CHARGIN' THUNDER

Super Coupe Club of America

Volume V ***March 2000***

Dedicated to the preservation and performance of the 1989 – 95 Thunderbird Super Coupe & 1989/90 Cougar XR7

"Have you ever noticed? Anybody going slower than you is an idiot, and anyone going faster than you is a maniac."
George Carlin

Bill Evanoff – Club Coordinator & Editor

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Changes of Address

Address changes MUST be submitted in writing by the 25'Th of the month prior to a Chargin' Thunder (CT) printing. The CT is mailed each March, June, September, and December. This will give us time to change it in the computer prior to the next mailing. Address changes are not taken over the phone. They must be in writing via post card, letter, or email (sccoa@usa.net) stating old address and new address. We cannot be responsible for "lost" issues due to late notice of address change. Replacement cost of any lost issue is $5.00.

Mailing of Newsletters

The CT newsletter is mailed out quarterly in the third, sixth, ninth, and twelfth month of the year. All issues are mailed at the same time via Bulk Mail Postage.

Problems & Complaints

Our highest priority is getting the CT newsletter mailed to you on a timely basis. Please let us know if you have ANY problem at all. Call or email us with your questions or concerns.

New Membership & Renewal

Membership and subscription to the CT newsletter is $40 per year. Dues for those outside the USA and Canada are $50 per year. Each club year begins with the March issue and concludes with the December issue. Renewal slips are placed in each December issue for the upcoming club year. Each January brings a new club year. New members and late renewals receive issues of the CT back to the previous March (which is the month the first CT of the year is mailed) to keep them totally up to date and keep their yearly volume of issues complete.

Classifieds

Any member may place a "car" or "parts" ad for free in the CT. Send your ad to us via email or post card/letter and it will appear in the next issue. Include your member number with your request. Ads must be typed or printed legibly, please.

Businesses wishing to place an advertisement in a CT newsletter should contact Patty or Bill. 513-697-6501

Daily Schedule

Patty is available 9:00 a.m. – 3 p.m. M-F most days for general information. Bill gets home from work around 6 p.m., so you may contact him from 6 – 9 p.m. M-F most days for technical info. These times are for the Eastern Std Time Zone. Please be considerate of the time zone differences! Phone # 513-697-6501.

Arizona Highway Patrol SC & TC

Photos compliments of Mark Hasenyager

From The Birds Nest

By Bill Evanoff

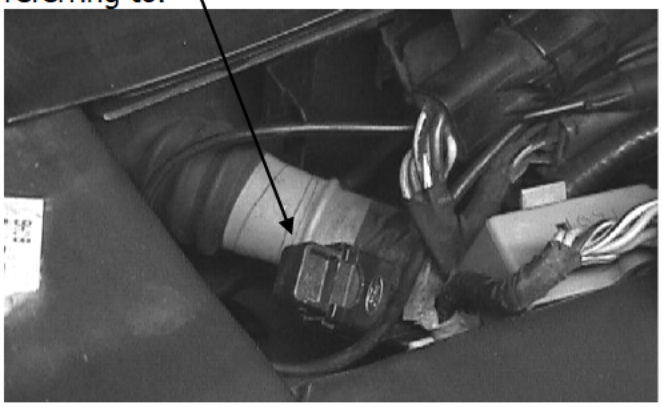
Welcome back Y2K SCCoA members for another exiting year of fun, frivolity and learning with the Chargin' Thunder newsletters. I trust that each of you made it flawlessly past the midnight hour on Dec 31'th a few months ago and your injectors didn't go ejecting all over the place at the first turn of the key on your SC/XR7 on New Years day. I personally had my doubts about what was to take place as the new year started, but all I can say is I am glad that companies and municipalities around the USA spent the estimated several hundred billion dollars to safe guard against any serious disruptions in vital services.

The current public issue which all of us are currently troubled with is likely the price of gas. As any good SC/XR7 owner knows, our cars take premium gas that is currently hovering around $1.75 a gallon here in southern Ohio. With regular fuel costing at least .20 cents a gallon less, I'm sure you all have been tempted to use the cheap stuff and hope for the best. Here are some common sense thoughts on using 87-octane gas in your supercharged engine. The first and most likely answer to this idea is, "don't do it". I say this for those owners who like driving their cars hard and get into the boost quite often. This is also the ONLY answer for those individuals using a smaller than stock supercharger pulley. Be aware that although the nominal compression ratio on these engines is between 8.2:1 and 8.5:1, when boost is added, the compression ratio increases by a full one point with every 3.2 pounds of boost. Therefore, at 12 pounds of boost (which is the normal for any stock SC engine) the actual ratio increases to approximately 12:1. Can everyone see why you should continue using premium fuel now?

Now for those individuals who have exceptional restraint when it comes to using the positive side of your boost gage, I suppose it is possible for you to gingerly tool around town or cruise effortlessly down the highway sipping regular fuel. On a relatively stock or even a properly modified engine, using regular fuel can be an option but only under the above circumstances. Boost on any supercharged engine requires higher-octane fuel to avoid damaging your internal engine components and blowing your head gaskets. If you are not prudent in your driving with regular fuel, then the small amount of money you save will seem trivial compared to what you will be spending upon a engine rebuild.

Another option, which I also do not recommend, is pulling the "octane" spout connector that retards the engine's timing a few degrees to accommodate poor gasoline conditions. The spout is located at the rear/passenger side of the engine compartment. It usually is buried among a host of other wires down a few inches and has a large thumbnail sized plug that should be in tact. To retard the timing, pull the plug out. DO NOT lose this plug, as you should reinstall it sometime again in the future. Keep it in your glovebox or somewhere else where you won't lose it.

Here is a picture of the spout connector I am referring to.



Mine was located below the EEC test port, which I have moved aside for this picture.

The final answer is…choose premium, but if you do go with a lesser alternative, use caution. I don't want to say, "I told you so" to anyone!

TOP 25 Quickest List

Bill Schlabach, a long time SCCoA member and good friend from the Detroit Michigan area, has

repeatedly chastised me for calling the club's top ¼ mile time list the "Fastest SC" list. He is quite correct that "quick" and "fast" are two different terms. As any drag racer should know, you can loose a drag race even though your mph figure was better than your heads-up competitor. The same goes for our list. It is based upon time, not speed. Despite Bill's nagging, I will continue to refer to our list as the "Fastest SC" list, if for no other reason than to spite him. I also think he is also jealous that I'm a few slots in front of him…keep trying Bill!

In case you have not been keeping track of our list on the SCCoA web site, everyone on the top 25 list is now 14.50 seconds or faster…or should I say QUICKER! Times are dropping like crazy and I fully expect that a 13.99 or better time will be required to make this same list a year from now. Keep tuning those SC gentlemen and ladies!

Spring Time Car Shows

The SCCoA will be attending the following shows this spring:

The World Ford Challenge is being held May 18-21, 2000 near St. Louis MO this year at Gateway International Raceway. The club is staying at the Best Western, 2003 Mall Rd, Collinsville, IL 62234. Contact them at 1-618-345-5660. Cost is $69 / night. You will have to mention that you want a room in the SCCoA block. There are currently 14 rooms available. We were informed that prices are for up to 4 occupants (2 double beds).

The Carlisle All-Ford Nationals is June 2 – 4 at the Carlisle PA Fairgrounds. Don't forget to preregister using the cost savings form included in the December '99 Chargin' Thunder. The SCCoA has already reserved rooms for Carlisle 2000 at the Super 8 Motel again but from what I have heard, they are already booked up. I suggest you call them anyway and ask about other hotels nearby so you can hang out with other club members after-hours. The Super 8's phone number is 717-245-9898.

The Super Coupe Club of the Southwest is holding a "SC YA" in Tulsa outing. Details of this event are a few pages into this Chargin' Thunder issue. This event should be a blast. If you want to know what a SCCotS event is like, read (or reread) their last article which was in the December '99 CT.

For you West Coast enthusiasts, I encourage you to attend the 15th Annual Fabulous Fords Forever Show on Sunday April 9th, 2000 at Knott's Berry Farm in California. This event is saluting 90 years of Model T's and 45 years of Thunderbirds For more info go to www.fordcarclubs.org

New Midwest Chapter Coordinators

Participation within the Midwest chapter of the SCCoA has exceeded my expectations and I'm no longer able to keep up with it along with my national SCCoA responsibilities. Therefore, Charles Markman and Doug Williams will be taking over this chapter which includes Ohio, Michigan, Indiana, and Kentucky. For those SCCoA members who live within these states, I highly encourage you to contact one of these individuals to join the chapter. Contact Charles or Doug at "midwestscguys@usa.net".

Head Gasket failures

Ford has been getting some unwanted publicity recently relating to a law suite stating their head gaskets on '94 and '95 3.8L engines are failing prematurely at 50K miles or less. The vehicles under fire are the Taurus/Sable and Windstar. Currently the 3.8L SC engine has not been included in this suite.

I personally believe the SC engine is no where as trouble prone as these vehicles. Most SC gaskets fail at much higher mileage, but none-the-less the SC does have a higher than normal HG failure rate. If a SC does fail at low miles, it is typically because of improper modifications (i.e. a smaller supercharger pulley). If you have had a HG failure, it can't hurt to call Ford

at 800-392-3673 in the US and give them your VIN # so they can have a better feel if the SC engine is having major problems or not.

Is Your Car on the World Wide Web?
I encourage members to take two or three nice pictures of their pride and joy and send it to our webmaster Ron DiPaola for inclusion in our "Member's Cars" list on the club's web site. Include your city/state, a list of your modifications (if any), what shows you have attended, and what your future plans are. Also include a ¼ mile time if you have run it at the track. Ron can be contacted at: 206 South Duane Ave. Endicott NY, 13760. His email is: "scguys@usa.net".

Back issues of Chargin' Thunder
As the club grows, there are more and more new members, which of course is a good thing. The bad aspect about new members is that I personally wish they had all the information ever contained within the pages of Chargin' Thunder written over the last four years immediately. To solve this problem, the club has continued to offer the back issues of CT at a discounted rate.

Pricing of back issues is on a "the more you buy, the cheaper they are" type sliding scale. One issue is $10. Two issues are $18 (or $9 each). Three issues are $24 (or $8 each). Four issues are $28 (or $7 each). Five issues are $30 (or $6 each) and six or more issues are $5 each. These prices INCLUDE shipping if you are within the US or Canada. Add an additional $5 US if you are outside these two countries.

The contents of each back issue is described on the "Chargin' Thunder" link on the SCCoA web site. Contact Bill or Patty Evanoff at sccoa@usa.net or 513-697-6501 with any questions. To order, simply send a check or money order to the address shown on the front page of this newsletter. State the issues you would like in a short note along with your return address.

