Hoke Graham

Membership:

Jack Kemp

NCM Ambassador:

Fred Atkins

Newsletter:

Bill Ringler

Web Site Co-Chairs:

Paul Boehme & Thom Williamson

Social Chair:

Cathy Crapet

Sunshine Chair:

Babs Lucas

MESSAGE FROM THE PRESIDENT

by Jeff Williams

Wow! January is past, and we are only a little more than 10 months away from Christmas! I better start my list now. Let's see, 1). New 2009 ZR1, 2). Tires for life, 3). Unlimited track time at Barber Motorsports Park, 4)... I will have to finish the rest later.

I am really looking forward to the World of Wheels car show on February 8th, 9th, & 10th. It sounds like Hoke & Company really has a great display planned for us. I am glad that a lot of you have signed up to support the club and answer questions about the club and the Corvette in general. There will be a lot of great cars at the show to see, and you might win the Rock 99 Scion, Kia, or Hyundai, or whatever it is that they are giving away this year.

This month kicks off our MACC bowling league. Dust off those old bowling balls, and go out and get yourself a new pair of shoes! I haven't seen the new bowling shirts, but I bet they will have a Corvette on them somewhere! Stay away from the splits, keep 'em out of the gutter, and contrary to all you C5 and C6 owners, a "spare" is a good thing!

I hope all of you are wrapping up your winter projects, getting ready for the spring car show season. It appears to be a good one this year. Take advantage of those sunny days

when you can. Have a great month, and as Jim Willis always says, "Remember to Save

the Wave.

NEWS FROM THE VICE PRESIDENT & SHOW CHAIR

by Terry Truett

Hello everyone! Can you believe it, the World of Wheels is this week, and the MACC Car Show is only 4 weeks away. Hoke has put together another wonderful display of Corvettes for the WOW which provides an avenue to further promote our passion to the public, gain new members for the club, and get the word out about the Car Show. I hope everyone can get out and support this great effort.

The Car Show is closing in fast. The pre-registrants continue to increase and we have inquiries from all over the southeast, the word is out there! This year, as in many years past, where I borrowed the idea, I wanted to offer each member of the club an opportunity to have a personal part of the show by offering member trophies. These individual trophies are for whatever category you wish to award: Best wheels, best paint, best pimped out Vette etc. To get in on this opportunity, let me know immediately, the cost of the trophy is \$50, and the remainder after cost will go to charity.

So far we have 40 trophies for show, plus, an additional 17 sponsored by club members so far. LET ME KNOW IMMEDIATELY IF YOU WANT A TROPHY.

While you're out eating, purchasing car parts, purchasing most anything, ask your favorite restaurants, businesses, etc. to sponsor some stuff for our goody bags. Money, coupons, more money, pens, koozies, money and any other type of promotional items. DO NOT be afraid to ask, all businesses are accustomed to providing cash and promo items as a means of advertisement for their business. Check out our car show web site, www.maccattack.net, go to the sponsor section and you can grab a copy of the sponsorship letter to provide to your favorite vendors. We have two charities to support this year, so its time to "bow up" and do your part.

Thanks to EVERYONE in supporting this years events! This show is going to be a lot of fun for everyone! God Bless



NATIONAL CORVETTE MUSEUM NEWS

by Fred Atkins

The National Corvette Museum's annual C5/C6 Bash is scheduled for April 24-26, 2008. They will host a ground breaking ceremony in recognition of the Museum's 47,000 square- foot expansion scheduled for completion in 2009.

The National Geographic Adventure Magazine has named Bowling Green one of the Best Places to live and play in the United States. Bowling Green is one of eleven cities in the "Top Small Town" category. Bowling Green was recognized for its proximity to Nashville (which made the top urban city list), local parks and road-bike loops and the National Corvette Museum and GM Corvette plant. For additional information, go to:

<http://www.nationalgeographic.com/adventure/relocating/best-places-to-live2007>.

