Shelby Life

Shelby American Automotive Club – Motor City Region

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2004 SAAC-MCR Fall Picnic *by Mike Nyberg, Images by Phil Jacobs*

Left to Right - First Row: **Mike Nyberg, Tom Greene, John Yarema and daughter Genevieve.** Second Row: **Sandy Yarema, Lynn Raines, Alyssa Jacobs, Arlene Jacobs, Sandy Tweedle, Rich Tweedle, Erin Lindsay and Penny Nyberg.** Third Row starting to the right behind Erin Lindsay: **Jack Stinson, LuAnn Stinson, Bill Rowe, Sean Foltz and Stefanie Darby.** Back Row: **Tim Young, Judi Ricci, Dean Ricci, Gary Roys, Cindy Roys, Jerry Helfman and Will Weber.**

30+ SAAC-MCR members, relatives and friends gathered at Turn 6 of the Waterford Hills Race Course on October 10th. It was the last racing event at the Waterford Hills Race Course and the SAAC-MCR annual picnic. It was an opportunity to watch others race, enjoy one another's company and eat some good food. Rich Tweedle arranged a catered lunch of fried chicken, potato salad, and brownies. Lynn Raines made some delicious chocolate chip and peanut butter cookies, which we all enjoyed. We also had a 10 X 20 canopy for sun protection.

Several club members participated in the parade laps during the afternoon corner workers' break. The parade laps lasted almost a half hour. John Yarema and I traded cars for the occasion. His 1965 Mustang has side exhaust with Series 40 Flowmaster mufflers. I enjoyed making the exhaust bark coming out of Turn 6, to impress the club members. The car feels and sounds like a race car. However, his car isn't as loud as Phil Jacobs' 1968 Mustang T/A car. John drove my 1994 Mustang GT and he said it felt too soft and comfortable. He just isn't used to power steering. It was nice of him to offer to trade cars for the event. We also had members go out at the lunch break. Rich Tweedle rode with Erin Lindsay in her 7000 Series cobra.

John Eichholz, a fellow SAAC-MCR member, raced his car during the day. Many of you will remember his as our favorite Turn 1 corner worker at our

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Austin Craig has a New Career

by Austin Craig

After 26 years in Detroit, the last 21 with J. Walter Thompson, Barbra and I decided to retire and move to Florida. I enjoyed my time at J. Walter Thompson as it gave me the opportunity to work with wonderful Ford clients from Ford Division, Team Mustang, Ford Racing, Ford SVT, Ford Truck and Ford Customer Service Division. Working on the Ford business, Mustang and racing in particular was a goal of mine since I attended the Trans-Am and Nascar races when I was in school and the Marine Corps.

After being one of the Founding Members of SAAC IN 1975, I was delighted to join SAAC-MCR and be able to enjoy a well run, fun oriented region. Back when my first 1966 GT350 (SFM6S1305) sustained a crunched side brake scoop (some graduate of the Ray Charles School of No Performance Driving in a Chevelle backed into me in a parking lot) and I was bemoaning the fact that I could not get a replacement at a Ford dealer to Jerry Titus. The 1967 Trans-Am Champion driving the famed Terlingua Racing Team Mustang said "Form a club"! "You guys can then get the parts made you need"! I know if Jerry could see the SAAC -MCR in action today, he would agree his idea was right on. With this in mind, it was always fun to have SAAC-MCR members selected for Ford sponsored events like the Autorama Mustang display, the North American International Auto Show press conferences, Team Mustang, Mustang Alley at the Woodward Dream Cruise, Ford 100th Anniversary Celebration race section and at the unveiling of the 2005 Mustang, on stage at the Rotunda. I really enjoyed the look on Tom Greene's face when his 1966 Shelby was placed in a special location at the Ford 100th!! All of this was fun and I will miss all the great people who make SAAC-MCR such a first-class organization.

Retiring to Florida, I learned all about the installation and removal of hurricane shutters some three weeks after we moved in! One day after fortunately dogging two of the hurricanes, I was waxing my Steeda Mustang when I received a call from Steeda Autosports. After owning a Steeda Mustang and Steeda Focus I likened the company to a current day Shelby American. I was too young to work at 6501 West Imperial Highway, but I would often dream of being Marketing Director for the company. So when offered the position of Vice President, Marketing at Steeda Autosports, my retirement ended instantly. There are so many similarities between the two companies, they both build and race performance Mustangs, have extensive parts programs, work with racers in road racing, and have a talented staff of enthusiasts working there. Steeda Autosports like Shelby American started as one man's idea and grew to be perfect model of the successful American Dream. To work here is a fulfillment of my wildest imagination and I consider myself most fortunate.

I am also looking forward to winter and driving around with the top down in January. However, I will return to Detroit for the North American International Auto Show in January as the 2005 Steeda Screamin' Yellow Q will be on display in the Ford exhibit. We are fortunate, Steeda Autosports, like Shelby American, enjoys a wonderful relationship with Ford Motor Company.

Austin Craig is now enjoying the Florida sun every day

Membership Report *by Rich Tweedle*

SAAC-MCR Membership Status

Newest members as of December 1, 2004

Chris & Kate Duffy

We currently have 136 members and 29 have renewed for 2005

Renew your membership now and enjoy the club fellowship and benefits.

BIG NORWAY LAKE AUTODROME HOSTS FALL COLOR TOUR CHILI PARTY *by John Guyer*

On the shores of Big Norway Lake, the compound is almost an entire acre.
Measuring 42' X 36' and towering a full two stories, the Big Norway Lake Autodrome is taller than if it were one story.

Built by J. M. Mc Queen Building Co. of Clare, MI of the finest materials that could be found at the United Builders Centers, plenty of expenses were spared in order to build this building.

Rolex, the premier name in time pieces, is the same name as the siding used, although the two have nothing to do with each other. Clay colored vinyl was used to blend with the surroundings, although the soil is rather sandy.

The roof is withered wood, that's the color, they're just regular shingles.

The doors are white as part of the expenses that were spared, as are the windows.

After extensive research, epoxy paint was used on the concrete floor.

Big Norway Lake Autodrome was honored to host the Shelby American Automobile Club's Fall Color Tour and Chili Party. Among those attending were Craig and Bonnie Shefferly and Mr. Phil Jacobs.

Six examples of chili were presented for the semi annual title of Best Chili in the Universe.

And the winner is… Gwladys Austin's White Chili.

Big Norway Lake Autodrome. A garage every car enthusiast dreams about

A SAAC-MCR club member greeted everyone who arrived at John and Trish Guyer's house

The Winning White Chili Recipe

- 1 pound of cooked, shredded chicken breast
- 48 ounce jar of Great Northern White Beans
- 16 ounce jar of Salsa - your favorite (or 29 ounce can of tomato sauce instead)
- 8 ounce Colby-Jack Shredded Cheese
- 4 ounce Pepper Jack Shredded Cheese
- 1-2 tsp. Ground Cumin

Combine all ingredients, heat through on medium heat - stir frequently so not to burn the cheese.

Serve warm with Corn Chips.

LLLillie No cars and No Cops

by John Logan

The Red Cobra that LLLillie road in

I have been taking aerobics classes for many years. It so happens that my present class is made up of mostly 18 to 45 year olds with no other students as old as me. 80% are young women and most of them are married.

Then there is Lillie. Lillie is about 28 with a steady boy friend. She is tall, has, light blue eyes and very long black hair. She has obviously spent a lot of gym time exercising and toning her already perfect shape. Lillie wears a variety of outstanding aerobics outfits, the most outstanding being her Daisy Mae type cutoffs with plaid socks and a NASCAR "T" shirt. I call her LLLillie, which stands for "Lovely Legs Lillie". LLLillie does attract the male members of the class. You might call her a tease but I think she is oblivious of the attention she gets. Although I'm supposed to be beyond the age to notice, it's the women like this that help inspire an old man like me to keep up with this young group.

LLLillie works as an engineer for a well-known Ford supplier. She loves cars, any car that is known to be fast, looks fast or sounds fast. She talks to me like a granddaughter. Sometimes she asks for advice about specific engineering problems, sometimes she tells me about her wimpy boyfriend but mostly she talks about cars.

A few years ago, I told her about my Cobra project. Almost every time she saw me she would ask how it was coming and when was I going to drive it to class. She really put on the pressure! Finally, I got it finished and drove it in so she could see it. Here is how it went.

As I pull the Cobra into the parking lot, LLLillie is talking to some of the male aerobic students. The bark from the Cobra's semi-open side pipes echoing off the school building announces my arrival. She spins around and yells for the benefit of her friends, "John, I love that sound, rev it up! Wow, I love it!" The young guys with her aren't tuned to a V8 rumble so they could care less but they act interested to impress LLLillie. They rate their favorite machines in GHz and Mbytes instead of cubic inch displacement or 1/4 mile times.

While walking into class, LLLillie breaks from the group and waits for me to catch up.
"I've got to have a ride! Let's go now!"
"OK but after class!"
"Don't leave without me!"
I hadn't planned on giving her a ride but now it looks like I will have to. Between aerobic routines she keeps telling everyone about the ride she is going to have in John's Cobra. The look on the other student's faces is, John's what?

As we leave the class, she whips her gym bag into her Mustang and runs to the Cobra. I help her with the Simpson seat belt harness but she is moving around with so much excitement I'm having a hard time describing how to buckle it up. I warn her about the hot side-pipes and that she should make sure to stay clear of them when she gets out. She can't wait to get going!