New Club Window Stickers
Included with this newsletter is your new vehicle window sticker. I hope you like the new design and can apply it to your window successfully. It really is easy, but take your time and peel the backing off slowing. If anyone would like additional stickers, you may send us a letter with a self addressed and stamped envelope inside along with $2 per sticker requested. Either Patty or I will simply enclose the sticker(s) in your stamped & addressed envelope and you will have it in a few days.

THE LADIES' CORNER

THE VALUE OF HOBBIES

By Patty Evanoff

I have noticed that most SC enthusiasts do not just view their Super Coupe as a car, they consider it a work of art! They gaze upon it with admiration and pride. Many owners spend a great amount of time and money making it look great and go fast. Critics may ask "Why all this fuss over a car?" For many SC owners it is not just a car, but a hobby. Hobbies, whatever they may be, have value.

Hobbies add fun to a person's life and bring pleasure. Life is too short to be serious all of the time. Recreation and leisure activities are vitally important to keep us sane in this fast paced society. Even God rested on the seventh day after a busy week. Hobbies are a form of relaxation, even if they are strenuous, because they give your mind and body an enjoyable break from daily activities.

Pursuing a hobby helps to relieve stress and tension. It is therapy for the soul, a distraction of the mind. Folks who are overwhelmed with stress and worry need to find a hobby that they enjoy doing. It boosts self-esteem and provides something positive to think about.

Hobbies are also a way to express creativity. You gain a sense of accomplishment and pride upon completion of a project. Engaging in a hobby allows you to conquer a challenge in a non-threatening way, at least I hope it is non-threatening. But even setbacks are not the end of the world, only a nuisance. My husband views a blown head gasket on his SC as an opportunity to port and polish his cylinder heads. The good moments far outweigh the bad.

Hobbies tell something about a person. They are a reflection of interests and tastes. They contribute to defining identity. The Lord made us all different and unique. A person's hobbies are one of the ways in which we express our individuality. They make us interesting people! How boring we would be if we all liked to do the same things or had the same talents. There are so many different hobbies to choose from that we should all be able to find one that suits our varied personalities. Even within the same hobby, there are different approaches, preferences, and styles in which we can express ourselves.

Hobbies give you something to talk about with others. They provide a safe topic with little controversy (unless of course you are arguing over what color looks best on a SC or which color is supposedly faster as some have been noted to do on the BBS). Hobbies are a way to connect with people. It is exciting to talk with someone who shares your interests. You may have nothing else in common with the person, but if you share the same hobby, you can talk to a total stranger for hours.

Finally, I'll close with a word of caution. Yes, hobbies have a valuable place in our lives, but we must have perspective and balance. Hobbies should never consume our lives at the expense of neglecting commitments and responsibilities, which should take top priority. So, a word to the wives and girlfriends of SC enthusiasts, allow him to spend some of his time and money on the car, as long as he spends <u>MOST</u> of his time and money on you!

Happy Hobbying!

Super Coupe Club of the Mid-Atlantic region report

By Pat DiPersia

Well, let me start out by apologizing. Several months, if not a year or so by now, a group of SC'ers decided to start different chapters of the SCCoA to help in organizing local events and to bring members closer together. I was involved on the idea and was thrilled to take on the Mid-Atlantic region, which consists of southeast Pennsylvania, Southern New Jersey and Delaware. Of course, all of our chapter "boundaries" are very fuzzy lines, and anyone may join in the chapter.

However, I'm apologizing because I feel I have been shirking my duties as a chapter president. I was able to organize a meet or two last year, but I was unable to spend the amount of time in the club or chapter that I would have liked to. So with that said, it's the start of a New Year! With the New Year comes new changes. And this year, expect to see the Mid-Atlantic region on the map.

In speaking with other members of the SCCoA, and some thoughts I have had, we have plenty of great ideas for meets this year, starting with a spring thaw for sometime in April or May. With the national SCCoA events fast approaching this year, some of which are a decent hike, we're going to work on coordinated "cruises" to the events. Tell me a dozen or so SC's running down the Pennsylvania Turnpike to Carlisle or Columbus wouldn't just look neat?!

Several other ideas are in the works. I have been bouncing ideas off of the wonderful Mr. Dave Ward (My evil SC twin!) who has been ever so helpful. One idea that has come up was some road racing (Check out my other CT article, "Bitten by the Bug.") After experiencing the thrill of speeds of the quarter mile, but for minutes instead of seconds, I was hooked. I'm currently discussing with Pocono raceway to rent out the track for a day or two. Previous trips to the track have been most enlightening in that I have really learned what the car can do (As well as what it can't!) and how to really drive it. We don't frequent the track for speed, but for skill. Once you have the skill, the speed comes naturally. And in past events, we have been able to keep the cost of the weekend to a minimum as well. Between a hotel and track time, I've paid around $300 for a weekend, which includes sometimes as much as 2 hours of track time! More details to follow on "The SCCoM takes on Pocono."

Other ideas include summer cruises. There have been talks between a few members of a cruise across America. Well, as much as I would really love to do it, I'm not sure how many people would be able to take that much time away from their normal life to trek across the US. And the coordination of that event would be a nightmare. Now that doesn't mean we can't do something a little smaller – maybe along the coast for a few days? Although I do like the phrase, "SC's Across America!"

In other news, SCCoM has a new website! As I write this article, it is still in the developmental phases, but I will keep everyone updated of its address once we go production. So far, we've included past and future events, our photo album and member pages, with more to come.

Speaking of past events, I'd also like to thank everyone who attended our 1999 SCCoA/SCCoM events. We began the year with Carlisle, where we experienced the thrill of nearly 50 SC's on the fun field and even ran out of space – SC's EVERYWHERE seemed to be the the theme for last year's Carlisle! We were going to need to start stacking the SC's soon!

The SCCoM also held it's first mini-meet last summer, at Ridley Creek State Park. We had a decent turnout for our first event – almost 10 SC's made the trek. This year, we're definitely working on topping that number, need to work on some FOOD, as well as copying some of the fun of the SCCoNM crew! (I think those guys have WAYYYY too much fun running through tires!)

We even had gatherings at the local drag strips. I think the most memorable would have to be our Atco meet with the New York chapter. Between car interiors left behind in the pits (Hey, that glove box door is heavy!), to Dennis "RedNeck Roadkill" running over helpless women on scooters - after a run that broke him into the 13's - we had an absolute blast last year!

And we're going to do it all over again this year, and then some! As always, if anyone has ideas or knows of car shows we should attend, please let me know so we can get an event coordinated and posted on the SCCoA events board. Keep in mind you will find information for all of our events, as well as all chapters of the SCCoA, on the events board, as well as our local chapter websites.

We're looking forward to an eventful year with the SCCoA/SCCoM. Spread the word and come on out and flaunt that bird!

Florida Mini-Meet

By Brad Klein

WOW what a meet! We had a great time. There were 7 SCs and one V8 Cougar in attendance and we meet at the Malibu Grand Prix in Orlando, Fl. We didn't actually go into Malibu we just used the parking lot to do some bs-ing.

We checked some codes with my code scanner and found some members had problems that haven't got serious yet.

After that we lined up and took some pictures and headed down International Blvd. towards the Race Rock restaurant. Boy did our line of T'birds and Cougars get the stares. We ate at Race Rock, which is a racing museum in a way. They have memorabilia from all sorts of racing including an Indy car that rotates upside down over the bar.

After diner we decided to call it a night. Frank had to go back to Pompano Beach and Scott had to make the trek to Jacksonville. We all had fun and are planning on doing it again soon. Hopefully we can get out to the track next time and get more SC owners in this region to join us.

In attendance we had: Frank & Rita Carbone in a white '93 5 speed, Scott Suzanne with

the silver '97 Cougar, Brian Lundh with a red '91 auto, Troy Arcidiacano with his white '89 5 speed, Dan Holleran in a black '89 auto, James Powles with a red '92 auto, Cory Patterson in a Blue '90 auto, Grady D. Huron with his Electric Red '95 5 speed (he also has a white '90), and Brad Klein & Pam Baskins in their '95 auto.

Thanks for coming out
Brad Klein

More pics from this outing can be viewed on the Internet at
http://members.home.net:80/sccos/orlando.html

Front to Back Left to Right Troy, Dan, James, Grady, Brian, Scott, Frank, Cory, & Brad

Motor Oil 101

By Michael Taliercio

As a man who has been in the oil change business for more than fifteen years, I thought I would share my knowledge of it with the members of the SCCoA. There are no mysteries with motor oil, but I have seen some misunderstanding of it in my years in the business. From 1984 to 1987 I worked for the largest oil change company in the world as a store manager and district manager. I managed four different stores and one district with six stores. My stores and district set records for car count and dollars per store many of the years I was employed by them. This job taught me all about motor oil and how to run the business. After two years with them, I began a plan to open my own oil change centers. In 1986 I bought a piece of property in West Babylon, NY, designed and built the facility, and opened Pro Lube in August of 1988. By 1994 I had three shops. In 1995 I expanded into general auto repairs. I have been in this business for eleven years doing many thousands of quality oil changes per year. The following is some history and explanations of what everyone should know about motor oil so you can better care for your cars. It is a compilation of facts garnered from my own education and years of experience in the oil change business and from information obtained from the API (American Petroleum Institute), SAE (Society of Automotive Engineers) AOCA (American oil Change Association) and the Ashland Oil Company (makers of Valvoline Motor Oil).

The History of Motor Oil

In the mid 1800's vegetable oil and animal fats were the first lubricants developed. They were used to lubricate the steam engines of that day. They smelled terrible and were very corrosive to the engines they were used on.

In the late 1800's crude oil was discovered in Pennsylvania. Most of it was used as a source for kerosene lamps. The first motor oil was made from it by Valvoline to lubricate the gasoline powered automobile engines that were just being invented.

In the 1930's the evolution of motor oil began with the development of additives. The first additive developed was a wax modifier, since wax is naturally found in crude oil. Much of it is removed in the refining process, but the additive removed any remaining residue.

In the 1940's additional additives were developed. The first ones were detergents, anti-corrosion additives, and viscosity index improvers. Friction modifiers, foam and oxidation inhibitors, and pour point depressants were developed later and helped the oil lubricate and protect the engines.

In the 1960's and early 1970's all of the oils were straight weights, like SAE 30. In the mid 1970's

multi-grade oils like 10W40 and 20W50 appeared with the development of the viscosity-index improver additive. This allowed motor oil to work better at a wider range of temperatures. With a good additive package, a multi-grade oil could provide better protection from engine wear, better gas mileage, and something we all want, more horsepower.

What the Letters Mean

There is a circular symbol on every container of motor oil showing the API service class and the weight.

API - Stands for the American Petroleum Institute, an organization that sets the service classes and standards high quality motor oils must meet.

SJ - The latest oil service class quality rating that covers oils used in gasoline engines currently and previously in production.

CF - The latest rating for commercial diesel engines. (There are several ratings for diesels, but they won't be covered here.)

SAE - Stands for Society of Automotive Engineers. Every motor oil has an SAE grade that indicates viscosity or the thickness of the oil. The lower the number, the thinner the oil. The higher the number the thicker the oil.