Corvette Chronology:

January:

- Q. How many times does the 2008 edition of the Indianapolis 500 represents Corvette?
Consecutive years?
A. 10 times and fifth consecutive year

February:

- Q. When did the National Corvette Museum open?
Q. Who operates the Museum?

2008 CORVETTE MUSEUM SPECIAL EVENTS *

[C5/C6 Bash](#)

April 24 - 26

[Anniversary Celebration/HOF](#)

August 28 - 30

[C4/ZR-1 Gathering](#)

May 8 - 10

[Historic Motorama II](#)

September 10 - 16

[Corvette Forum Cruise-in](#)

May 22 - 24

[Z06 Fest](#)

September 11 - 13

[Alaskan Cruise](#)

May 30 - June 6

[R8C/Xperience Reunion](#)

September 25 - 27

[VIR HPDE](#)

June 30 - July 1

[Georgia Crossroads Vette Rendezvous](#)

November 6-8

[Rd America HPDE](#)

August 11 - 12

Note: in 2007, 45,363 tourist visited the Corvette plant, compared with 45,859 in 2006.

MACC NATIONAL CORVETTE MUSEUM MEMBERS

(please let us know if your name needs to be added to this list)

Fred Atkins	Paul & Sara Boehme	Tony & Cathy Crapet
Ronnie & Cheryl Folds	Chris Gilliland	Hoke Graham
Steve & Susie Hawk	David & Arlene Johnson	Ronnie & Kathie Jones
Chuck Lewis	Jane & Jocko Lewis	Doyal Marks
Terry & Sharon Mathews	Jimmy & Beverly McCutcheon	Billy & Debbie Porter
Bill Ringler	Basil Sloan	Bob Stewart
Chris Touchton	Terry & Toby Truett	Conrad Whitten
Jeff & Evelyn Williams	Jim & Sherry Willis	Dale Zimlich

NEWS FROM THE SOCIAL CHAIR

by Cathy Crapet

February Meeting

Sarris's Cafeteria
Highway 31 - Pelham
Lunch - 2:00
Meeting - 3:00

March Trip Reminders

Seventh Annual Lower Alabama Corvette Club Show
"Gulf Coast Fun in the Sun"
The Wharf - Orange Beach
March 14-16

Please contact Cathy Crapet if you make reservations for this trip.

Corvette Expo
Sevierville, Tennessee
March 28-30

Contact Cathy Crapet if you need more information about either trip.

I wanted to let you know that I will be sending out details for the Dothan/Panama City Beach Caravan. The trip is May 15th -18th. Thursday night will be spent in Dothan. Friday and Saturday nights will be in Panama City. Go ahead and mark your calendars and watch for information. It will be a great trip

DEEP THOUGHTS BY THE "X"

By Chris Touchton

Suzan and I would like to thank all of you for your prayers, cards and phone calls over the past few weeks.

NEWS FROM THE SUNSHINE CHAIR

by Babs Lucas

For the first month of a new year, birthday cards were sent to four members and three couples received anniversary cards. Heartfelt sympathy cards were sent to Evelyn Ringler, in the loss of her aunt; and two cards were sent to Chris and Suzan Touchton, in the loss of a mother and an aunt. A floral basket was sent to Chris and Suzan in memory of his mother.

Please remember your friends in prayer, asap, (as soon as possible). Looking forward to the "heart" month of February.

ROCKY'S STORY - PART X

(It's been real quiet around here)

By Jeff Williams

There is not much to report this month on Rocky. The cold weather has been tough on me. I do most all of my work in a tent out back, so rain, wind, and even snow REALLY slows me down.

This month, I have turned back to engine tuning. In 1982 the L83 was equipped with an electronic fuel injection system dubbed "Cross Fire Injection". The engine was called L83 and had the same block casting# as the L81 and 1980 late production L82's. The Cross-Fire Injection system had two throttle bodies with ECM controlled fuel injectors.