We wind through the neighborhood streets, reach Outer Drive and head south toward Michigan

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2004 SAAC-MCR Fall Picnic

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SAAC-MCR open track events. He had a Fox Mustang boxtop with a 4-cyl. 2.3l, that ran in ITP, group 4.
This is the result for the class that weekend: http://www.waterfordhills.com/results/r6gr4y04.pdf

Quite a bit of interest was shown in our roped-off parking area, what with four Cobras, various high-performance Mustangs, a 427 powered Fairlane and Phil Jacobs' Shelby Team Trans Am Mustang.

It was a nice day for a picnic, fellowship and the last Waterford Hills race event of the season.

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John Eichholz racing in IPT, Group 4

2004 SAAC-MCR Fall Picnic *(Continued from page 4)*

Jerry Helfman's 427 powered Fairlane

John Eichholz in his Fox Body Mustang, coming out of Turn 6 at Waterford Hills Race Course

Phil Jacobs' Shelby Team Trans Am Mustang parked behind Jack and LuAnn Stinson's Red Cobra replica

Rich Tweedle helping Erin Lindsay move her original 289 Cobra, parked between Ed Ludtke's 1970 Boss 302 and John Logan Jr.'s Tiger

Contemporary Cobra belonging to Mike Drew of Vacaville, CA. It has a 427 Side Oiler and produces 570 HP & 610 ft-lbs of torque. Gary Roys changed the toploader from wide to close ratio with the help of Phil Jacobs. He also made the Jag torsion bar front suspension ride height adjustable

There was a lot of interest in John Logan's Cobra replica

Washtenau Community College "First Annual" Car Show

by Jeff Burgy

On Sunday, October 4th, Washtenau Community College held their "First Annual" Car Show at their main campus in Ann Arbor, MI. Charles Repp and Erin Lindsay had heard about the show, and let me know about it. Since I had never heard about this show before, and it was getting close to time that everyone was putting their cars away for the season, I anticipated that this would not be a very big show, and probably would have very few cars in attendance. Boy, was I ever wrong!

Erin Lindsay wins "Outstanding Open Sports Car" award

The folks at WCC must have put the word out SOMEWHERE, as the lot was completely full of nice hot-rods, customs, sports car, and antiques. It turned out to be a beautiful, sunny day, and despite a slight chill, even nice enough for the hard-core, like Erin and Charles, to drive their roadsters in with the tops down. Erin brought her sweet 289 Cobra, CSX2045, and Charles drove his rare and beautiful Aurora Cobra. Ben and Jan Schiewe, though I missed seeing them, were there with Jan's XK-E Jaguar. Claudia and I drove out in the Thunderbird. Since the show was in Ann Arbor, we had made plans to take my daughter, Heather, out to dinner after the show – thus, we needed to have three seats available – otherwise, I would have driven the ERA out for the show.

Charles Repp's beautifully detailed Aurora Cobra replica

Nearly two-hundred cars showed up for WCC's first car show. There was a great mix of old and new cars among the entries. I did not know about it before, but WCC has a pretty comprehensive program for people interested in cars. There are programs for mechanics, fabrication, and restoration. Cars owned and built by some of the school's students and their instructors were on display inside the shop build-

Jeff Burgy's 1957 Ford Thunderbird

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Washtenau Community College Car Show *(Continued from page 6)*

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ings. We had an opportunity to get a close-up look at the facilities, which were very spacious and well-equipped. If you ever decided you wanted to "hone-up" your skills in fabrication, restoration, or body-work, it looks like this would be a very good place to do it. Their website is at:

http://www.washtenaw.cc.mi.us/news/pressreleases/viewarticle.php?aid=867

At the end of the day, Erin Lindsay won a first-in-class award for "Outstanding Open Sports Car". The awards presented were designed and built by students in the program, and were cut on a lathe in the shape of a mag wheel. There was music, food, and plenty of nice cars to see. We'll be watching the calendar next year for WWC's "Second Annual" Car Show.

A beautiful red Maserati Ghibli and an XK 120 Jag

Model "A" Ford and 1936 Ford roadster

Erin Lindsay's CSX2045 Cobra roadster

Candy Apple Red custom '65 Mercury

Brake Myths

from a ShopTech copyrighted article by Carroll Smith

Myth # 1 – *BRAKE JUDDER AND VIBRATION IS CAUSED BY DISCS THAT HAVE BEEN WARPED FROM EXCESSIVE HEAT.*

The term "warped brake disc" has been in common use in motor racing for decades. When a driver reports a vibration under hard braking, inexperienced crews, after checking for (and not finding) cracks often attribute the vibration to "warped discs". They then measure the disc thickness in various places, find significant variation and the diagnosis is cast in stone.

When disc brakes for high performance cars arrived on the scene we began to hear of "warped brake discs" on road going cars, with the same analyses and diagnoses. Typically, the discs are resurfaced to cure the problem and, equally typically, after a relatively short time the roughness or vibration comes back. Brake roughness has caused a significant number of cars to be bought back by their manufacturers under the "lemon laws". This has been going on for decades now - and, like most things that we have cast in stone, the diagnoses are wrong.

With one qualifier, presuming that the hub and wheel flange are flat and in good condition and that the wheel bolts or hat mounting hardware is in good condition, installed correctly and tightened uniformly and in the correct order to the recommended torque specification, in more than 40 years of professional racing, including the Shelby/Ford GT 40s – one of the most intense brake development program in history

- I have never seen a warped brake disc. I have seen lots of cracked discs, (FIGURE 1) discs that had turned into shallow cones at operating temperature because they were mounted rigidly to their attachment bells or top hats, (FIGURE 2) a few where the friction surface had collapsed in the area between straight radial interior vanes, (FIGURE 3) and an untold number of discs with pad material unevenly deposited on the friction surfaces - sometimes visible and more often not. (FIGURE 4)

In fact every case of "warped brake disc" that I have investigated, whether on a racing car or a street car, has turned out to be friction pad material transferred unevenly to the surface of the disc. This uneven deposition results in thickness variation (TV) or run-out due to hot spotting that occurred at elevated temperatures.

In order to understand what is happening here, we will briefly investigate the nature of the stopping power of the disc brake system.

THE NATURE OF BRAKING FRICTION

Friction is the mechanism that converts dynamic energy into heat. Just as there are two sorts of friction between the tire and the road surface (mechanical gripping of road surface irregularities by the elastic tire compound and transient molecular adhesion between the rubber and the road in which rubber is transferred to the road surface), so there are two very different sorts of braking friction - abrasive friction and adherent friction. Abrasive friction involves the breaking of the crystalline bonds of both the pad material and the cast iron of the disc. The breaking of these bonds generates the heat of friction. In abrasive friction, the bonds between crystals

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FIGURE 1

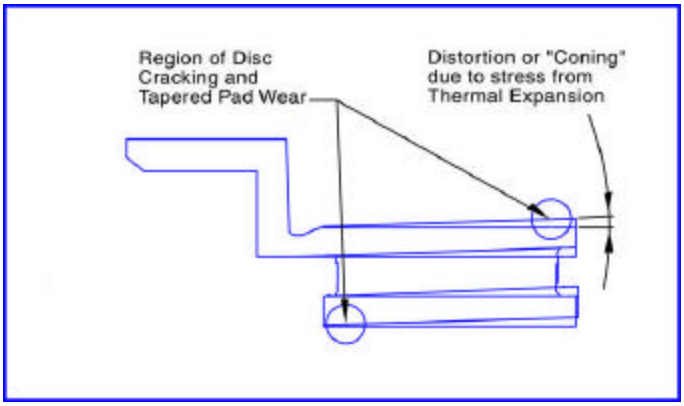
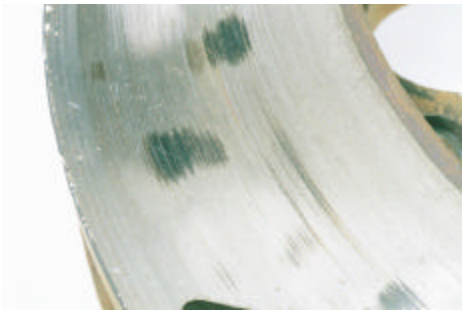


FIGURE 2

FIGURE 3

FIGURE 4



Brake Myths

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of the pad material (and, to a lesser extent, the disc material) are permanently broken. The harder material wears the softer away (hopefully the disc wears the pad). Pads that function primarily by abrasion have a high wear rate and tend to fade at high temperatures. When these pads reach their effective temperature limit, they will transfer pad material onto the disc face in a random and uneven pattern. It is this "pick up" on the disc face that both causes the thickness variation measured by the technicians and the roughness or vibration under the brakes reported by the drivers.

With adherent friction, some of the pad material diffuses across the interface between the pad and the disc and forms a very thin, uniform layer of pad material on the surface of the disc. As the friction surfaces of both disc and pad then comprise basically the same material, material can now cross the interface in both directions and the bonds break and reform. In fact, with adherent friction between pad and disc, the bonds between pad material and the deposits on the disc are transient in nature - they are continually being broken and some of them are continually reforming.

There is no such thing as pure abrasive or pure adherent friction in braking. With many contemporary pad formulas, the pad material must be abrasive enough to keep the disc surface smooth and clean. As the material can cross the interface, the layer on the disc is constantly renewed and kept uniform - again until the temperature limit of the pad has been exceeded or if the pad and the disc have not been bedded-in completely or properly. In the latter case, if a uniform layer of pad material transferred onto the disc face has not been established during bedding or break-in, spot or uncontrolled transfer of the material can occur when operating at high temperatures. The organic and semi-metallic pads of the past were more abrasive than adherent and were severely temperature limited. All of the current generation of "metallic carbon", racing pads utilize mainly adherent technology as do many of the high end street car pads and they are temperature stable over a much higher range. Unfortunately, there is no free lunch and the ultra high temperature racing pads are ineffective at the low temperatures typically experienced in street use.