W - Stands for WINTER (not weight, as most people think). Its the way an oil performs in cold weather.

What the Numbers Mean and an Explanation of Viscosity

Every container of motor oil is marked with the viscosity numbers like SAE30, 5W30, 10W40, 20W50. Viscosity is the ability of any fluid, in this case motor oil, to resist flow. The lower the number, the easier it flows, the higher the number the more resistant it is to flow. An SAE number is a single viscosity oil. All the others are multi-viscosty oils. In a multi-viscosity oil, the first number refers to the oils ability to flow when cold and the second number when its hot. Multi-viscosity oils like 5W30 flow well at low temperatures and at start up. When they heat up, the polymers (Viscosity Index Improvers) lengthen and make the oil flow like a 30.

Additives - What They Are and What They Do

Additives help the motor oil do specific things as described below, and because they wear out, they must be replaced with regular oil changes. An additive package makes up about 10 to 20% of the motor oil depending on the brand. Each motor oil maker has its own formula, and may have different formulas for different purposes and different vehicles. Some of the additives are;

Detergents - help to keep the oil clean by preventing the formation of sludge and varnish.
Dispersants - suspend contaminants that could form sludge and varnish in the engine.
Rust and Corrosion Inhibitors - counteract the rust causing water vapor and neutralize the corrosive acids that form when an engine is running. Its caused by short trips and slow warm ups.
Viscosity Index Improvers - chemicals called polymers that change with temperature and make multi-grade oils possible.
Anti-Foaming Agents - foam reduces the ability of oil to lubricate. This additive weakens and collapses the air bubbles as soon as they are formed.
Pour Point Depressants - chemicals that allow the oil to flow at cold temperatures.
Friction Modifiers / Extreme Pressure Additives - coat the moving parts of the engine with a tough film to reduce friction and prevent wear.
Oxidation and Corrosion Inhibitors - slows down high temperature deterioration and coats the bearings.
These additives only help the oil do its job. Better quality oils can do it with fewer additives.

Types of Motor Oil

Basically there are three types of motor oil available, petroleum based, semi-synthetic/conventional blend, and full synthetic.

Petroleum based or conventional motor oils are refined from crude oil pumped from the ground. They do an adequate job in an engine. They lubricate moving parts, hold the contaminants in suspension until drained, and disperse heat. Semi-Synthetic / Conventional blends combine synthetic and petroleum motor oil at a cost of just slightly more than half the price of full synthetics. Synthetic Oils do the best job because the oil is engineered not refined like conventional oil. They increase fuel economy and do something else we're all looking for, increase horsepower. That is accomplished by the oils ability to reduce friction. Wear reduction is better too because of its increased flow at start up, where most engine wear occurs.

Explanation of Multi-Viscosity Oils

All of the above types of motor oil are available as multi-viscosity oils. These types of oils have a polymer added to the base oil to prevent the oil from thinning as it heats up. When cold, these polymers are coiled and allow the oil to flow like a thin oil. When the oil heats up, the polymers unwind into long chains that prevent the oil from thinning out. (Think of them as microscopic Slinky toys.)These polymers do a great job, but too much of it is not good. Under extreme conditions they can shear and burn causing deposits and sludge and damage the engine. For example a 10W40 motor oil needs a lot of polymers to get that range. That is why it is not recommended in newer cars. Synthetics use very little or none of this additive. That is only one of the many good reasons to use synthetics in any car you care about.

Jobs of Motor Oil

Lubricate - form a layer between the metal surfaces to prevent heat and wear.

Seal - fill the uneven surfaces in the metal increasing power and efficiency..

Clean - hold the dirt and debris in suspension until it can be removed by the oil filter.

Cool - remove heat from the engine and transfer it to the cooling system.

Flow - must be thin enough to flow throughout the engine as soon as the engine starts, yet provide protection as the engine gets hot.

What Oil Should You Use?

All of the top brands of motor oil meet or exceed the API and car manufacturers requirements. The multi-viscosity conventional petroleum oils do a good job. Synthetics do a superior job due to their high film strength, low tendency to form deposits, stable viscosity base, high temperature oxidation resistance, and low temperature flow characteristics. The Ford Thunderbird Super Coupes and Cougar XR7s require a 5W30 motor oil.

Why Should You Change Your Motor Oil?

The additive package gets used up or destroyed as the engine operates. When that happens, the additive package becomes a contaminant. If its not removed at frequent service intervals, it could contribute to sludge formation. The motor oil becomes contaminated with things like blow-by, fuel, metal engine particles, dust, and condensation. If these contaminants are not removed by changing the oil and filter regularly they get whipped into the oil also forming sludge. Sludge can clog vital engine passages and lead to damage or failure. Burning gasoline forms water as steam, about one gallon for every gallon of gas. Cold cylinder walls condense it and combustion gasses make it acidic. Metals are rusted and corroded by it, oil filters clog with it, wear is caused by it and sludge increases with it. Extremely high temperature operation causes oil to oxidize and thicken, forming sludge and varnish materials, and creates acids that corrode bearing materials. Oxidation inhibitors are used up in preventing these high temperature conditions.

When Should You Change Your Motor Oil?

Most manufactures recommend 7,500-mile oil changes for what they call normal service. Fords recommendation for this type of driving is 5,000 miles or 6 months. Normal service is defined by the API and SAE as; Start the engine, allow the choke or fuel injection system to normalize, usually within the first 30 seconds of operation. Accelerate to 60 mph or above as quickly as possible with no idling. Drive at or above 60 mph for at least 10 minutes. When you stop you turn the engine off, no idling. Only 5 to 10% of people drive like this, so the recommendation is not real for most drivers.

Severe service is defined as;

Short trips of less than 10 miles. Stop and go traffic. Extended idling. Driving in dusty, sandy or dirty air. Cold weather driving. 90 to 95% of people drive like this. In these conditions, oil changes should be done at 3 months or 3,000 miles.

Why a Time Recommendation?

If the car is not being used, the daily temperature changes still attract moisture in the crankcase. Moisture in the oil causes acid and it can only be boiled off by running the engine and driving the car for a minimum of 20 to 30 minutes. So the oil may need to be changed at a time interval, rather than a mileage interval.

Why and When Should You Change the Oil Filter?

The job if the oil filter is to remove oil contaminants. The filter allows the oil to flow through the element while capturing the solid contaminants and preventing them from getting back into the oil. When the filter element or

media gets full, the oil and contaminants flow around the filter media. This is called by-passing. When this happens contaminants are returned to the engine, causing sludge, accelerated wear and possible damage. Change the filter with every oil change.

Conclusion

Change the oil and filter every 3,000 miles or 3 months. Use a high quality motor oil and filter. Synthetic oils are the best.

If you have any questions, please e-mail me at "BigMikeT49@aol.com".

Michael Taliercio
President, Pro Lube Inc.

Frequently Asked Questions About Using Nitrous Oxide

By Wayne Ing
Super Coupe Club of Ontario
www.sccoa.com/sccoo

Introduction

Before I get technical, let me tell you a little about my Thunderbird and myself. I have been using nitrous oxide on my 1992 Thunderbird Super Coupe for about 4 years now. I am using the Nitrous Oxide Systems (NOS) dry manifold kit. I had started out with the recommended 60 hp shot and gradually increased it to 100 hp. Of course I have made the appropriate exhaust and fuel system upgrades along the way. My car also has the usual modifications such as 10% overdrive supercharger pulley, raised supercharger top, intercooler fan, transmission shift kit and 3.55 gear among other things. The car's ET's had progressively dropped from 14.9 without nitrous to it's present day best of 13.0 with nitrous. This time is fast enough to hold second place on the SCCoA's Top 25 Fastest SC's list.

My drag racing experience started on the streets of Markham (just north of Toronto, Ontario, Canada) where I would spend my weekends hanging out at a local donut shop called Millie's Donuts. This is the local hot spot where all of the fast cars hang out. I started racing other Super Coupes and modified import cars in the low-mid 15 second bracket. With the initial installation of the 60 hp kit, the car stepped into the low 14 second bracket. This was fast enough to get by most Mustangs, Camaros, and some Corvettes on the street in 1995-1996. With more tuning, I was then capable of running mid 13's with street tires. Simply changing the rear tires to Mickey Thompson ET Streets on stock wheels propelled me to the 13.0. I can tell you with first hand experience that this is fast enough to stay ahead of most cars on the street. I am tempted to go further into detail but those ramblings should be reserved for the BS sessions at the national SCCoA events.

Shortly thereafter, I started seeing more and more Super Coupes on the road. As the cars got older, the price came down and a lot more people were buying them used. Notably, a lot more young people who were interested in modifying them and racing them. That's when I decided to start a local Thunderbird club for Super Coupes. After a short discussion with Bill Hull, it was decided to be the first local chapter of the SCCoA called the Super Coupe Club of Ontario (SCCoO). After establishing the club in January of 1998 it grew rapidly. We currently have about 170 members in the SCCoO and still growing. I am pleased to see that many more local chapters have popped up all over North America since then. You can visit our club's website at www.sccoa.com/sccoo if you haven't already.

Since there are very few SC's using nitrous, I frequently get asked questions about how it works and what stumbling blocks I have encountered. The learning curve has been long and expensive. But who said racing was cheap?

Frequently Asked Questions

How does nitrous oxide work?

Nitrous oxide is a chemical composed of two parts oxygen, one part nitrogen. When stored in a nitrous bottle, it is in a liquid state under pressure. When this liquid is released into the atmosphere, it instantly becomes a very cold gas. When it is injected into and engine, you are in effect supplying the motor with lots of cold air. In order to maintain the proper air to fuel ratio in the cylinders, you must add fuel to the mixture as

well. You can add fuel together with the nitrous in the same nozzle (this is called a wet kit) or you can add fuel through your existing fuel injectors by increasing fuel pressure (this is called a dry kit). This large volume of cold air and fuel being injected into the motor creates more horsepower. The amount of nitrous and fuel are controlled by precise orifices in the nozzle called jets. This controls the volume of nitrous (and fuel on a wet kit) which is actually injected into motor. Different sized jets are available for different applications. Simply changing these jets allows you to change the horsepower level of your nitrous kit, and allows you to tune the air/fuel ratio if necessary.

What does a nitrous kit consist of?

The main components of the kit are the nitrous bottle, nitrous lines, nitrous solenoids, fogger nozzle, and associated wiring. The bottle is normally mounted in the trunk and stainless steel braided lines are run into the engine compartment. They are connected to the solenoids that operate like an electric valve to turn the nitrous flow on and off. Then the solenoids are connected to the fogger nozzle on the intake manifold where the nitrous is actually injected into the motor. If you are using a wet nitrous kit, you will also have a line running from you fuel rail to the fogger nozzle to supply fuel with the nitrous. A dry kit includes an adapter that increases fuel pressure via the fuel pressure regulator. The solenoids are wired to a switch within reach of the driver where he can turn it on and off.