The 1982 ECM has more functions than just the spark advance and smog pump that the 81 ECM has. It also controls fuel and air flow to the engine and transmission converter lockup. Idle air flow is controlled in the same way as in the L81, with an Idle Air Motor located in each of the two Throttle Bodies. Fuel requirements are controlled by monitoring the engine load, throttle position sensor and combustion efficiency. Combustion efficiency is monitored by the O2 sensor. It indicates the amount of oxygen in the exhaust system. When there is too much oxygen in the exhaust system it is assumed that not all the oxygen has burned and the engine is running lean. The ECM enters fuel "enrichment" mode and more fuel is added. This is done to the point that the O2 sensor senses no oxygen in the exhaust. Then the ECM enters "enleanment" mode. Less fuel is added and the engine will start to run leaner to the point that the O2 sensor notices a lean condition. Then "enrichment" mode is entered again. It does this several times a second. This way the engine will always (theoretically) run in the vicinity of an ideal fuel/oxygen mixture.

This, is what I am tuning. The first step is to make sure all the sensors are within specifications. I have ordered a new oxygen sensor and a new manifold air pressure sensor. Once these are on, I will move to the Idle Air Monitors and the Throttle Position Sensor. Here is a description of the car's injection system (taken from the Crossfire Injection Vault website):

The two throttle bodies are mounted on a deck lid which is mounted on a manifold bottom. The manifold is a single plane type manifold with relative small and long runners. The small long runners promote low end torque but hurt high end horsepower. The pulsing of the injectors is controlled by the ECM this is known as Pulse Width Modulation (PWM).

THE ECM, or Engine Control Module is a computer, which is mounted in the drivers side storage compartment in front of the battery. The ECM is the "brain" of the fuel injection system. The '82 ECM is the 1225550. The ECM is divided into three major sections:

1. The ROM (READ ONLY MEMORY.)
2. The PROM (PROGRAMMABLE READ ONLY MEMORY) also known simply "the chip"
3. The RAM (RANDOM ACCESS MEMORY).

The ROM contains the basic set of instructions for the ECM to follow. The programming in this chip cannot be erased or changed. The ROM is NON Volatile.

The PROM works along with the ROM to fine-tune the functions of fuel and timing control. The PROM can be replaced by a "power" chip (also a prom) or an EPROM (or even EEPROM) from which the data can be erased and changed. The PROM is NON Volatile.

The RAM has three primary functions:

1. To act as scratchpad (temporary memory) in case of a mathematical calculation.
2. To store BLM (Block Learn Multiplier) information when the engine is off or the ECM is in open loop.

3. To store fault (trouble) codes. These codes are stored for 50 starts or whenever the power (orange wire on junction block for '82 Corvette) is disconnected. Unlike the ROM and PROM the RAM is volatile.

The ECM controls the injection system, it functions in either one of 3 different modes

1. Shutdown Mode. When the ignition is off for 2 or more seconds. Only the RAM (trouble codes) and the BLM remain powered.
2. Startup Mode. When engine is cranked. Timing is locked at initial startup and air/fuel ratio is enriched. This mode is on for about two seconds after starting to ensure the engine will continue to run.
3. Running mode. Divided into Closed Loop or Open Loop operation:

CLOSED LOOP.

The red arrow doesn't indicate a signal, it's an event. Due to the more/less pulsing of the injectors a rich/lean condition will be observed and the ECM will compensate for this.

In closed loop mode the ECM has 2 different modes;

- A. Enleanment Mode - When the throttle is closed.
- B. Enrichment Mode - At wide open throttle, High engine load, High engine RPM, or Overheating engine. (the cold fuel is a great contributor to engine cooling).

The ECM is normally in enleanment mode, it constantly lowers fuel addition. When the oxygen sensor detects a lean condition enrichment mode is entered until the oxygen sensor doesn't sense a lean condition anymore. Then enleanment is entered again. This (theoretically) guarantees an "ideal" air/fuel ratio.

OPEN LOOP.

- A. Fuel cutoff Mode - When the throttle is closed and the MAP sensor notices a negative load (deceleration) until about 1500 RPM..
- B. Clear flood Mode - When throttle is depressed more than 80% while cranking. Injectors are turned off or air/fuel ratio is lowered to 20:1.
- C. Limp Home Mode - When there is major trouble with any of the critical sensors/actuators.