Therefore - there is no such thing as an ideal "all around" brake pad. The friction material that is quiet and functions well at relatively low temperatures around town will not stop the car that is driven hard. If you attempt to drive many cars hard with the OEM pads, you will experience pad fade, friction material transfer and fluid boiling - end of discussion. The true racing pad, used under normal conditions will be noisy and will not work well at low temperatures around town.

Ideally, in order to avoid either putting up with squealing brakes that will not stop the car well around town or with pad fade on the track or coming down the mountain at speed, we should change pads before indulging in vigorous automotive exercise. No one does. The question remains, what pads should be used in high performance street cars - relatively low temperature street pads or high temperature race pads? Strangely enough, in my opinion,

FIGURE 5

the answer is a high performance street pad with good low temperature characteristics. The reason is simple: If we are driving really hard and begin to run into trouble, either with pad fade or boiling fluid (or both), the condition(s) comes on gradually enough to allow us to simply modify our driving style to compensate. On the other hand, should an emergency occur when the brakes are cold, the high temperature pad is simply not going to stop the car. As an example, during the mid 1960s, those of us at Shelby American did not drive GT 350 or GT 500 Mustangs as company cars simply because they were equipped with Raybestos M-19 racing pads and none of our wives could push on the brake pedal hard enough to stop the car in normal driving.

Regardless of pad composition, if both disc and pad are not properly broken in, material transfer between the two materials can take place in a random fashion - resulting is uneven deposits and vibration under braking. Similarly, even if the brakes are properly broken, if, when they are very hot or following a single long stop from high speed, the brakes are kept applied after the vehicle comes to a complete stop it is possible to leave a telltale deposit behind that looks like the outline of a pad. This kind of deposit is called pad imprinting and looks like the pad was inked for printing like a stamp and then set on the disc face. It is possible to see the perfect outline of the pad on the disc. FIGURE 5

It gets worse. Cast iron is an alloy of iron and silicon in solution interspersed with particles of carbon. At elevated temperatures, inclusions of carbides begin to form in the matrix. In the case of the brake disk, any uneven deposits - standing proud of the disc surface - become hotter than the surrounding metal. Every time that the leading edge of one of the deposits rotates into contact with the pad, the local temperature increases. When this local temperature reaches around 1200 or 1300 degrees F. the cast iron under the deposit begins to transform into cementite (an iron carbide in which three atoms of iron combine with one atom of carbon). Cementite is very hard, very abrasive and is a poor heat sink. If severe use continues the system will enter a self-defeating spiral - the amount and depth of the cementite increases with increasing temperature and so does the brake roughness. Drat!

PREVENTION

There is only one way to prevent this sort of thing - following proper break in procedures for both pad and disc and use the correct pad

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Brake Myths

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for your driving style and conditions. All high performance after market discs and pads should come with both installation and break in instructions. The procedures are very similar between manufacturers. With respect to the pads, the bonding resins must be burned off relatively slowly to avoid both fade and uneven deposits. The procedure is several stops of increasing severity with a brief cooling period between them. After the last stop, the system should be allowed to cool to ambient temperature. Typically, a series of ten increasingly hard stops from 60mph to 5 mph with normal acceleration in between should get the job done for a high performance street pad. During pad or disc break-in, do not come to a complete stop, so plan where and when you do this procedure with care and concern for yourself and the safety of others. If you come to a complete stop before the break-in process is completed there is the chance for non-uniform pad material transfer or pad imprinting to take place and the results will be what the whole process is trying to avoid. Game over.

In terms of stop severity, an ABS active stop would typically be around 0.9 G's and above, depending on the vehicle. What you want to do is stop at a rate around 0.7 to 0.9 G's. That is a deceleration rate near but below lock up or ABS intervention. You should begin to smell pads at the 5th to 7th stop and the smell should diminish before the last stop. A powdery gray area will become visible on the edge of the pad (actually the edge of the friction material in contact with the disc - not the backing plate) where the paint and resins of the pad are burning off. When the gray area on the edges of the pads are about 1/8" deep, the pad is bedded.

For a race pad, typically four 80mph to 5 and two 100mph to 5, depending on the pad, will also be necessary to raise the system temperatures during break-in to the range that the pad material was designed to operate at. Hence, the higher temperature material can establish its layer completely and uniformly on the disc surface.

Fortunately the procedure is also good for the discs and will relieve any residual thermal stresses left over from the casting process (all discs should be thermally stress relieved as one of the last manufacturing processes) and will transfer the smooth layer of pad material onto the disc. If possible, new discs should be bedded with used pads of the same compound that will be used going forward.

Again, heat should be put into the system gradually - increasingly hard stops with cool off time in between. Part of the idea is to avoid prolonged contact between pad and disc. With abrasive pads (which should not be used on high performance cars) the disc can be considered bedded when the friction surfaces have attained an even blue color. With the carbon metallic type pads, bedding is complete when the friction surfaces of the disc are a consistent gray or black. In any case, the discoloration of a completely broken in disc will be complete and uniform.

Depending upon the friction compound, easy use of the brakes for an extended period may lead to the removal of the transfer layer on the discs by the abrasive action of the pads. When we are going to exercise a car that has seen easy brake use for a while, a partial re-bedding process will prevent uneven pick up.

The driver can feel a 0.0004" deposit or TV on the disc. 0.001" is annoying. More than that becomes a real pain. When deposit are present, by having isolated regions that are proud of the surface and running much hotter than their neighbors, cementite inevitably forms and the local wear characteristics change which results in ever increasing TV and roughness.

Other than proper break in, as mentioned above, never leave your foot on the brake pedal after you have used the brakes hard. This is not usually a problem on public roads simply because, under normal conditions, the brakes have time to cool before you bring the car to a stop (unless, like me, you live at the bottom of a long steep hill). In any kind of racing, including autocross and "driving days" it is crucial. Regardless of friction material, clamping the pads to a hot stationary disc will result in material transfer and discernible "brake roughness". What is worse, the pad will leave the telltale imprint or outline on the disc and your sin will be visible to all and sundry.

The obvious question now is "is there a "cure" for discs with uneven friction material deposits?" The answer is a conditional yes. If the vibration has just started, the chances are that the temperature has never reached the point where cementite begins to form. In this case, simply fitting a set of good "semi-metallic" pads and using them hard (after bedding) may well remove the deposits and restore the system to normal operation but with upgraded pads. If only a small amount of material has been transferred i.e. if the vibration is just starting, vigorous scrubbing with garnet paper may remove the deposit. As many deposits are not visible, scrub the entire friction surfaces thoroughly. Do not use regular sand paper or emery cloth as the aluminum oxide abrasive material will permeate the cast iron surface and make the condition worse. Do not bead blast or sand blast the discs for the same reason.

The only fix for extensive uneven deposits involves dismounting the discs and having them Blanchard ground - not expensive, but inconvenient at best. A newly ground disc will require the same sort of bedding in process as a new disc. The trouble with this procedure is that if the grinding does not remove all of the cementite inclusions, as the disc wears the hard cementite will stand proud of the relatively soft disc and the thermal spiral starts over again. Unfortunately, the cementite is invisible to the naked eye.

Taking time to properly bed your braking system pays big dividends but, as with most sins, a repeat of the behavior that caused the trouble will bring it right back.

***MYTH # 2** - RACING BRAKE DISCS ARE MADE FROM STEEL*

To digress for a moment "steel discs" are a misnomer frequently used by people who should know better. This group includes TV commentators and drivers being interviewed. Except for some motorcycles and karts, all ferrous discs are made from cast iron - an excellent material for the job. While steel has a higher tensile strength, cast iron is many times stronger than disc brake requirements. Its thermal transfer characteristics are significantly better than those of steel so that the heat generated at the interface between pad and disc is efficiently carried through the friction faces to the interior surface of the disc and into the vanes from

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Brake Myths

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where the heat is dissipated into the air stream. Cast iron is more dimensionally stable at elevated temperature than steel and is a better heat sink - so let us hear no more talk of "steel" brake discs.

***MYTH # 3** - A SOFT BRAKE PEDAL IS THE RESULT OF PAD FADE*

The all too familiar mushy brake pedal is caused by overheated brake fluid, not overheated pads. Repeated heavy use of the brakes may lead to "brake fade". There are two distinct varieties of brake fade

A) When the temperature at the interface between the pad and the rotor exceeds the thermal capacity of the pad, the pad loses friction capability due largely to out gassing of the binding agents in the pad compound. The brake pedal remains firm and solid but the car will not stop. The first indication is a distinctive and unpleasant smell which should serve as a warning to back off,

B) When the fluid boils in the calipers air bubbles are formed. Since air is compressible, the brake pedal becomes soft and "mushy" and pedal travel increases. You can probably still stop the car by pumping the pedal but efficient modulation is gone. This is a gradual process with lots of warning.

***MYTH # 4** - BOILED BRAKE FLUID WILL BE SERVICABLE AFTER IT COOLS.*

Once the brake fluid inside the caliper has boiled, it has lost a significant percentage of its original boiling point and should be replaced. It is not necessary to remove all of the fluid in the system, just bleed until clear fluid appears.