How do you use nitrous?

Nitrous relies on the engines existing airflow to draw it through the intake manifold into the cylinders. Most cars require that you only use nitrous if the engine speed is over 3000rpm so that there is enough engine vacuum to draw in the mixture. On a supercharged application where the engine airflow is already very high at lower rpms, you can activate it sooner. You must be at full throttle whenever using the nitrous. This allows the engine computer to add more fuel and reduce engine timing. If you have a standard transmission, you will have to ensure that the nitrous is shut off when you lift the throttle to shift gears. Failure to meet these conditions will likely result in an engine backfire (explosion in the intake manifold) and serious damage to the engine including the supercharger and intercooler. Another consideration is over revving your engine while using nitrous. If you happen to mis-shift your transmission, or encounter excessive wheelspin, the rpms will climb very quickly. If you don't react fast enough, you will hit the rev limiter and the engine computer will cut spark to some or all of the cylinders. This could also result in a nitrous backfire. As a general rule, you will use the nitrous as soon as traction permits off the line. Traction becomes a serious problem when you have 60-100hp at a touch of a button. A 10lb bottle of nitrous will last 6-10 quarter mile runs depending on how much horsepower shot you are using.

Wayne's Nitrous Equipped SC

Should I use a wet kit or dry kit?

Everybody has their own opinion on this topic and there are advantages and disadvantages to both types of kits.

Nitrous Oxide Systems is the only company that sells dry nitrous kit since they invented and patented the technology. Dry kits are easy to install since they don't require you to run any fuel lines. All of the fuel required by the kit is supplied by raising fuel pressure through your fuel injectors to 70-80psi. There is a far less chance of backfires since you are not injecting raw fuel into the intake manifold and it can't puddle. Dry kits are limited because your fuel injectors and fuel pump can only supply so much fuel at this high pressure.

Wet kits use a fogger nozzle where the nitrous and fuel are injected together. You must run a fuel line from the fuel rail's schrader valve (the port where you measure the fuel pressure) to the fogger nozzle to supply the fuel. Wet kits do not

increase fuel pressure. They allow you to tune your nitrous kit more accurately because you have direct control over how much fuel is being injected by the nozzle. Wet kits are not limited by how much fuel your injectors can supply or how much fuel your fuel pump can supply at high pressure. There is a much greater chance of nitrous backfires since you are injecting raw fuel into the intake manifold.

I believe a dry kit is the best choice for applications from 60-100hp. The kit is simple, safe, and reliable. If you want to exceed 100hp, then a wet kit is better since you will be able to control the fuel delivery better. You would need a heavily modifed Super Coupe to withstand a nitrous shot over 100hp. I don't know of anybody reliably running that much nitrous at this time.

How hard is it to install a nitrous kit?

If you are comfortable performing your own maintenance on your car, you will likely be able to install it yourself. The only tricky part is mounting the fogger nozzle on the SC. It needs to be tapped into the lower intercooler tube (after the intercooler and before the intake manifold) for best results. You can also install it to the elbow from the lower intercooler tube to the intake manifold. I chose to install it in the lower intercooler tube since it was easier to drill the hole and made the nozzle more accessible for changing jets. Extra care must be taken to ensure no metal particles fall into the motor. I would not recommend injecting nitrous at the throttle body since the nitrous must travel through the supercharger and intercooler. The extremely cold temperature of the nitrous could have adverse effects on these components. This is especially dangerous if you are using a wet kit since there is a much greater chance of the fuel puddling at the supercharger or in the intercooler resulting in a backfire. It is ideal to inject the nitrous as close to the intake manifold as possible so that the motor receives a colder nitrous charge and for better nitrous/air/fuel mixture. Specific instructions for installing the other components are not specific to the SC so I won't get into them here. Detailed instructions will come with the kit.

How much nitrous can I safely run on my SC?

Nitrous Oxide Systems (NOS) recommends 60 hp for a stock SC using their dry kit. This is what NOS considers to be a safe and reliable level for the application. Upgrading the exhaust system will yield greater gains from your nitrous kit. Should you decide to use more than the recommended 60 horsepower shot, it will be done so at your own risk.

Do I need to upgrade my ignition system to run nitrous?

The Ford DIS ignition system is more than capable of sustaining over 400hp. I have not seen evidence that aftermarket ignition boxes like the MSD are beneficial for the Super Coupe. NOS recommends gapping your sparkplugs lower to .035 from the stock .054 to better ignite the mixture. I have tried changing the sparkplug gaps from .035 to .045 and did not notice any difference. I run a stock ignition system on my car with Taylor sparkplug wires and NGK Platinum sparkplugs.

What are the advantages of nitrous oxide?

The main advantages of using nitrous oxide are the price and performance. There is no modification that will give you more horsepower per dollar gains that nitrous will. It is relatively easy to install as well. Nitrous also generates instant horsepower when you hit the button. You have an instant horsepower gain where naturally aspirated, supercharged, or turbocharged motors must build engine rpm and boost to make more horsepower. This is especially effective for quarter mile drag racing since you get a large surge of power off the line to get the car moving. Nitrous is especially effective on the Super Coupe since it is already supercharged and intercooled. A 60hp nitrous kit will drop your ET's by about one second. A 100 hp kit on my modified motor dropped my ET's by almost two seconds.

What are the disadvantages of nitrous oxide?

The major disadvantage of using nitrous oxide is having to refill the bottle. Some people say that "it's not there all the time" and that is somewhat true. Other engine mods will be active all of the time. I consider nitrous to be an addition to my existing modifications, not a substitute.

You must be cautious when handling nitrous. The gas is extremely cold and can cause serious injury if it comes into contact any part of your body. It

should also not be inhaled as it starves your brain of oxygen and can cause unconsciousness and/or brain damage.

There can be some danger if the nitrous bottle pressure becomes too high. This can be caused by overheating the bottle, overfilling of the bottle, or leaving the bottle in direct sunlight on a hot day. There is a safety blowoff valve on the nitrous bottle to release the contents to atmosphere at 1500 psi. This is to prevent the bottle from actually exploding and potentially killing somebody.

Some people claim that nitrous will "blow you motor" but that is only a result of improper use or installation. When a nitrous kit is installed and tuned properly, it s perfectly safe for your motor at the manufacturer's recommended horsepower level. If you decide to increase the horsepower of your kit beyond the manufacturer's recommendations, then you do so at your own risk. You have nobody to blame but yourself if your engine is damaged.

What kind of problems should I be aware of when using nitrous?

Upgrading the exhaust system is always a good idea when modifying an engine. The SC exhaust is already restrictive on an unmodified motor. I would strongly recommend you upgrade the exhaust system from the exhaust manifolds back. Headers would help a lot too if they are within your budget. If you intend on using more than 60hp or if you already have engine modifications, you will need to upgrade the fuel pump as well.

Keep in mind that you are increasing the horsepower output of your car by up to 100 hp. If you car was only engineered to handle a certain horsepower level, then increasing the horsepower by any means, whether it be by engine modifications, supercharger, turbocharger, or nitrous oxide, you will quickly find where the limitations are. Don't blame the nitrous kit for making too much horsepower!

Earlier model Super Coupes (89-93) are known to have weak head gaskets to begin with. If your car is high mileage with original head gaskets, the additional horsepower from a nitrous kit may cause them to blow. Some SC owners have claimed that simply installing a supercharger overdrive pulley caused their head gaskets to blow. Ford revised and improved the head gaskets in the 94-95 Super Coupes and should not suffer from this problem. If you are replacing your head gaskets, I would recommend using the ARP head studs available from Super Coupe Performance Inc. (804-974-6659).

The Super Coupe uses soft liquid filled motor mounts to absorb vibration from the motor. Spirited driving in an unmodified SC is enough to break these mounts. The additional horsepower from a nitrous kit will likely accelerate the wear. You can upgrade them to solid rubber mounts found in naturally aspirated V6 Thunderbirds. You will notice more engine vibration though.

If you have installed an aftermarket computer chip such as Hypertech or Superchips, you will likely have to remove it before using nitrous. These chips increase engine timing that will cause detonation when using nitrous. You must be running normal engine timing when using nitrous. I am using a completely stock engine control computer and no aftermarket chip on my car.

The Ford Double Platinum sparkplugs are not suitable for high horsepower nitrous applications. The platinum disks attached to the electrodes will blow off under extreme cylinder pressure (the electrodes themselves don't blow off). This substantially increases the spark plug gap and will cause misfiring. This may not occur at the 60 hp level, but will definitely occur at the 100 hp level. I would recommend regular Ford plugs or NGK Platinum sparkplugs for this application. I don't like the Bosch Platinum plugs since the electrode is extremely small and tends to burn back into the ceramic insulator.

What optional accessories should I consider for my nitrous kit?

There are many accessories that contribute to the safety and convenience of using nitrous.
The first is the wide-open-throttle switch. This is standard with all kits but many choose not to install it. This switch only allows the nitrous to be activated when you are full throttle. Activating the nitrous system at idle or part throttle will likely result in a backfire and serious engine damage. This is a must!

Next is a rpm activated window switch. This module will only allow the nitrous to be activated above and below two preset rpm points. For example, from 3000 to 6000 rpm. Above or below this window, the nitrous kit will automatically shut off to prevent engine damage.

A nitrous bottle pressure gauge will let you monitor and maintain the proper pressure of your nitrous bottle. If the pressure it too high, the car will run lean. If the pressure is too low, it will run rich. Nitrous kits are designed to run with the bottle pressure between 950 and 1050 psi.

A bottle heater is critical if you want to use nitrous on cool days or cold nights. The bottle pressure must be 950-1050 psi. The pressure will drop below this if the weather is too cold. The bottle heater will maintain the temperature for optimum performance. NOS makes a bottle heater which is thermostatically controlled – just turn it on and forget about it. Other heaters have no automatic control and must be manually shut off when the desired pressure is reached.

A bottle blanket is an insulated cover for your bottle that helps hold the heat in and requires the bottle heater to cycle on less often. It looks nice, it's cheap, and functional.

A remote bottle valve is a nice luxury to have. Normally you would have to turn the bottle valve on each time before using the nitrous, then turn it off afterwards. This valve allows you to keep the bottle open in the trunk at all times and have it ready for use at a flick of a switch. This also gives you a secondary method of stopping nitrous flow to the motor should a nitrous solenoid fail.

A second nitrous bottle (or a larger 15lb bottle) is a must for serious racers. This way you are never caught empty handed. There are times when you just can't get the bottle refilled when you need it.

A fuel pressure gauge and exhaust gas temperature gauge will help you tune you nitrous kit for maximum results. This will let you know if your fuel supply cannot keep up and if you motor is running rich or lean. If you only intend on running a 60 hp kit, these are really not necessary.