The ECM monitors different sensors and controls the injectors and actuators to respond to changes/demands.

The Oxygen sensor is the only sensor on the car that creates its own voltage and has therefore only one wire coming from it. It's actually a chemical voltage generator, based on the potential difference between the oxygen rich condition in outside air and the lean condition in exhaust gas. When it's at its operating temperature of about 600 Fahrenheit it will produce a Voltage ranging from 100 to 900 mV. At operating temperatures the sensor will respond to changes in the oxygen content in the exhaust gasses. It creates a potential difference between the "clean" oxygen rich outside air and the oxygen poor exhaust gas. The voltage potential is developed due to chemical imbalance between the two oxygen concentrations. When the voltage is low (oxygen levels in exhaust high) the ECM will assume the engine is running lean and thus enter the enrichment mode. Lean conditions usually produce voltages lower than 450mV, rich will be over 450mV. As you can see there is a very critical value for "ideal" air-fuel ratio. This is done to ensure that the engine never runs very lean/rich. This way a nearly ideal air fuel ratio is always obtained, the engine never gets the chance to run off this point by far without the ECM noticing it. Due to the nature of the oxygen sensor it has a hard time distinguishing between a perfect and a rich running engine, when all oxygen is burnt the mixture can be ideal or rich. The oxygen sensor doesn't recognize surplus (unburnt) fuel in the exhaust. Therefore the ECM will always assume the engine is running rich unless it notices a lean condition.

The MAP sensor or Manifold Absolute Pressure sensor monitors the manifold pressure and is an indicator for engine load. Also the ECM calculates the quantity of incoming air from the signal of this sensor.

The TPS or throttle position sensor is actually a three wire potentiometer. It's got a 5V reference sent to it by the ECM. The TPS is grounded through the ECM. The 5V is lowered to a different voltage through the potentiometer (read variable resistor) When at no throttle the resistance is lowest and the voltage is also lowest (normally set to 0.525V ±0.025) When at full throttle the resistance between the 5V and the ground is highest (theoretical infinity) and the potential difference (voltage) will be 5V.

The Idle Air Control valve or IAC (stepper motor) is a motorized plunger that regulates the idle speed of the engine by regulating the incoming airflow. The IAC has 256 positions. At normal idle it's somewhere around position 20. When full throttle is applied the IAC valve completely opens.

The CTS or Coolant Temperature sensor on the manifold sends a signal to the ECM. The one on the drivers side cylinder head goes to the temperature gauge, the passenger side one controls the auxiliary fan.

The EGR or Exhaust Gas Recirculation is a method to decrease emissions by venting exhaust gas into the intake (about 7% of the intake volume is rendered "useless" due to this). It also decreases detonation due to the uncombustible (inert) exhaust gas. The EGR position is ECM controlled via the EGR position control solenoid. This is a solenoid that regulates vacuum to the EGR valve thus opening/closing it.

The AIR system or Air Injection Reactor consists of an AIR pump or just SMOG pump, that pumps fresh air into the headers/catalytic converter. When the engine is in closed loop air flows into the headers (and cylinder head exhaust ports) to speed up O2 sensor warm-up. When the engine is running in closed loop air is pumped into the catalytic converter to speed up the chemical reactions taking place there. Also during deceleration the air is vented to the atmosphere to reduce detonation in the exhaust. The route the air travels is regulated by a control solenoid (that is ECM controlled)

When all service parts of the Cross-Fire system are changed at the right intervals the Cross-Fire system needs no or only minor upkeep to keep it functioning properly, thus the claim of some that buying a Cross-Fire Corvette is asking for trouble is a myth. Most people that experience problems with the Cross-Fire system have mingled with parts they don't understand or have a vacuum leak somewhere.

For some of you, this may be boring, for others, it may be monotonous, but for those that are interested in what makes their Corvette go, this might just be interesting.

Next month, maybe I will actually DO some work on the car.