***MYTH # 5 -** BECAUSE THEY ARE NON-HYGROSCOPIC SILICON BASED BRAKE FLUIDS ARE SUITABLE FOR USE IN HIGH PERFORMANCE CARS*

DOT 3 AND DOT 4 brake fluids are ether based and are hygroscopic in nature - i.e. they absorb water vapor. As the braking system in not quite airtight, a significant amount of water can be absorbed from the atmosphere in the course of a year. A 3% water content in brake fluid drops the boiling point as much as 170 degrees F. Brake fluid should be completely replaced annually. DOT 5 fluids are silicon based and are non-hygroscopic, which is good. They are also subject to frothing from high frequency vibration, which gives a soft pedal. Soft brake pedals may be OK in non-high performance cars (in fact, most drivers accept mushy brake pedals as normal) but they are not acceptable in any situation where the driver intends to modulate braking at high force values.

***MYTH # 6** - The brake fluid reservoir should be topped up during routine service.*

In most modern passenger cars, the brake fluid reservoir is designed with a specific volume and is equipped with an internal float. The volume corresponds to the amount of fluid that will be displaced when the pads have worn to the point of replacement plus a generous reserve. When the replacement point is reached, the descending float completes an electrical circuit and a light appears on the dash warning the driver that the pads should be replaced.

If the brake fluid is topped up the first warning of warn out pads will be the screech of steel backing plate against iron disc. This will be both annoying and expensive.

For more helpful brake articles go to the ShopTech website at www.shoptech.com.

How to Improve Your Mustang Brakes the Ford Way

by Rob Eaton

Many Mustang enthusiasts have enjoyed the benefits of the variety of Cobra brake hardware available since the '93 Cobra-R. There have been some major, and some subtle component changes along the way that have allowed for some interchangeability that may be of interest depending on your needs. I would like to shed some light on the changes, and share some of the reasons behind them. We can begin with a component walk from the '93 Cobra-R through the last of the '04 SN95's.

I'd like to begin at the rear, since it is a much shorter story. The '93 Cobra-R utilized a 1.77" (45mm) cast iron single piston caliper and a 267mm diameter vented rotor directly from the '92 Lincoln Mark VII. The axle shafts from the Mark VII were also used and are 1 ¼" longer per side than the '93 and earlier Mustang shafts. These parts were utilized because they were production validated and available (some of the SN95 hardware was not ready). All '94 through '04 Mustang Cobra, Cobra-R, Bullitt and Mach 1 vehicles utilized a 38mm cast iron single piston caliper with a 296mm diameter vented rotor. The solid axle vehicles from '94 through '98 utilized axle shafts that were ¾" longer per side, in the same length width housing as the '93 and earlier vehicles. The '99 through '04 solid axles grew another (18mm) per side over the '98 length width, both in the housing and shaft. Therefore, the total per side axle shaft length increased almost 1 ½" (19mm+18mm=37mm) from the "93 Fox to the "99 and later vehicles. The left and right handed solid axle cast adaptor brackets from any '94 through '04 Cobra will fit on the '93 and earlier cars, which allows you to bolt on the Cobra rear brakes as long as you include the '94 through '98 axle shafts with the swap. Obviously, all of these changes will leave you with a 5 lug on 4 ½" bolt circle pattern. The stamped bracket that clamps around the axle tube is a "moan brace", and is intended to reduce low frequency brake noise. These left and right handed brackets are the same on '94 through '98 Cobra's and should be used when installing on '93 and earlier axles. For '99 and later solid axle installations, find a pair of Bullitt or Mach 1 braces, as they are needed to package around the longer '99 and later axles.

The front of the '93 Cobra-R used the same PBR aluminum twin 1 ½" (38mm) piston caliper as the Corvette, with the exception of the M12 attachment threads in the anchor. For the '94 Cobra, we

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How to Improve Your Mustang Brakes *(Continued from page 11)*

(Continued from page 11)
black anodized the housing and added the "COBRA" letters, however the 38mm pistons remained on the Cobra through '98. In '99 the piston size increased from the twin 38's to twin (40.5mm) pistons for improved pedal feel. These calipers can be externally identified by the non-ribbed, smooth cylindrical exterior of the caliper casting surrounding the pistons. The '94 through '98 calipers were ribbed in this area. For track use, I prefer the (38mm) calipers, as it allows the rear brakes to do more work. The front rotor design originated at 13" diameter on the '93 Cobra-R. It was modified version of the directional Kelsey-Hayes Corvette rotor with bolt circle, pilot diameter and most significantly almost ½" reduction in hat offset as the only changes. This size brake on a stock Mustang was a huge step forward in 1994. The Kelsey-Hayes rotor was used on Cobras through 1998. For the '99 Cobra, we were able to bring Brembo into the picture with the introduction of their 13" Cobra rotor, only slightly modified from a Ferrari application. The external dimensions are functionally identical to the Kelsey-Hayes piece. The improvements include a "pillar" rib design as opposed to the directional vanes of the K-H piece, which allows for measurable improvements in cooling. The other significant improvement the Brembo disc offers is a major reduction in thermal coning when heated. Due to the shallow offset of the Cobra rotor, it is prone to coning, which causes the outboard edge of the rotor to deflect outboard outward toward the wheel spokes as much as 1mm when heated. Due to the C-shaped hat section of the Brembo rotor, the thermal coning is approximately half of the K-H rotor, which helps to reduce stress and increase rotor life during hard-core usage. The Brembo rotor can be used as a direct replacement for the K-H rotor.

Original '93 Cobra-R Caliper. Based on the Corvette design.

Original '93 Cobra-R pistons, identical to Corvette, except M12 attachment threads instead of M14's.

'94-'98 Caliper. Notice the front ribs are filled in and the bridge was thickened to improve the stiffness of the caliper over the Corvette design.

'94-'99 calipers had 38mm pistons and have ribs around the pistons, like the original '93 Cobra.

'99 and later calipers look the same as '94-'98 from the front side.

"99 and later calipers had 40.5mm pistons with solid OD.

One of the most significant offerings to the Cobra brake system is the 2000 Cobra-R Brembo caliper. These are very unique 4 piston pieces that began life on the Dodge Viper. Brembo actually modified the Viper prototype casting tool to produce prototype Mustang calipers. The spindle attachment points were obviously modified, and the hose attachment point was actually moved to the exact location of the PBR caliper, so the same hose can be utilized. The caliper that was created literally bolts on in place of the PBR piece, with staggered piston sizes of 36 and 40mm to equate to the '94 – '98 dual 38mm PBR units. Wheel clearance can be an issue with the Brembo caliper, as it sticks out into the spokes approximately 1" more than the PBR units. The advan-

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How to Improve Your Mustang Brakes

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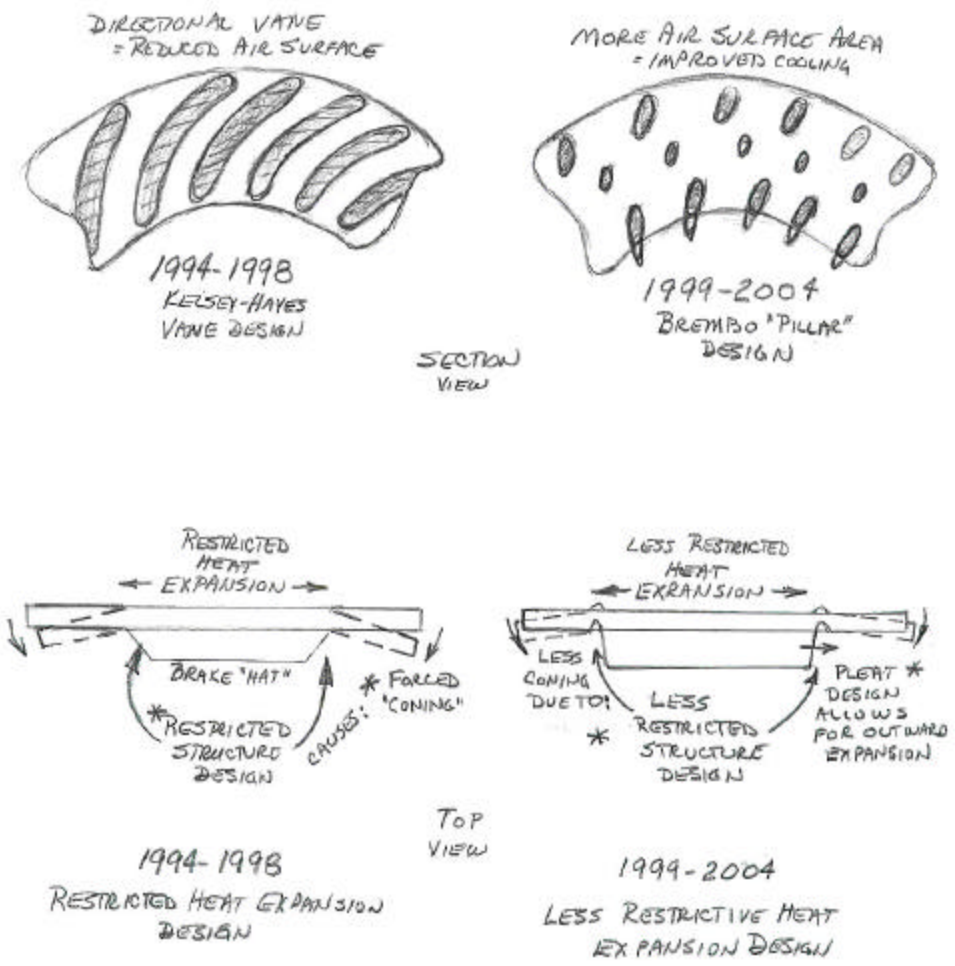
(Continued from page 12)
tages however, are huge. In our testing we found improved pedal feel, reduced fluid temperatures, significant increases in lining life, and most significantly, lining taper wear was only a fraction of the PBR calipers. The result on the track is improved fade resistance, longer pad and rotor life and consistent pedal travel.