Summary

Nitrous Oxide can be a safe and cost effective method of increasing horsepower in the Super Coupe. Nitrous oxide should be considered as a modification for racing purposes only. It's only purpose is to get you to the end of the quarter mile before the other guy. There are certain safety and reliability issues associated with racing any car and the Super Coupe is no exception. If you are going to increase the horsepower output and race on a regular basis, you will break parts. This is a risk you accept when you become an active drag racer. Nitrous is not for everybody. Some prefer to perform smaller modifications which they can feel all of the time. Others want an all out rush of power for drag racing. That is something you have to decide for yourself. If your budget is big enough, you can have both. I can tell you from experience that the feeling of a 100 hp surge at the touch of a button is addictive. Once you've tried it, you won't want to give it up.

You can find plenty of useful information about general nitrous oxide applications from NOS's website at www.nosnitrous.com.

If you have any specific questions that I have not answered here, you can email them to me at "sccoo@home.com".

Pearls of Wisdom by Yogi Berra:

- Always go to other people's funerals, otherwise they won't come to yours.
- Baseball is 90 percent mental and the other half is physical.
- It's tough to make predictions, especially about the future.
- You can observe a lot by just watching.
- We made too many wrong mistakes.
- We have deep depth.

Super Coupe Club of America

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Rear End Gear Changes

The Best Bang for the Buck

by Rick Cunningham - Member #20

Being a member of SCCoA since it first started nearly four years ago, I've educated and taught myself how to maintain and work on about every aspect of a Super Coupe. We must all thank Bill hull for starting this wonderful club. Without his vision, we would probably not have been able to keep our Super Coupes as long as we have or had a parts supply to upgrade these awesome machines. I remember Bill saying, "Start with exhaust before starting on the engine. Then you should change the rear gears and you will really feel the difference!

I work part-time in a Ford performance shop, so sometimes I'm lucky enough to be able to use a lift. This makes a big difference, along with having club member Mike Puckett around to help with each other's cars. Mike already had 355 gears in his 5-speed. The last time we went to the dragstrip, my 273 5-speed was no match for his 355's. That was when I realized it was time for a change. I had already done exhaust and engine modifications, so I started with my '90 automatic with 327 factory gears. I had already rebuilt my transmission with a low gear set and shift kit installed. I chose a 373 gear to keep my car streetable and capable of performing at the dragstrip. After completing the gear change, I took the used 327's and installed them in my 5-speed. Wow! What a difference from the old, slow 273's. Now, I'm waiting for spring so I can take it to the strip and see the results. The difference is simply (seat-of-the-pants) quick acceleration! For the price, you can't beat it.

Here in Atlanta, I checked with Tommy Higgins of Higgins Ford Performance (770 949-1234). He says if you bring in your car to have the complete service, you're looking to spend around $500. If you take the rear end out yourself and bring it to him, you'll spend approximately $125. Of course, you must buy the gears that will cost approximately $175. You will also need a pinion gear bearing, crusher sleeve, pinion nut, pinion seal, 3 quarts of differential fluid and a 4-ounce bottle of Ford Friction Modifier. The total of all of these items will be approximately $30. Also, you will need to change your speedometer gear ($3.00). Be sure to count the teeth on the old gear. Generally, you'll need to go up two teeth for each gear you go down. Example – 2.73 gear requires 17 teeth, 3.08 requires 19 teeth, 3.27 requires 21 teeth, 3.55 5-speed requires 23 teeth, 3.73 AOD requires 21 teeth and 4.10 requires 23 teeth.

(FYI: There is a speedometer gear calculator on the SCCoA web site. Check it out if your not sure what gear you need for your combination….Editor)

If you are mechanically inclined, you can take the rear chunk out yourself. It's better to have a lift, but if you can get your SC on jackstands that will suffice. I'll take you through the process of taking out the rear end, so you'll be able to take it to someone you trust to change the ring & pinion. First, you must remove the right rear passenger tire. Next remove the brake caliper and hang it out of the way. Mark upper and lower control arms with black marker. Then loosen upper and lower control arm bolts. Next remover lower shock bolt. Mark driveshaft bolts with Sharpie or paint before removing them. These four bolts must go back exactly the way they came out of the driveshaft. Now, remove ABS sensor bolts on each side of the rear end and hang sensor wires out of the way. You can now place a large screwdriver or pry bar between the side of the rear end and axle hub. Pull slightly to loosen axle from rear end. Pull axle straight out of rear end, carefully not banging or knicking the seal in the side of the rear end. If your SC is on jackstands, put a jack under the rear end. Remove two front bolts on each

side of the rear end. Then, remove the two bolts on the rear support brace on back of the rear end. Make sure jack handle is pointed straight out the open wheel well. Make sure jack is supporting rear end. Now, pry loose axle hub on driver's side. Then, lower slowly and pull jack straight out the passenger side wheel well. If your SC is on a lift, you can use a transmission jack to lower rear end out from under the car. If you don't have a tranny jack, it will take at least two people to lower the rear end out from under the car. Remember that the rear end has to come out towards the passenger side.

When re-installing the rear end, make sure to insert driver side axle before inserting the passenger side axle. Install the two front bolts on each side of the rear end and then the rear ones. Now, install your upper and lower control arm bolts. Make sure the marks you previously made match up properly. Install shock bolt and then brake caliper. Next, re-install driveshaft bolts exactly as they came out. Bolt on your tire and you're almost ready. Unbolt your speed-o-meter gear. One 11mm bolt holds this in place on the side of transmission. Simply, remove the plastic gear on end of cable. Count the teeth just to make sure you're putting on the correct gear. Like I said earlier, go up 1 tooth on your gear for each rear gear you go down. This should give you the correct speed-o-meter reading. Variances in tire sizes can also change your rear end ratio. If you go to the dragstrip with 373's and standard 16' rims and tires, you can lower it even more with 15 rim and drag radials. I think this is an excellent idea if you go racing.

If you don't want to run the lower gear on the street or spend the money for the work, here's another alternative if you're interested in drag racing. If you're running a standard 327 gear and 16 inch rim in your automatic SC, you can use a standard 15 inch LX Thunderbird aluminum rim with BF Goodrich drag radials. You'll lose at least an inch and lower your rear gear ratio significantly depending on the size of the sidewalls of the rear tires.

Well, this is basically my experience with gear changes. I've learned a lot just in two gear changes and looking forward to training in doing the ring & pinion change itself. If you need more information on this, refer to your Ford Manual or refer to the Super Ford issue August 1996, page 103. This shows you in detailed pictures how to remove the rear end. This is also the same issue that Bill Hull's SC appears in. So let's get those gears changed and get those Super Coupe's moving quickly!!!

References:
1990 Ford Service Manual
August 1996 Super Ford Magazine
Higgins Ford Performance 770-949-1234

SCCoA T-Shirts: Check out http://members.truepath.com/xs_tork/tshirts.html or call Patty and I to order at 513-697-6501 $15 + $3 shipping

Solid Engine Mount Install Procedure for 3.8L SC

By Christopher M. Iarocci

1. Drain the engine coolant. (helps with making less of a mess later in the job and also a good time to change the coolant while you're at it)
2. Unbolt the rubber boot from the intercooler and disengage the two lower clips.
3. Raise the car up on jackstands or a lift (if you happen to have access to one)
4. Remove the catalytic converter assembly from the car.
5. Remove through bolt holding steering rag joint to P/S rack. Disengage rag joint from rack and push steering shaft to side.
6. Remove starter.
7. Remove knock sensor and knock sensor shield. (Be careful when you remove the shield because the bolt is screwed into a water jacket in the block and coolant will pour out. I suggest a drain bucket and standing back when removing this bolt)
8. Remove two lower through bolts in motor mounts and the one lower bolt on driver's side towards outside of lower bracket.
9. At this point you need to put a jack under the motor in an appropriate spot so you can raise the motor about 4 to 5 inches. Under the front crank pulley or under the oil pan (with a block of wood) are two good places. Raise the motor.
10. Remove the three bolts holding the upper mount brackets to the block. (this is a bit more difficult than it sounds but with the correct swivel sockets and extensions it can be done relatively easy)
11. Remove old mounts from the back of the engine and bring to the bench.
12. Remove brackets from old mounts and install on new mounts. (I found it necessary to remove the rubber bumper on the driver's side because the solid mounts are a tiny bit taller than the liquid mounts. This hasn't caused a problem for me as I've been using the solid mounts this way for a few months now.)
13. Reverse the removal procedure and you're done. One note though, you will need more height on the motor for the install because the new mounts are not collapsed and broken. A little maneuvering will get the mounts back into place.

For a person that has never done this before the job could take upwards of four hours to complete. For an experienced technician working on a lift it is a two and a half-hour job. When I do this at home with the car on jackstands I can get it done in approximately three hours.

My suggestion for anyone replacing their motor mounts is that they contact Rich Thomson at MN12 Performance. The web site address is www.mn12performance.com or call 703-968-6513 and get a pair of the solid motor mounts that he carries for the Thunderbird. They are half the price of the factory liquid filled mounts and will last much longer. The added vibration from the solid mounts is so little most people would not even notice it.

SC Club of the Southwest Outing

Injector Swap

By Charles Markman

This is a supplement to the factory Ford shop manual for the replacement and or upgrade of your fuel injectors. This installation was performed on a '92 5spd. Your Super Coupe may vary. When re-assembling the car, be sure to use the factory torque specs on all bolts.

Parts Necessary:

Injectors (vehicle specific)

Ability to recalibrate mass air flow sensor, if upgrading:
New sample tube for C&L
Interactive Systems & Technologies
Air adjuster
Pro-M recalibrated sensor

Supercharger re-seal kit. Or appropriate gaskets and sealants.

Tools necessary:

T-15 tamper proof Torx for C&L mass air meter, if necessary
T-30 Torx for fuel rail bolts
Fuel rail disconnects
6mm hex bit, if using SCCoA blower outlet
Blower outlet collar wrench
Wrenches (10mm, 13mm)
Sockets (8mm, 10mm, 13mm, 18mm)

To begin, remove the battery cables. Also de-pressurize the fuel system. This can be accomplished by covering the Schrader valve with a rag and pressing the core of the valve in. It is the same as a tire valve. Letting to car sit over night will usually allow the pressure in the system to bleed down sufficiently.

Lift the car and remove fuel rail attachment bolt at the rear of the driver's side cylinder head (10mm). Return vehicle to the ground.

Remove blower belt from supercharger by rotating the idler pulley (18mm).

Disconnect air inlet plumbing (factory air box, if so equipped.) Unplug Mass Air Meter (MAM). Set aside. Remove throttle linkage from the Throttle Body (TB). Remove cables from plate on inlet plenum using 8mm socket. Unplug connectors from the TPS and the IAC valve, located on the TB.

Loosen hose clamps from blower bypass. Disconnect vacuum lines from rear of inlet plenum. Remove Temp sensor connector from tube adapter. Be sure to mark where they all go.

Remove blower discharge collar. Unbolt upper intercooler tube from intercooler (2 (13mm)), remove upper tube. Be sure to remove the nut-stud combination, which supports the upper intercooler tube. If you are using a SCCoA blower outlet, it is probably long gone!