CORVETTE SALES ON DECLINE, BUT PLANT REMAINS AT FULL SPEED

By Ameerah Cetawayo

Sales for the Chevrolet Corvette were down almost 8 percent in 2007, but GM's Bowling Green Assembly Plant will not change its production schedule.

About 34,000 Corvettes were sold in 2007 - down from nearly 37,000 in 2006, according to GM spokesman John McDonald. GM's high performance sports segment sales were down in 2007 by almost 10 percent. About 40 percent of that sports segment is Corvettes.

McDonald said the declines are a reflection of the fluctuations and pressures on the overall economy and housing market.

"High-end cars like the Corvette are discretionary vehicles," McDonald said, pointing out that discretionary items are usually the first things consumers cut back. GM said the Corvette did gain

market share as its competitors saw even sharper declines.

GM's Bowling Green plant will maintain its current production schedule, despite sales figures, because demand will meet current production output, according to General Manager Wil Cooksey, who begins the process of handing over control to the new general manager for the plant, Paul Graham, today. Cooksey will officially retire in March.

"Our normal working hours will continue and we have no scheduled downtime, other than what we regularly have," Cooksey said.

The plant employees about 1,000.

Corvette gained market share last year at the expense of its competitors in the same segment who also posted sales declines, McDonald said.

Sales figures for 2007 show Porsche sales were down 7 percent, BMW down 18 percent, the Mercedes SLK down 30 percent, the Dodge Viper down 70 percent and the Ford GT, which will no longer be in production, was down 88 percent, McDonald said.

While there's plenty of anticipation about the Corvette ZR1 Coupe's debut at the North American International Auto Show next week in Detroit, there's also talk that new fuel efficiency standards will affect the traditional muscle car.

Cooksey says he won't speculate on the matter, but pointed out that 30 miles per gallon is already attainable with the Corvette, and the vehicle isn't far away from new rules that aim for all new passenger vehicles in the United States to average 35 mpg by 2020.

The 2009 Chevrolet Corvette ZR1 comes with a price tag likely to exceed \$100,000. With a 620-horsepower engine, Cooksey said the new Corvette takes a lesson from those who professionally race the vehicle and aims to give consumers more performance.

CALENDAR OF EVENTS

February - 2008:

- 4th MACC bowling league at 5:45 - Vestavia Bowl
- 8th World of Wheels car show (contact Terry Truett)
- 11th MACC bowling league at 5:45 - Vestavia Bowl
- 17th MACC monthly meeting at Sarris's Restaurant in Pelham**
- 18th MACC bowling league at 5:45 - Vestavia Bowl
- 25th MACC bowling league at 5:45 - Vestavia Bowl

March - 2008:

- 3rd MACC bowling league at 5:45 - Vestavia Bowl
- 8th MACC Attack Annual Car Show (contact Terry Truett)**
- 10th MACC bowling league at 5:45 - Vestavia Bowl
- 14th Lower Alabama Corvette show at the Wharf in Orange Beach (contact Cathy Crapet)
- 16th MACC monthly meeting**
- 17th MACC bowling league at 5:45 - Vestavia Bowl
- 24th MACC bowling league at 5:45 - Vestavia Bowl
- 28th Sevierville, TN Corvette Expo (contact Cathy Crapet)
- 31st MACC bowling league at 5:45 - Vestavia Bowl

April - 2008:

- 7th MACC bowling league at 5:45 - Vestavia Bowl
- 14th MACC bowling league at 5:45 - Vestavia Bowl
- 20th **MACC monthly meeting**
- 24th C5/C6 Bash at the Corvette Museum in Bowling Green (contact Jeff Williams)

May – 2008:

- 15th Circle City Corvette Club annual caravan to Panama City Beach (contact John Hickman at 334-347-5908 or Website www.circlecitycorvettes.com)
- 18th **MACC monthly meeting**

February 17th MACC Monthly Meeting
Sarris's Restaurant
Route 31 - Pelham
2:00 lunch
3:00 meeting



Petit LeMans at Road Atlanta