Another change worth noting is the '99 and later front brake hose. The front hoses changed in '99 in an effort to commonize between the V6, GT and Cobra. As a result, the new hose has proven to be a robust solution for heavy-duty use. With aftermarket hoses, obtaining a clean, trouble free routing can be a challenge. With the '99-'04 front hoses the stock routing is maintained, even when combined with the Brembo calipers.

Whether you are upgrading your GT to Cobra brakes, or your Cobra to Cobra-R brakes, I believe Ford has the hardware in place to provide some cost effective solutions to your braking needs.



'94-'98 versus '99-'04 Rotor Comparison Diagram by Steve White

1994-98 Kelsey-Hayes rotor, notice the directional cooling vanes and "hat" design

1999-04 Brembo rotor, notice the improved "pillar" ribs for cooling and "hat" design

2000 Cobra-R Brembo caliper with 4 pistons. These are modified Viper calipers with staggered pistons sizes of 36 and 40mm.

Do I Smell Smoke?

by Bob Martin

One of the last things we as classic car owners want to see is a wisp of smoke curling suspiciously from under the hood of our baby.
After the momentary panic, reaction sets in; but what should we do?
An acquaintance of mine just went through that experience and when he opened the hood, he found the wiring on fire – the starter cable in particular. He had no tools and an ABC fire extinguisher, the kind we all carry, which was of little effect since the wires kept burning.
PANIC TIME! He had no tools and when a kind passerby finally flipped him a set of wire cutters so he could cut the positive battery cable (after burning his hands trying to pull it off the battery), the fire finally ceased. Result was burnt cables, destroyed battery and a hole in the sidewall where the starter solenoid used to be. Oh yes, and did I mention the resulting mess that the fire extinguisher made? Can you imagine cleaning that mess up from your engine compartment? There is an alternative to the common foam fire extinguishers. Below is a primer on the various kinds and their usage and ease of clean up.
For our purposes, we will concern ourselves with the Class A (paper, fiberglass, wood, 12 volt wiring etc.) and the Class B (flammable and combustible liquids and gases like gasoline – and for those of us who occasionally use diesel, diesel fuel). Class C and D is not really our concern.
DRY TYPES:
- ABC dry chemical uses monoammonium phosphate, a hazardous chemical that can be toxic. It has very limited Class A fire fighting ability.
- Purple K (PKP) BC dry chemical. The material used is potassium bicarbonate – a hazardous material
- BC dry powder uses non-toxic sodium bicarbonate. This is a popular alternative because it is cheap but is messy to clean up.
HALON:
- Banned in Ontario by the EPA as highly toxic and environmentally unfriendly. This gas has a nasty habit of changing to hydrogen fluoride, hydrogen chloride and hydrogen sulfide. During the cool down period it changes to phosgene gas.
HALATRON:
- A popular replacement for Halon. It is environmentally friendly but has some of the same hazards as Halon during the heating and cooling process. It is also very expensive.
WETTING AGENT:
- AB type wetting agent from Cold Fire. This is a chemical compound that when added to water materially reduces its surface tension. Commonly used in the auto racing industry. It is non-corrosive, non-toxic and biodegradable. This is used in pre-installed extinguishing systems in engine compartments and there is very little clean up after use.
ULTIMATE FOAM:
- ABC New Designer Foam. This has been available since 1999 from Kidde. It is a new generation foam and is safe around children and pets. It is effective on both vertical and horizontal surfaces and is easy to use and easy to clean up.
- ABCDK ALLFIRE Designer foam has been offered by Hawk since 1995. It is non-toxic, non-corrosive, biodegradable and friendly to children and animals. It is easy to use and cleans up with little effort. It will cool even the hottest materials and will emulsify hydrocarbons like gasoline; motor oil and diesel fuel so they cannot re-ignite.
- Aqueous Film Forming Foam (AFFF): The fire service and military have been using this type of foam for more than 40 years. It is slightly toxic and corrosive and has not been readily available to the public. The AFFF foam cools fuel and smothers the fire by forming a foam blanket. Harder to clean up.
The experts recommend use of designer foam fire extinguishers without reservation as mentioned above, they come in ABC New Designer Foam and ABCDK ALLFIRE Designer
Foam.

All of this information is taken from an article written by Mac McCoy who has a Bachelor's degree in Fire Science and a Master's degree in Fire Administration. He is a 33-year fire-fighting veteran who has worked as a paramedic, deputy sheriff and Fire Service Training Coordinator for the State of Oregon.
I don't know about you, but I am going to get me one of those designer foam extinguishers ASAP.

LLLillie *(Continued from page 4)*

Avenue. We make the long turn on Outer Drive toward Rotunda, reaching the awesome speed of 45 mph. I look over at LLLillie. She has that, "Is that all there is" look on her face. I stay cool because I've learned several times that it's easy to get a ticket in Dearborn especially on Outer Drive.

We get to the light at Outer Drive and Rotunda and I get into the left turn lane. This end of eastbound Rotunda starts with a tight sweeping right turn and has a straightaway between Ford Motor Co. property on the left and the Edsel Ford High School on the right. It is a piece of road that has served me as a mini proving ground for years while working at Ford. I have made quick, early morning and late evening tests through this turn and have learned when and where the cops are and when the traffic is light. This is one of those times!

The left turn light onto Rotunda is red. LLLillie is calmly sitting there wondering if it isn't time to go back to her car while I'm making the last check for cars and cops. When the light turns green I shout "Hang on!" and we are off heading down the left lane in first gear to 4000 rpm, now second to 3200 rpm, even out the throttle a little and start a right turn-in. There is a corner house that obstructs the view but as we clear it and I get a look ahead down the Rotunda straightaway. There are no cars and no cops in sight so I go full throttle and hit an early apex! Air is now traveling nearly unobstructed through all sixteen intake pipes to the Cobra's thirty two valve engine, giving us a neck straining acceleration. For an old guy like me, it takes all the strength I have to keep my head up so I can see the road. I allow the car to roll out across all five lanes of Rotunda to the curb of the westbound lane and hit 5800 rpm.

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Track Tire Temp Tech

by Steve White

Most drivers who participate in open track events, whether a newcomer or a so-called track dog, become keenly aware how important tires are to their successful experience on the track. They also quickly learn that tires are one of the areas they can easily tune between runs to adjust to track conditions & get the most out of their track time. One of the basic tools that assists the driver in tuning their tires is the air pressure gauge, which can help them make sure they are in the proper operating range, as well as to adjust side-to-side & front-to-rear. However, another tool that can give even more information is a temperature reading gun.

Once just the privilege of professional race teams, the cost of temperature guns has come down to the range of affordability, even for the occasional track visitor. Non-contact infra-red guns that measure the surface temperature of the tires can now be had for less than $100, making it a feasible addition to the toolbox – especially considering the technical return you get out of it. (*Note, pros use the more expensive temp probes that measure core temperatures, which typically run 40-50⁰ F higher than surface temps.*) Reading temperatures across the face of the tread in three locations, outer, middle, & inner, can provide feedback that can indicate inflation condition & alignment accuracy. While it might be obvious that higher temperatures on the inner & outer edges of the tread than the center temperature indicate an under inflation condition, or that higher inside temperatures likely mean too much negative camber, but what about conditions where two adjacent temperatures are close in level but the third is not?

While attending an SVTOA event at Indianapolis Raceway Park in October, Kenny Brown (yes, *the* Kenny Brown of Kenny Brown Performance – famous for late model Mustang & especially Cobra performance parts) provided a tire tech seminar during one of the lunch breaks. I had never experienced the condition mentioned above, until I started running the '96 Cobra in open track events this year. I began to become puzzled in which way to go with my tuning. I had two out of three temperatures where I wanted, but not that pesky third one. Should I accept it (two out of three ain't bad?), or if not, which way do I turn? Kenny addressed this by outlining his procedure for dialing in a cars suspension by the tire temperatures.

The first thing to do is to get an even differential in temperatures from location to location – in other words, the temperature difference from the outer to middle temperature should also be the same difference from the middle to the inner temperature (within a degree or two). We're talking differential here, not equal absolute temperatures – that comes later with alignment. To get the equal differentials, you raise or lower tire temperatures accordingly, based on the center temperature. For example, if the center & inner temperatures are closer together than the outer to center temperature with the center temperature not the highest of the three temperatures, raising pressures 0.5–1psi is in order. Keep doing this until you get an equal differential across the face of the tread. This may take several attempts. Once this is done, you can start adjusting alignment to get the absolute level equal across the tread.

To get an illustration of this process, see the following example & note the baseline temperatures, & how they responded to the adjustments made. (*Note, some variation from side-to-side is normal, depending upon the track, etc.*)

Run 3:

	LF *"Baseline"*				RF *"Baseline"*		
	Outer	Center	Inner	Hot:	Inner	Center	Outer
	130	127	127	Temp (F)	120	121	112
	O-C = 3		C-I = 0	T split	I-C =1	C = high	C-O = 9
	total spread = 3			T range	total spread = 9		
	44.0			PSI	42.9		
	-1.5			Camber	-1.5		

Result: Close, but unequal T separation

Changes Run 4:

	LF ***Prior to run, raised cold psi 0.5***				RF ***Prior to run, lowered cold psi 0.5***		
	Outer	Center	Inner	Hot:	Inner	Center	Outer
	124	127	130	Temp (F)	116	113	107
	O-C = 3	equal split	C-I = 3	T split	I-C = 3	C = high	C-O = 6
	total spread = 6			T range	total spread = 9		
	44.8			PSI	42.3		
	-1.5			Camber	-1.5		

Result: ***Temp separation = perfect, needs ~0.2-0.5 less negative camber***

Could use ~0.25 less pressure, then probably ~0.3-0.5 less negative camber

Receiving this instruction was like a revelation to me, allowing me to dial in my set-up, & hope it will help you too get the most out of your track set-up.