Disconnect the plug wires for cylinders 1,2 & 3 and drape back over to the passenger side of the engine compartment. I believe that the EGR must also be removed at this time, but my car does not have it. So, I cannot comment. Consult your shop manual.

If your vehicle is using the SCCoA blower outlet, it must be removed for bolt clearance (4 (6mm hex bit)). Stuff clean paper towels in the blower opening to prevent Foreign Object Damage (FOD).

Unbolt blower from intake manifold (1 (18mm) & 2 (10mm)). Lift blower at the front and slide to the passenger side to disengage the bypass tube. The blower should now be free of the car. Set aside.

Unbolt lower intercooler tube from the tube adapter (2 (13mm). The intercooler may move a bit, but the support bolt in the middle of the tube should hold everything ok. Unbolt the tube adapter from the intake manifold, (3 (10mm)). One bolt is hidden behind the

adapter. If you have an extra gasket (in reseal kit), you can see where the bolt goes. Remove the adapter and set aside. Put more clean towels in the intake manifold opening, more FOD prevention.

Unplug all the electrical connectors for the injectors. Use fuel line disconnects to remove fuel lines. Fuel will drip out so have some rags handy. Unbolt fuel rail retaining bolts (4 (T30 Torx)). The fuel rail should now lift off of the engine. When the rail comes off, the injectors will go with it. Cover the engine with some clean towels, FOD again.

Take the fuel rail to a clean workbench, or milk crate, whatever works for you. Try to rotate the fuel rail around to get as much gas out as possible. Drain into suitable container. The injectors are held on to the rail with a little snap clip. The clips can be removed with a pair of pliers. Remove all of the injectors from the rail.

Be sure that there is no leftover pintle cap (injector tips) stuff (mine were cracked), or other debris, in the injector holes. If so, you might want to pick it out with some tweezers, if that does not work, try a shop vac to get it out. Remember that the injector holes go directly into the intake port. So don't drop anything in there!

It is now time for reassembly.
The injectors slide right in to the fuel rail and the clips snap back into place, retaining the injectors into the rail. Some Vaseline will help lubricate to the O-rings to make installation easier (use sparingly). Place the rail and injectors over the engine. Slowly push each injector into the cylinder heads, some Vaseline can help here, too. Torque the fuel rail to intake manifold bolts to spec (4 (T30 Torx)). Raise the car and tighten the bolt in the back of the cylinder head (10mm).

For the rest, just follow the above directions in reverse. When re-assembling the car, be sure to adhere to the factory torque specs.

Charles's '92 with black '98 Cobra 17" rims

All of the intercooler tube connections, the blower outlet connection and the intercooler tube adapter must be sealed, otherwise pressure and vacuum leaks WILL occur. The intake to intercooler tube adapter gasket and the Teflon tape for the intercooler tube connections are contained in the supercharger re-seal kit. This is available from Bill Hull's new company or your local Ford dealer, maybe. Also if you are using the SCCoA blower outlet, you will need more of the flange sealant. I had enough sealant leftover from the initial installation for this job.

If you are upgrading to larger injectors, you will also need to recalibrate your mass air flow sensor. I am using a C&L 73mm MAFS, so all you need to do is to replace the sampling tube.

Removing the MAFS from the inlet tube starts this process. The sensor must be removed from the housing with the T15 tamperproof bit, hopefully you have saved this tool from the initial installation. Then use a hex hey to remove the sample tube from the housing. Replace with the recalibrated sample tube.

Good luck with your conversion. If you have any questions, you can reach me via email at: cmarkman@compuserve.com

SC-YA IN TULSA 2000

APRIL 7 - 9, 2000

The 3rd Meet of the SCCoSW

(Could be the first unofficial SC only national meet)

By Glenn Huber

Well fellow SC worshipers, by the time this issue of Charging Thunder gets to you, Spring should be officially underway even if some of you are still buried in snow drifts. Most of us wild and crazy guys in the Southwest chapter enjoyed another mild, sunny winter and so our SCs barely got to taste freezing cold air flowing through their intercoolers. Some of us are trying to change that with the help of compressed Carbon Dioxide gas but that's food for thought in another issue of CT.

The purpose of this dribble is to inform all of you of the SCCoSW's third and biggest meet will take place in Tulsa, Oklahoma, on 7, 8, and 9 April, 2000. We have several supercharged events planned to include: Runs on the ¼ mile drag strip of Tulsa International Raceway (Saturday night); our trademark escapades on some desolate industrial park (check out the multimedia section of SCCoA web page for clues); meeting with fellow SC owners discussing current and future modifications to our cars; share tall tales of smoking Mustangs, Camaros or some imported, big muffler, front wheel driven car; and wrap things up by handing out some bitchin' best-of-class certificates signed by Bill Evanoff, President of the SCCoA.

We know that when you read this you will have little time to make arrangements to attend this filled event like this, not to mention the distance needed to travel, but we urge you to attend if you possibly can. Like the saying goes "no guts, no glory." Seriously, we picked Tulsa because it was within our Chapter's region of coverage and it's roughly in the center of our beloved country. I am sure the bulk of SCCoA members are located on the East or West coasts making extremely hard to drive to Tulsa, but we would be thrilled if you can joins us and perhaps you can combine it with another trip along the way (note: Bill, err…Mr. President, it would be interesting to know how our membership is spread across the country in a future article and hopefully that will lead to an official SC only event).

If you think the date is to early (i.e. cold and maybe rainy), well we settled on April so as to not be too close to other major events like the national Carlisle All Ford's car show and swap meet (June). While these national events are truly a sight to see, they tend to highlight parked cars and are more restrictive than an exhaust resonator on a stock SC!! Surely we want to meet other SC followers and awe at each others cars, but our meets have more in common with the acrid smell of burning rubber than the dust pulled up by a detailing brush.

Lots of folks have already e-mailed us at SCCoSW@hotmail.com with plans to SC-YA in Tulsa. If more than 30 Super Coupes and blown XR-7s show up in Tulsa (you 4.6 Sport T-Bird owners are welcome too), we will ask the SCCoA president call it the first unofficial SC only meet, and hopefully push for a future SCCoA only national meet.

The details for organizing SC-YA are challenging and some things still need to be ironed out; however, we have two motels reserved should high attendance necessitate a second motel. The track will be available to us for 4 hours on Saturday

night. The cost for five runs is $22 per car. Many of us have never run a car on a drag strip, including me, so don't be intimidated by having a bad ET because of a bad hole-shot or a missed shift. The idea is to have fun and see how much our modifications have improved the performance of our Birds of Prey.

Kurt Sunday, Will Preisler, Dan Cullen, Doctor Fred and others will descend upon Tulsa on Friday, April 7th after running hard for 500 or more miles to get there. Others, like me, will arrive before high noon on Saturday because of limited free time. In my case, a three-day kitchen-pass is out of the question (unless I want to be served divorce papers upon my return from Tulsa). Whatever time you can spare that weekend, we can certainly assure you that you will leave with a smile on your face and feeling the effects of extended adrenaline rushes. SC-YA there!!!

P.S. Make sure to visit the SCCoSW Chapter link on the on "www.sccoa.com" for updated information and a schedule of events for this meet. Or you can call Kurt Sunday at (915) 877-7218 or Glenn Huber at (915) 568-2276.

Bitten by the Bug

By Pat DiPersia

Yes, I've been bitten by the bug. *The racing bug*. Sure, most, if not all of us, have done the ¼ mile. And yes, it's a blast – for about a fraction of a minute. Now, how about that fraction of a minute taking about 20 minutes? Well, surely that wouldn't be good for your quarter mile time, but how about running around Pocono International Motor Speedway? Now that's a blast!

Near the end of last summer, a friend of mine from work, who is very active with Miata's and racing, invited me to spend a Monday with him and his Miata club. They had rented out Pocono raceway for a day of instructional driving. He explained that they did this once a year and rented the North course, which consists of a straight-away, banked turn and then the inside road course (Imagine running the track backwards beginning at turn three and you'll understand.) This way, you can really "learn" how to drive your car. He further explained they did not rent the course for a bunch of motorheads to go out and see how fast they can make their car go. They had instructor's onsite to teach everyone how to drive the course. I figured, hell yeh, I know how to drive! Most of us do. But there's plenty to learn!

Anyway, my Miata friend spent the next few weeks trying to convince me to go. I was worried since I didn't drive a Miata, I wouldn't fit in. I also knew that some of these guys had 13 second Miata's and would kick my ass on the track between fast straight-aways and lighter front-wheel drive cars which would probably take the turns much better than my RWD, two ton beast! At the last minute, I decided to try it.

So we arrived at the hotel Sunday afternoon. We had to be at the track at 7am, and it's a two-hour drive for me, so most of the club stayed overnight at the hotel. We had a nice dinner together and I was able to meet many interesting people and make some great friendships. Most people were a little surprised to hear what I would be driving, but they made me feel like

part of the Miata family and we enjoying swapping many car stories until late in the night. I also found out that I wouldn't be the only "non-Miata" on the track. That I knew of, there would be a Porsche and a new VW Beetle as well.

Monday morning finally arrived after a mostly sleepless night from worrying. I didn't know what to expect and I was scared to death. Everyone worked on convincing me I would do just fine and not to worry. It wasn't about speed, it was about learning. And once I learned how to "drive," the speed would come naturally. I didn't know WHAT to make of that!

Pat's '94 SC

Anyway, there were thirty drivers, which were grouped into three categories; beginner, intermediate and advanced. There were also ten instructors. The instructors were fantastic, and were also free! In exchange for instruction, they were give the most track time of anyone, and it was well worth it. Most of them had attended driving school and were SCCA drivers and competed in many autocross runs.

The morning started out with the beginner group in a classroom settings to learn the track and how to take the turns. The intermediate and advanced groups didn't need to go through this as they had been on the track before. The beginner's were also driven around by the instructors just to see the track before cruising around it. The intermediate group was given instructors throughout the day, while the advanced group had the option of using instructors or just having track-time to refine their skills.

It was finally my turn to take the track. My instructor took three laps in my SC and I was scared to death. Here's some stranger driving my car and he's expecting a Miata. But he did fantastic, and was a little surprised at how well it handled. I had nail marks in the door handle and dash because I wasn't expecting to be taking turns at quite the speed we were taking them.

After three laps, I took the wheel. We started out slowly but quickly picked up the pace. As everyone had tried to convince me, as you learn the track and start to master it, you'll suddenly realize how fast you're going without thinking about it. After several laps, I looked down to see 110mph on the straight-away. I was shocked! Not that I've never gone that fast, but it just didn't seem right for some reason (Maybe since I wasn't worried about cops or something!) What a thrill! The next thing I needed to learn was the correct blend of brakes, down-shifting and still getting through turn #2 at about 70-80mph without losing control – no problem! I came off the track the first time with such a smile – they said I had an ear-to-ear grin and it looked like I just lost my virginity! It took weeks to wipe that smile off.