Abridged Goodwood Report *by Mike L. Drew, Abridged by Mike Nyberg, Images by Tom Greene*

The Goodwood Revival is a very unique event. Rather than a simple exhibition of old cars, this is an attempt to recreate the sights, sounds, and most importantly, the "feel" of the old Goodwood race track, which was in operation from 1948 to 1964.

To that end, the even organizers have issued an extraordinary edict that spectators won't be allowed inside the circuit unless they are attired in dress appropriate to some point during that period. No jeans and T-shirts, unless you're a Rocker astride a BSA café racer and wearing a period biker jacket and puddin' bowl helmet and goggles.

Lord March's estate is a very sizable piece of land, which stretches to the horizon, known as Goodwood. It has a gigantic manor house, whose driveway is the scene of the Goodwood Festival of Speed each summer. But it also has an absolutely wonderful, and extremely fast racetrack.

The facility has a storied history dating back to W.W.II, where Lord March (widely known as Freddie) allowed a portion of his sizable estate to be used as an aerodrome to defend the homeland. A grass strip housed several RAF squadrons, and Spitfires were launched to defend London during the Battle of Britain and beyond.

While the runways themselves were grass, a paved road circled the field, and shortly after the war it was suggested that this pavement would make for a fine motor racing circuit. Lord March had been an apprentice at Bentley Motors and had been a works driver for MG, so he was amenable to the idea, and the first race was held in 1948. (The winner of that race was a young Stirling Moss, driving a 500cc single-seater.)

The circuit saw continuous use, with the only modification being the introduction of a rather formidable chicane on the front straight in an effort to keep speeds under control.

The track saw its final race in 1966, as the speeds had simply become too great for the track to safely support. It was formally retired, and lay in disuse until Freddie March's grandson decided to reopen it for a revival.

Unlike vintage races as we known them (i.e. the Monterey Historic Races), which are modern, glitzy events which just happen to feature old cars (with varying racing provenance), the revival was from the outset designed to be a nostalgic affair, spiritually more akin to a Renaissance Faire. To that end, strict rules were laid down to help restore a properly nostalgic feel to the event.

Simply put, anything manufactured after 1966 is banned from view. This includes clothing, and therefore ALL participants, and spectators, are required to be dressed in period attire if they are to be allowed into the confines of the circuit proper. No modern vehicles are allowed to be in view either; modern cars are parked in fields blocked by large hedges. The original grandstands, pits and marshaling stands have all been restored, and the result is a very convincing approximation of what the track would have looked like in its heyday.

The first qualifying session I saw was for the cars racing for the Sussex Trophy, for World Championship Sports Cars from the period 1955-1960. During this period, the World Sportscar Championship was a series for thoroughbreds--cars from such storied makers as Ferrari, Jaguar and Aston Martin. These beautifully curvaceous two-seat sports cars, Dinos, D-types and DBRs, attracted the worlds best drivers, then and now. For the grid was filled with names from racing's past, with numerous well-known period grand prix and sports car drivers lined up on the grid, in many cases occupying the same seats that they sat in back in the '50s.

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" No jeans and T-shirts, unless you're a Rocker astride a BSA… "

The "dress" for the event was "period piece" from any of racing periods allowed on-track

Ladies: voluminous dress clinched with wide belt, slender high heels, glamorous hat, sleek gloves, seamed nylon stockings, liberal make-up with polished 'de rigeur' look, dark eyeliner and false lashes, bright red lipstick. Think Grace Kelly or Audrey Hepburn.

Vintage BSA motorcycles where present at the Goodwood Revival

A couple of WWII P-51 Mustangs flown in from Duxford. Spectators were entertained by the incredible capabilities of these machines

Abridged Goodwood Report *(Continued from page 16)*

Next up were the saloons of the St. Mary's trophy. I considered this The Highly Improbable Class, as besides well-known racing saloons of the day (such as the Jaguar Mk II 3.8), there were some seriously weird cars on-track, including diminutive Austin A-35s, barge-like Jaguar Mk VIIs (one driven by well-known actor and comedian Rowan Atkinson), and even a Czech Tatra!

One of the more entertaining groups was the Brooklands class, made up of cars which raced at the legendary Brooklands racetrack prior to 1939. This track predated the Indianapolis oval by some four years, and was the world's first purpose-built automobile racing track, opening in 1907. The high banked oval saw a variety of enterprising racers and engineers attempting to set ever-higher speed records, often in four-wheeled leviathans powered by monstrous aero engines. Several of these Bentley-based specials could be seen here, with the Napier-Bentley being a particular crowd favorite.

Cars weren't the only vehicles on track. The Barry Sheene Memorial Trophy consisted of 1963 to 1966 Grand Prix motorcycles of 350 to 500 cc's, celebrating a sort of golden age of motorcycle roadracing. The field of almost 50 cycles was populated by numerous well-known riders including writer Alan Cathcart and former world champion Wayne Gardner.

It would be a mistake to think that this event focused strictly on the racing heritage of Goodwood. For this place was originally a W.W.II aerodrome, and to that end, a formidable collection of W.W.II fighter planes was flown in from nearby Duxford aerodrome. Throughout the day, in between races pilots would strap into these incredible machines and give displays which demonstrated not only their personal flying prowess, but also the incredible capabilities of these machines which fought to keep Britain free. Four or five varieties of the Supermarine Spitfire were joined by the Hawker Hurricane, and the American effort was represented by a P-51 Mustang and an amazing P-47 Thunderbolt.

Of all the classes which took to the track, by far my favorite was the Royal Auto Club Tourist Trophy class, which celebrated the RAC TT races for closed-cockpit sports cars which took place between 1960 and 1964. Here were the legendary Ferrari 250 SWBs and GTOs and Jaguar E-types, combating against Shelby Cobras (both roadsters fitted with hard tops and a pair of Daytona Coupes) and Corvettes. Here, too, was Belgian Shelby and De Tomaso distributor Claude Dubois, again taking to the track behind the wheel of the Sunbeam Lister Tiger Le Mans coupe that he raced back in 1964.

The Shelby Daytona coupes were at a distinct and artificial disadvantage here. Apparently when this event first started,

(Continued on page 22)

Out of control. Many cars crashed at the 2004 Goodwood Revival. Look at the size of the crowd in the background.

A Ford GT40 and the car below tangled with each other and a tire wall. What do you think it will cost to repair that damage?

This '64 Brabham BRM BT8 and the car above collided before they hit the tire wall

2004 Frankenmuth Car Show

by Ed Ludtke

It all began at the Woodward Dream Cruise. I had heard about the Frankenmuth Auto/Oldies Fest for many years and I was told it was one of the premier shows in the state of Michigan. Well in my opinion, this show is number one! I was approached on 9 mile, Saturday of the Dream Cruise about attending the Frankenmuth show in September. I called Gary Strappazon for more information; he wanted my Boss 302 to represent the 1970 model year. His goal was to have one of every year Mustang to honor the 40th Anniversary. He ended up only missing two years of Mustangs. Gary Strappazon is president of the Mustang Club of Mid-Michigan and he is super guy and a true Mustang enthusiast. He and the rest of the club members made Lori and I feel right at home, they were very helpful all weekend with tips on where to park, what to see and where to dine. Frankenmuth knows how to throw a party and these Mustang enthusiasts were also well up to the task. We got to use Zender's Park right in Downtown and we were in the heart of the city and right across the river from the River Place. It was great as I was able to talk Mustangs for hours, while the girls went shopping in all the shops downtown. For those of you who have never been to the Auto Fest, they close Downtown to traffic @ 5:00pm and let everyone park there rides all on up and down for the Pre-Fest Party. They have bands every 300 feet or so with different types of music and everyone can walk and check out the wonderful cars. It was a perfect night and many, many fantastic cars to see. We were lucky enough to have a beer tent next to the Zender's park and they had a great 50's/60's Oldies band. I saw many old friends and made many new ones on Friday. Saturday was the big day for the show and Lori and I went and tried to look at all the lines and lines of cars in the huge show area. It was wall to wall cars and just about anything you wanted to see, you found. Customs, Street rods, Classics, Sport scars and my favorite, Muscle Cars. They all were wonderful and even a few for sale. Saturday evening after a nice dinner, we sat on main drag and watched all the cars cruise up and down all night. This was nothing like the stop and go of a Woodward event, just loud pipes and shining cars moving all night. There were no incidents and the local police said latter it was the safest Auto-Fest to date. So that says a lot for the participants and law enforcement, they got along with no problems. It was another perfect evening and we sure enjoyed watching the cars and the crowds.

Sunday was another perfect fall day and I was just about ready to head for home when Gary informed me I was to get an award and need to be in line by 12:30pm. So much to my surprise I got one of the Authentic German Steins that this show is so famous for and I could not be any more proud of it. It is the nicest award I have ever won in all my years of doing car events and I was just very fortunate to get one. They only give 25 awards with 3,000 plus entrants and as someone stated, "I've been coming to this event for 21 years and I still don't have a Stein"! So that really put things in perspective for me. My thanks again go out to Gary Strappazon, his wife and all those members of the Mustang Club of Mid-Michigan for making this one of the best shows I have ever attended. Their hospitality and made it a great time in Frankenmuth. I would recommend everyone put it on their calendars for 2005, it is not one you want to miss. Go to www.frankenmuth.org for info on 2005.

Mustangs lined up to get the German Stein Award, a very proud moment. The second car in line is Ed Ludtke's 1970 Boss 302.

This Thunderbird was an award winner at the Frankenmuth Car Show

This 1969 Mustang Mach I was, also, an award winner at the Frankenmuth Car Show

New Arrivals *by Mike Nyberg*

Rich Vander Heides' car is 6S285, owned in the past by Jeff Burgy. It is as early '66 with overrides. He bought the car in September from Bill Plank in Maryland. The car has been photographed for many Speed Vision events/ads including the t-shirt showing a Shelby 350. I bought the car because I wanted an "original" Shelby and one that I could take to the track events.

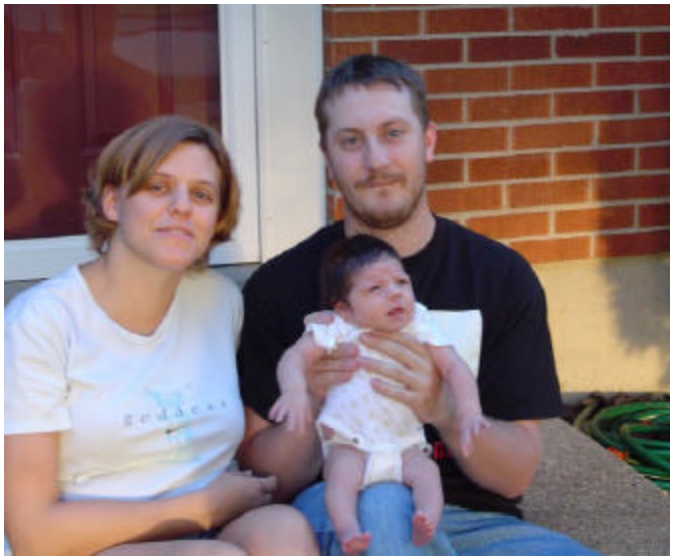
Bill Cook purchased a 2001 Mustang Bullitt, this September in Trenton, Michigan. It is 1 of 3,041 in Dark Highland Green and had 7,300 miles on the clock. Modifications Include:

- H&R Super Sport Springs
- 17 x 8 Fronts - BF Goodrich g-Force 245/45 KDWs
- 17 x 10 Rears - BF Goodrich g-Force 285/40 KDWs
- Maximum Motorsports 1 inch rear spacers
- Pro 5.0 Shifter
- Cold Air Intake
- OEM Fog Lamps
- Mach 1 Front Spoiler

Emily Reagan Darby, is a new arrival. She is the daughter of Sean Foltz and Stefanie Darby. Emily was born September 7, 2004 at 11:11pm. She weighed 8lbs 13oz and was 19 1/2" in length.

Another new arrival at Sean Foltz's house is a 1992 Mustang LX that has been built for racing in the SCCA American Sedan series. The car was built by Andrew McDermid (who also races in A-Sedan and is a very good driver) and has been raced by Scott Schweitzer for the past 4-5 years, in the Central Division of A-Sedan. Sean purchased the car from Scott along with all the spares he had, but without the motor and trans. He plans on building the A-Sedan spec motor next year along with getting the car cleaned up and ready for a few open tack events near the end of 2005. In 2006 he is going to the driver's school at Waterford Hills so he can get his Regional License to race at Waterford, that year in A-Sedan. His future plans are to get a SCCA Regional and National License and hopefully make it to the Runoffs at Mid-Ohio sometime.

Rich Vander Heides' 1966 GT 350 once owned by charter club member Jeff Burgy



Emily with her parents, Sean Foltz and Stefanie Darby

Sean Foltz's 1992 Mustang A-Sedan

Bill Cook's 2001 Mustang Bullitt

Gary Roys Attends the 2004 SEMA Show

by Mike Nyberg, Images by Mike Drew

Gary Roys attended the 2004 Specialty Equipment Manufactures Association (SEMA) show at the Las Vegas Convention Center. Gary was impressed by the amount of space dedicated to customized Mustangs and new after market products for the '05 Mustang. Modified Mustangs occupied a large space on a mezzanine just inside the main entrance.

The all new '05 Mustang won the SMEA Design Award for Best Redesigned vehicle, the Ford F-150 won for Best Truck and Chevrolet Tahoe won Best SUV. Two out of three isn't bad!

Ford Motor Company showed Fifteen different customized versions of the all new '05 Mustang to show attendees. Parnelli Jones wheeled out in an '05 Mustang inspired by the Number 15 Boss 302 Jones drove to victory at Luguna Seca in 1970.

Also, featured in traditional blue and white American racing colors is Ford's road-racing spec '05 Mustang, powered by a 5.0-liter "Cammer" V-8 good for estimated 420hp. Gary liked the yellow and black color combination on the Number 15 car and the blue and white Ford road-racing spec car reminded him of the original Shelby Mustang GT350R. He also liked the Yellow and black Steeda Q.

Gary also witnessed the Tuetul's Shelby Super Snake Theme Chopper from Unique Performance traded to Carroll Shelby for a yellow Eleanor GT500E. The two vehicles were displayed together and attracted a lot of attention.

Gary spent 1-1/2 days at the SEMA Show. "There is so much to see at the show you need to spend a week to see it all."

Ford Racing paid tribute to Parnelli Jones with a commemorative "Boy Racer" 2005 Mustang painted and striped to match Parnelli's 1970 Boss 302

The yellow Eleanor GT500E Carroll Shelby traded for the Shelby Super Snake Theme Chopper created by Tuetul's Unique Performance. Notice the people gathered around the chopper in the background.

Ford Racing Performance Products' blue and white road-racing spec '05 Mustang powered by a 5.0 "Cammer" V-8 producing an estimated 420hp

Yellow Steeda Q has many suspension, brake, exhaust and engine modifications all wrapped in an attractive package. It is street compliant, but, ready to do battle on the track.

Swap and Sell

FOR SALE :

New 428 CJ Service Carb (C9AF-U) $380
Rebuilt 428 CJ carb (C9AF-U) $180
500 cfm 2 barrel carbs $80 to $90
Will rebuild your Holley or Ford 4 barrel carbs $100 to $180
Mike Riemenschneider (734) 459-1348

1962 Lincoln 4-door has been stored since 1984. I am the second owner, L.E. Robertson purchased it new, & I bought it in 1983 from his widow. Has four (4) new tires and a new battery. I started it last month, runs good, but has the freeze plug out of the rear, very little rust. Interior is in good shape, but needs paint. Will sell for $1,750.00 or $2,000.00 if I have the freeze plug installed.

1972 Torino Ranchero is a California car, has a 429 motor with racing cam and C6 auto trans. Red paint is good, but left side doesn't match as was hit at an intersection about 2 years ago and re-painted. I'd like to have $5,000.00 for the Ranchero. It also has a transmission leak. The motor was overhauled by the former owner and I have all the records as to what he did.

Both these cars are in central Missouri – and photos are available via Email
Contact dkduren@ktis.net For information on these cars – his name is Keith Duren
t_greene@comcast.net has photos of both these cars available to you by Email

1989 Fleetwood Bounder 40 foot Motor Home – John Deere Chassis, Ford 460 engine and C6 auto trans. This motor home has only 29,xxx miles and is in absolutely outstanding condition. Full "check up" just performed and is ready to take you anywhere you want to go. Current Blue Book value is $20k wholesale and $24k retail. Our price is $17,500 – get it and take it somewhere warm you can enjoy it, before I cover it up for the winter
t_greene@comcast.net
(248) 449-7374 evenings
(313) 806-0855 (cell)
Tom Greene

WANTED :

17x9 (5) lug racing wheels for Mustang with 24mm setback
Mike Nyberg (248) 969-1157
tangobythelake@yahoo.com

- Winfield Carbs – prefer downdraft model SR; size A or A/A – will take updrafts
- Goodyear Rally GT Tires D60-13 or equivalent

Randy Betki 734 692-3390

LLLillie *(Continued from page 14)*

Even though there is a negative camber on this side of the road, it doesn't matter when using all five wide lanes. I shift to third, go full throttle and head to the middle of road past Edsel Ford High School. LLLillie, with her hair covering her eyes is screaming in exuberant joy, almost drowning out the chirp of the tires and bark of the side pipes! Now it's decision time. The light at Pelham Road is red. Will I have to go into a panic stop or will it turn green? Yea, it turns green so I don't let up. As I pass through Pelham I shift to fourth, again at 5800 rpm. Now Oakwood is coming up fast so it's time to end this solo race. There still are no cars and no cops in sight so I make a "U" turn on Rotunda and head back to the school.

The ride is over but the story is about to begin. On the way back LLLillie wipes the hair out of her face and is hysterically crying with joy. We get back to her car, she jumps out and guess what? She gets her calf against the side pipe and lets out a yell. I shut the engine off, run around and sure enough there is a red silver dollar size burn on her leg just above her sagging sock. Now what do I do? I stand there for a few seconds trying to calm her down. Should I take her to an emergency room? Should I take her home to her "wimpy" boyfriend? I hope he's "wimpy. Suddenly she yells, "Take me to my parents! They live just down the street!" So we hop back in and off we go.