As the day wore on, I was able to pick up several tips and how-to's from my instructor. I even took a trip on the track in his car once. My instructor was very pleased with my driving ability and was impressed with my ease behind the wheel. He said most of his students were scared stiff and couldn't even hold a conversation, but we chatted

the entire trip around the track at 100+ mph.

This continued on throughout the day. I continued watching the intermediate and advanced drivers to see their lines through the turns and what did and didn't work. I even made two trips out to work the corners (AKA – flagger, in case any trouble arose in the corners.)

After my second run, I brought the SC back to pit lane and had a crowd following me. Everyone wanted to know what was really in this car that made it go! They were seriously impressed, especially when the hood went up. "This thing is BLOWN? WOW!" Impressed would be a good word when they also realized my baby was twice the weight of their Miata's. "And it's stock? It's THAT fast stock?!" I couldn't keep myself from laughing.

For my fourth and final trip out, I was granted a solo status. This meant, I did a job well done and was not in need of an instructor for my final run. What a thrill! All-in-all, the day was incredible and I can't wait to do it again. We were pretty much incident-less, except for a few spin-outs and one minor loss of control, but everyone was able to drive home what they brought – that was the all important sign that you had a good day. We wrapped up the day with dinner and headed home, trying hard to keep the speedo out of the triple digits on the turnpike (Even though I felt right at home doing 125mph on the turnpike!)

I'm scheduled to make another trip to Pocono for an entire weekend of fun at the end of April. Unfortunately, I won't be with Miata's this time around, but instead, Corvettes. Let's hope this old Ford can give those GM's a run for their money! All this planning needs to take place so early (We usually book Pocono a year in advance), so I'm going to begin planning a trip for the SCCoA next summer. Hope to see you all there! And don't let the racing bugs bite!

My Love Affair With My Super Coupe

By Clifford Jolley, Jr.

What can I say? I've been involved in a love affair going on 6 years now. It's an addiction, a habit that I just can't (or want to) shake. My wife has been patient with me for quite some time. She thought that I would outgrow this obsession and come to my senses. Much to her chagrin, this has not happened. She has now come to a grudging acceptance of the fact that while I love her very much, she is not the only one in my life and I've got to have them both. I guess I should be glad that she hasn't yet forced me to choose between her and "the other woman".

And just who is this "other woman" you may ask? Why, it is none other than my 1994 5-speed Ford Thunderbird Super Coupe (Now you didn't think that I would taking about a literal "other woman", did you?)! Even my son, who is quite a car nut as well, thinks I'm crazy. Now just how did I get myself into this predicament?

My love affair with the Super Coupe had its beginnings back in the summer of 1988. I was fresh out of college and just hired into Ford, working as an engineer in their emissions lab. I needed a set of wheels fast. What do I get though? I have been a car nut since my early teens and have been an admirer of what Ford was doing with their cars at the time. At first, believe it or not, my first choice was a Mercury Sable STATION WAGON! As I got ready to buy however, I thought, "Wait a minute! I'm still young (Early twenties). Do I really want a car that says 'old man' at this stage of my life?" The more I thought about it, the more I realized that what I really wanted was something sporty (read "FAST"!).

I still wanted something that was at least somewhat practical (being married at that time). That ruled out the Mustang (Too small even though it was quick). I looked at the Thunderbird. It was just the right size. It was sporty. It was even fast (In the Turbo Coupe form that is)! Best of all, I could get it as a 5-speed (Keep in mind that I didn't even know how to drive a car with a manual transmission at that time!)! My mind was made up. I was soon the owner of a brand new Thunderbird Turbo Coupe 5-speed.

I had a lot of fun and good memories wrapped up with that car. Various members of my family and I learned how to drive a stick on that car. As you can imagine, the clutch didn't last too long (28,000 miles). I also learned about the joys of power shifting (And transmission rebuilds) on that car. I eventually sold that car to a good friend of mine (And yes, we are still friends). He sold it about a couple of months before I wrote this article. It had 140,000 + miles and was still running strong. I really miss that car.

Now what, you may say, made switch from the Turbo Coupe to the Super Coupe? It's kind of a long story but here goes. I've known about the SC for a long time, having read about it in the enthusiast car magazines back in '86 – '87. It was interesting but I didn't pay it any mind back then. I was freshly married and still trying to get through college. Now that I was working at Ford, I started to check out all the cars that they were developing at that time. The MN12's were really good looking up close and personal. Naturally, the SC looked really appealing to me! I later got a chance to drive a couple of prototypes (one with an automatic and one with a manual transmission) just before they went into production. I was now hooked. That Turbo Coupe that I loved so much now looked like yesterday's news. My mind was made up; I had to have an SC.

Naturally, having had the Turbo Coupe for just six months or so, I knew I couldn't afford to trade it just yet. I couldn't even sell it and get enough to pay it off. Like it or not, I knew I had to wait. I figured that if I could wait until '91, I could ditch the Turbo Coupe and buy my dream car with no hassle. Also, because I could get inside information at Ford, I knew that the SC was getting some minor changes in some features that I knew I would like.

Then it happened. As '91 approached, I happened to be strolling through Ford's experimental vehicles garage and I saw a prototype for the '94 SC. By this time, I was doing engine testing in Ford's Dynamometer Lab. I got to know the people who developed the 3.8L SC engine and they told me about the changes in store for the '94 model. I knew the engine was in store in more power but that was because the car would be heavier from the changes made to comply with Federal regulations (Such as dual air bags) and the "powers that be" wanted to maintain the same level of performance. That in itself would not have made me wait for the '94 model. What did it for me were the good looks of the prototype I saw. (As a sidebar, I know that the looks of the '94-95 models were controversial. Either you liked the look or you didn't. I did. I still do. Enough said!). It was a painful decision because I wanted an SC BAD!!!!!! I swallowed my desire however, and decided to wait.

To bide my time until I could obtain my dream car, I sold my Turbo Coupe and bought a used '90 Taurus SHO. That engine was an absolute jewel and it was FAST! Unfortunately, that's about the only good thing I can say about the car. I had numerous problems with the transmission shift linkage and other minor breakdowns (No problems with the engine, ever!). To add insult to injury, I was involved in several accidents with that car and ALL were in the rear end of the car! The worst of the accidents did $7000 worth of damage and left the car in the shop for 3 months while I waited for Ford to supply a new trunk floor. It was like someone painted an invisible bulls-eye on the rear end. Needless to say, it was never right again.

After struggling with that car for three years, the time finally came for me to buy my SC. I went to my local dealer and placed an order for a '94 SC, black with a tan leather interior, with every option in the book (Including the cellular phone) and best of, a 5-SPEED! My salesman really gave me some funny looks over that one! I happily traded in my SHO and I started counting the days until my dream car would arrive. Finally, while working on a Saturday, I drove by the dealer on my way to lunch and I caught sight of the most beautiful black SC I have ever seen (OK, OK, so sue me for using a little hyperbole here!) sitting a little distance off inside his lot through the chain link fence. Monday, I made a beeline to the dealer and sure enough, it was MY SC I saw sitting there. I took care of the necessary paperwork with and on Friday, April 29, 1994, after more than five years of waiting, I was FINALLY a SC owner. My dream car was mine, AT LAST!!!

Now that I finally had the car of my desires, I quickly lost interest in all other cars. They just couldn't hold a candle to my SC. In fact, I loved this car so much that I couldn't bear to drive it, lest something would happen to it. To that end, I only drive the SC when the weather is good. I try not to drive it in the rain and I've never driven it in the snow. To date, my SC has just over 12,000 miles on it. I keep it covered in my garage and I lavish the best of care that I can give it. It is for this reason that my wife gets jealous of the car and my son thinks I'm crazy. But wait. My story doesn't end here.

Two years after buying my SC, I got the urge to modify it for better performance. There wasn't much out there to make my SC go faster but I kept looking. I soon started reading the TIX newsletters,

looking for advice on how to modify my SC. Shortly thereafter, I met up with Bill Evanoff and the illustrious Bill Hull. I quickly joined the SCCoA and I have been a member ever since (Member # 37). I learned a lot from Bill Hull and I have improved my car a bit over the years.

I haven't made a lot of modifications due only to a lack of time so I can care for the needs of my family and give attention to my ministry (Yes, it IS possible to be a minister of God and still be a car nut). Also, being an engineer, I don't necessarily believe all the claims I hear, even from the great Mr. Hull. I've made my modifications slowly, testing them to see if they would improve the car as claimed. Still, I hope to one day have my car as radically modified as some of my fellow SCCoA members while keeping it relatively stock looking (See my membership page on the SCCoA website for a list of my planned modifications).

So far, I've made the following modifications:

1) Opened up the exhaust by ditching the resonator and installing Dynomax Super Turbo mufflers.
2) K&N panel air filter.
3) Removed the air inlet resonator.
4) Installed 3.27 rear gears.
5) Synthetic oil (Mobil 1, 0W-30).
6) SCPI ¾" raised blower top.

In all these changes were worth about 30 rear wheel horsepower (From 184 RWHP, stock, to 214 RWHP). I tested my modifications on a Dynojet chassis dynamometer. I did this for two reasons: 1) I can't get to a drag strip very often (plus I don't like beating on my car too much) and 2) The results are much more consistent than if I were to drive at the track. My launch technique isn't too good (Lousy, actually, with lots of wheel spin). Hopefully, I'll get better as I get more practice in this area.

One good thing about working at Ford is that I have access to information that that wouldn't otherwise be available (I now do development engineering for future 4.6L 2V car engines). It especially helps when you know the people who actually did the work on developing the SC engine. You can bet that over the years I've picked their brains looking for ideas. Hopefully, I'll be able to apply some of those ideas in my future modifications. As I make those modifications, I'll document the performance gains and I'll share those results with anyone who wants to know.

That's all I have for now. 'Till next time, Peace.

Humble yourselves therefore under the mighty hand of God, that he may exalt you in due time: Casting all your care upon him; for he careth for you. Be sober, be vigilant; because your adversary the devil, as a roaring lion, walketh about, seeking whom he may devour.
I Peter 5:6-8

Give your troubles over to Jesus...He will be up all night anyway
Heard on the radio...WAKW in Cincinnati

Mustang Bolt Pattern Changeover - 13” Cobra Brake Installation

By George Davenport

This article will describe how to change your Thunderbird SC bolt pattern from 4.25” over to the Mustang 4.5” bolt pattern to allow installation of the Mustang Cobra “R” or other 4.5” bolt circle rims. It also contains information on how to install the larger 13” front Cobra brakes on your SC. You can do the rim install without the brake upgrade, but not vice versa. The 13” Cobra rotors and larger dual piston calipers will not clear 16” wheels and require a 17” rim.