On the way, I'm wondering, "What are her parents going to think of this old man with their young daughter? Their daughter that I injured!" The picture of a lawyer with my money sticking out of his pockets crosses my mind!

While we drive up their driveway, her father rushes from the backyard and says, "Wow a Cobra! What a car!" I'm thinking, "He doesn't look threatening. I don't see a gun". LLLillie gets out of the car crying, "Dad I need help, and I need mother. Look at my leg." He gives her a quick, admiring look and says, "A real Cobra burn! I haven't seen one of those on a girl since high school!" As he puts his arm around her to help her into the house, LLLillie looks at him and the two began to laugh.

Well, it's time to leave while things are looking good so I yell goodbye. LLLillie waves and with tears still rolling down her face, gives me a big smile.

Two days later we have an aerobics class. There is LLLillie with a big white bandage on her calf, proudly telling a small gathering of students all about the great ride she had and describing the history and importance of a "Classic Cobra Burn". As time went on, the bandage and scabbing came off. LLLillie's beautifully tanned leg now has a perfect scar shaped like a crescent, or is it a new moon, or maybe it's a "C" for Cobra! She is more proud of the scar and its significance than any stupid tattoo.

SAAC-MCR Abridged Financial Report *by Craig Shefferly*

Item Description		Sep.	Oct.	Nov.
Beginning Balance	Checkbook	10,884.95	7,989.48	8,859.29
	Cash on Hand	45.00	45.00	45.00
	Paypal			
Total Beginning Balance		10,929.95	8,034.48	8,904.29
Income				
Annual Memberships			225.00	
Waterford Event		3,615.00		
Events (Refund from K&K Insurance)			675.54	
Paypal		1,500.00	1,496.88	
Total Income		5,115.00	2,397.42	0.00
Expenses				
Hot Line Phone		26.07	24.56	24.56
Office Supplies				
Program Expenses		293.50	143.20	124.60
Member Reimbursements		479.90		
GingerMan		1,830.00		
Waterford Open Track Event		3,800.00	373.45	
Newsletter			286.40	
EMS Ambulance Service (2)		700.00	700.00	
K&K Insurance		881.00		
Total Expenses		8,010.47	1,527.61	149.16
Income Over/(Under) Expenses		-2,895.47	869.81	-149.16
Ending Balance		8,034.48	8,904.29	8,755.13

Abridged Goodwood Report *(Continued from page 17)*

Carroll Shelby sent over a Daytona Coupe that had a seriously, seriously illegal engine, and it simply drove away from the rest of the field and won going away. The organizers decided to fix Shelby's wagon, so now the coupes are restricted and must run with tires that are much smaller than when it raced in period--in fact, the rear tires are actually narrower than the front ones! So all the power in the world can't let the cars move up to the sharp end of the grid, despite the fact that they were being driven here by John Morton and Bob Bondurant.

The last session of the day was the Whitsun Trophy for sports prototypes from 1963-1966. Racing underwent a mighty change around 1964, with sports cars being replaced by dedicated sports prototypes for the World Challenge. Early Lola T-70s were spyders, but then the Ford GT40 burst upon the scene, and the class featured no less than nine original GT40s.

The TT cars ran a one-hour race, which was both wonderful and terrible at the same time. It was wonderful seeing all these cars being driven hard, but terrible because once again, European vintage racers showed absolutely no respect for their machinery or that of their fellow competitors, and wrecks were commonplace, as belligerent drivers used NASCAR techniques to muscle other cars out of the way. A good 25% of the cars in the race suffered body damage, in some cases very significant damage. A Ferrari 330 LM/B, the John Williment Cobra Coupe, and the Aston Martin Project 212 (Aston's one-off answer to the Ferrari 250 GTO, recently valued at 2.5 million pounds, or about 4.25 million dollars) all had their sides caved in, a Cobra roadster got its boot lid rearranged, and so on and so forth.

The racing (and wrecking) was followed by parade laps, including one by one of the six Bugatti Royales (the only one running), and Sir Stirling Moss driving the now-completed car with a thrilled nine-year-old passenger seated alongside……..

SAAC-MCR Abridged Meeting Minutes

OCTOBER MEETING MINUTES

Meeting was called to order at 7:58 by Tom Greene
Competition Dir: Darius Rudis.... Bill Rowe did some investigating and discovered we were over charged by K&K insurance so refund is coming. Also, at the last track event, Tom Greene had a Yellow Ford GT, doing some 1:20 lap times.
Treasurer: Craig Shefferly... The club has $8,000.00 approx.
Editors Report: Mike Nyberg.,, Passed out list of proposed articles for the next newsletter.
Show Dir: Gary Roys... Has list of names that signed up to work the show and planned tasks.
Membership Dir: Rich Tweedle... This month we have 138 members.
National News: Jeff Burgy .... Ford is going to paint the 2005 Mustang Race Cars School Bus Yellow, just like the '70 Trans-am Mustangs.
This & That: Bill Cook bought a '01 Bullitt Mustang.

NOVEMBER MEETING MINUTES

Meeting was called to order at 7:56 by Tom Greene.
New Faces were Emily who is one month old and brought by parents, Sean and Steffanie Foltz. Rick Vander Heide's sons Ben and Sam.
Competition Dir: Darius Rudis... everything is done for this year.
Treasurer: Craig Shefferly... The club has $8,800.
Editors Report: Mike Nyberg... passed out list of proposed Articles for the Jan. 2005 issue. Membership Dir: Rich Tweedle... We have 136 members.
Tech Page: Jerry Helfman is looking for an engine builder to build up a 302 for his Tiger with the vintage fuel injection.
This & That: Tom Greene's wife now has a new Jaguar X-Type to drive around.
Erin Lindsay has offered her house for the spring chili cook-off, Saturday, March 5, 2005.
March 13, 2005 is the official Late Winter swap meet at Gorno Ford.

DECEMBER MEETING MINUTES

Meeting was called to order at 7:59 by Tom Greene
New Faces were Brian Greene's friend Barb
Financial Dir: Craig Shefferly...The club has $8,710
Editors Report: Mike Nyberg...Passed out the status list of proposed articles for the Jan. 2005 newsletter.
Show Dir: Gary Roys...Inviting other Ford Car clubs to Show& Go 2005, our 30th Anniversary. MOCSEM, the Fairlane club, the Falcon club, etc.
Membership Dir: Rich Tweedle...We have 34 members for 2005: "this is a new year"
Tech Question : Don't use Scotch-brite pads to clean engine parts; the inside of your engine, heads, valve covers, etc. It will leave abrasives that will wreak havoc inside of your motor.
New Vehicles: Sean Foltz just bought a '92 A-sedan Mustang for track events.
Club Holiday Party is January 15th and cost is $40.00 per person if a club worker and $90.00 if not. Contact Randy Betki at kbetki@ people.com

Shelby American Automotive Club – Motor City Region

Dedicated to the preservation, care, history and enjoyment of the automobiles produced by Shelby America and/or Ford Motor Co.

Monthly Meeting, First Thursday of ea. Month
7:00 pm at Mama Mia's Restaurant
27770 Plymouth Rd., Livonia, MI
West of Inkster Rd.

Newsletter editor; Mike Nyberg
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We're on the Web!
www.saac-mcr.com

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Mailing Address Line 3

2005 Events Calendar

Jan. 15 Holiday Dinner at Fairlane, the Henry Ford Estate, Dearborn, MI

Jan. 15-23 North American International Auto Show, Cobo Hall, Detroit, MI

Mar. 4-6 Detroit AutoRama, Cobo Hall, Detroit, MI

Mar. 5 Chili Cook-Off, at Erin Jessica Lindsay's house

Mar. 13 SAAC-MCR Winter Swap Meet, at Gorno Ford, Woodhaven MI

May 13-15 Carlisle Kit Car Show, Fairgrounds, Carlisle, PA

June 3-5 All Ford and BOSS Nationals, Fairgrounds, Carlisle, PA

June 5-6 SAAC-MCR Show & Go 30, Ford WHQ, June 5 & Waterford Hills, June 6

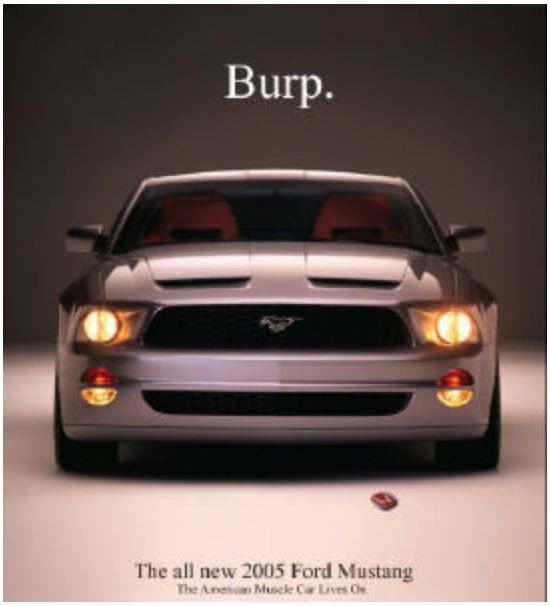
July 1-3 SAAC 30 National Convention, Fontana, CA

July "Early" GingerMan Open Track Event-"Hot Laps at GingerMan", South Haven, MI

Aug. 20 11th Annual Woodward Dream Cruise, Pontiac to Ferndale, MI

Sept. "Early" Waterford Hills Open Track Event-"Labor Day Classic", Waterford, MI

Sept. "Late" Waterford Hills Open Track Event-"Harvest Happening", Waterford, MI



'05 Mustangs eat Hondas for lunch!