There are now also a lot of choices of 17” rims with the SC 4.25” standard bolt pattern, even Cobra “R” look-alikes in 7", and 9" widths. The 9” wide rim is pushing the limits of what will fit under your SC wheelwell. The Cobra “R” rim comes with a backspacing of 6.42” and is a full fit on the front with 245/45/17 tires. Sizes up to 275 can be fit in the rear. An 8.5” rim is probably the easiest fit of the wider rims. ROH makes several just for the 4.25" and the 4.5” bolt patterns. You now even have the 8” option from Ford in the new ’98-up Mustang Cobra rims. They are 17”x8” and look very similar to the Cobra “R” wheels.

The point to that preceding paragraph is that you have more choices each day. Keep your eyes open and pick options that suite your personal tastes and budgets. That is what our sport is all about. This is just a guide to get you moving in the direction that you want to go.

‘Nuff said! Make friends with a good local machine shop and read on.

Parts List:

Description	Ford #	Price $	Qty	Total $
KVR Rotor	KVR Slotted (R) KVR Slotted (L)	100.00 100.00	1 1	200.00
Cobra Rotor	F4ZZ-1125-B F4ZZ-1125-C	76.50 76.50	1 1	153.00
Cobra Caliper	F4ZZ-2B120-A F4ZZ-2B121-A	190.00 190.00	1 1	380.00
Cobra Caliper bracket	F4ZZ-2B292-A F4ZZ-2B293-A	43.00 43.00	2	86.00
Front Brake Pads	Carbon Metallic	60.00	1	60.00
Cobra Front Hub	F6ZZ-1104-AA	60.00	2	120.00
Cobra Front Hub Retaining Nut	F3LY-3B447-A	5.50	2	11.00
Cobra Hub Dust Cover	F3DZ-1N135-A	4.00	2	8.00
Cobra Caliper Banjo Bolts	385116-S2 3/8” x 24 x 1” (Two in package)	12.00	1	12.00

Bracket Bolt, lock washer	Grade 8 12mm x 40mm	3.00	4	12.00
SC Sway Bar Link	F3LY-5K484-A	38.00	2	76.00
SC Front Spindles ('93-up MN12 with ABS mount)	Salvage Yard	100.00	2	200.00
Lug nuts	McGard #64000 ½" x 20 RH Pack of 4	8.00	4	32.00
Locking Lugs	McGard #24138 ½" x 20 RH Pack of 4	24.00	1	24.00
Chrome Valve Stems	Pack of 4	7.00	1	7.00
Cobra Rims (Cobra center cap included)	M-1007-M179	250.00	4	1,000.00
Tires	Goodyear Eagle GS-C 245/45/17	158.00	4	632.00
Wheel Studs	Dorman Part#610-368 ½"-20 x 1 31/32"	2.50	10	25.00
SC Rear Hubs	F3SZ-1109-A	75.00	2	150.00
SC Rear Bearing	E9DZ-1215-A	45.00	2	90.00
SC Rear Rotors	KVR Slotted	65.00	2	130.00
SC Rear Pad Set	Organic pads	25.00	1	25.00
SC Rear Hub Retaining Nut	F3LY-3B447-A	5.50	2	11.00
Cobra Aluminum Spare Rim	F4ZZ-1K007-C	280.00	1	280.00
Spare Tire	Goodyear T155/70R17	150.00	1	150.00
Lug wrench (for new size lugs)		15.00	1	15.00
Rear Hub Ring	Machine Shop	20.00	2	40.00
Re-drill and install studs in rear hubs	Machine Shop	30.00	2	60.00
Install bearing and hubs in rear knuckles	Machine Shop	20.00	2	40.00
Re-drill rear SC rotors for 4.5" bolt pattern	Machine Shop	20.00	2	40.00

Details:

The parts list attempts to list everything you could possibly use. Your installation (and costs) will vary. If you can find "take-off" parts from a '94-'98 Mustang Cobra for the calipers, brackets and spare, you could save a lot!

I had the rear hub ring machined since the Cobra wheels have a larger center hole

than the SC wheels. This little doughnut-like ring slipped over the SC rear hub after the rotor was installed and attached with a setscrew. This allowed the hub to still center the wheel instead of relying on the wheel studs.

The ABS exciter ring on the front hubs I purchased needed to be pressed down flush with the back face of the Mustang hubs. This may not be the case on all hubs, but if it is not flush with the rear of the hub, the exciter ring will not pass over the ABS sensor in the front spindles.

SC caliper banjo bolts are 10mm metric with a 1.50 thread while the Cobra's are 3/8" standard, national fine thread. These bolts are very close in size and the old SC ones almost fit. **Do not force them in**, get the correct bolts!!!

Stock SC brake lines work fine, but the passenger side had to be notched to fit the caliper.

New rear hubs are not required, but allowed me to get all of the parts ready before I took the car off the road. New wheel bearings are not required, but are probably needed on most cars anyway.

The Cobra spare tire fits in the trunk but is about 1" taller than the spare tire well. A regular Mustang spare will not clear the front calipers. If you use the same size tire front and rear, you could use a Mustang spare on the rear and move a rear tire to the front, if you have a flat on the front tires.

Procedure:

If you have a '93-'95 SC this first step will not be necessary. For the older cars, the front spindles must be changed to add the Cobra (or most aftermarket) calipers and 13" rotors. The reason for the spindle change is that the mounting of the caliper is a lot different on the older spindles. Part of the spindle actually sticks out over the rotor on the old spindles and guides the pads. This will not allow for larger rotors. On the newer spindles, the calipers mount on a caliper bracket that attaches to the spindle.

Jack up the car; support it on good jackstands. Remove wheel, caliper and rotor. After removing the small bolt that attaches it to the spindle, the ABS sensor can be carefully driven out with a piece of conduit or a socket. Next, you will have to remove the tie rod, sway bar link and then the upper and lower ball joints to remove the old spindle. Now is a good time to replace any worn suspension parts. Install the new spindle and attach the old sway bar with the new link.

The big surprise is that the Cobra hub just bolts right on to the Thunderbird spindle. I like to use new hub nuts and prefer the Cobra hub nuts, since the washer is larger and better covers the bearings. Tighten down to 250 ft/lbs of torque. A new bearing cap is required for the larger hubs. Put on the new 13" rotors. Watch out, they have internal vanes for cooling and do come in a left and right side. Install the caliper bracket, brake pads and caliper. Torque to specs. Re-attach the brake line with the proper banjo bolt.

Around at the rear, support the car on jackstands; remove tire, caliper and rotor. There are three bolts that hold the rear knuckle to the car. Be sure and mark the location of the eccentric washer in the rear, so you can get the rear toe back to its approximate starting point. Keep pressure on the lower arm as you remove the upper bolt. Let this assembly swing

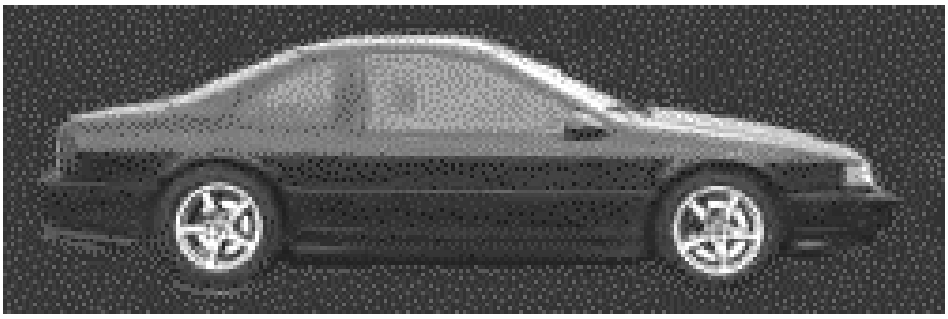
down after removing the upper bolt and the half-shaft. Then remove the two lower bolts. Take the whole knuckle to the machine shop to have the hub pressed out the front. Press out all of the old studs, and then re-drill for the new 4.5" bolt circle and install new studs. If needed, have new bearings installed at this time. Press the hub back into the knuckle. Also have your old (or new) rear rotors redrilled to the 4.5" bolt pattern at this time. Install the knuckle back on the car. Add rotors, caliper bracket, brake pads and calipers. Bleed the brake system. Have the alignment checked. Now, enjoy your new shorter stopping distances and fantastic looking wheels. You will notice a big difference in braking power.

I am now working on an adapter for the SC rear caliper to allow the Cobra 11.65" rear rotors to be used. The 10.125" SC rotors look like small pie plates behind the open 17" Cobra "R" rims!

Rotor Size Comparison:

Car	Front/Rear	Size
'89-95 SC Thunderbird	Front	10.875"
'89-'95 SC Thunderbird	Rear	10.125"
'94-'98 Cobra Mustang	Front	13.0"
'94-'98 Cobra Mustang	Rear	11.65"
'97 Mark VIII	Front	11.57"

George's computerized rendition of his new short wheel base SC currently under construction.



Brides' maids look on as Geoff Strange lights em' up on his wedding day...Turn the page for unique story

My Wedding Day

By Geoff Strang

My wife Lesley and I were happily joined in marriage on Saturday, October 17, 1998 near Grand Bend, Ontario. We wanted our wedding to be very special for both of us and we made efforts to accommodate each other. At my wifes request I had spent all of my free time that summer building wrought iron candle laberas, screens and archways to decorate the hall and church with. As a result I didn't have an oppourtunity that year to get to the track to try out my new mods on the SC. The photographer we wanted was Lesley's former modeling photographer and he hated doing weddings so we had to do something different for him to keep him interested. I thought it would be cool to line up the Limo and my SuperCoupe at the lights on the dragway. I felt it might symbolize the launch of a new life together. Our photographer thought it was a great idea and so did my wife. Our Limo driver happened to be a racer himself and had absolutely no problems with the request. The racing season had ended two weeks before but the staff of the Grand Bend Motorplex were more than happy to come out and open up the track for us. They even put the tree back up to make the pictures look more authentic.

The first pictures we took turned out the best. These were the ones with Lesley looking in at me while I'm performing a nasty burnout in the pit. After getting a couple of these, the rest of the bridesmaids joined Lesley for some additional pictures in the pit. Following this, my Groomsmen buddy from college joined me in the Bird and we brought the Limo and SC up to the line. The rest of the wedding party clamored in and about the Limo surrounding Lesley while my buddy and I leaned out the windows of the Bird for some pictures from up front. After these were completed I waited for everyone to clear, turned to my buddy and said "Well, it would be a shame to come all this way and not make a pass eh?", so we did. When we pulled back around after making our run I gave the SC to my best man and climbed into the Limo

with Lesley. Well, I guess the itch to race must have been infectious that day because no sooner did we get settled into the Limo than I found myself going for another pass down the track. When we reached the end of the track and turned around, there, racing down the track behind us was every vehicle in the wedding party including the Caravan with all of the girls (any guesses what that might have run?) and my SC again. Memories of that day will last a lifetime for Lesley and I. She constantly encourages me even now to work on the SC to make it better/faster. She says it is important for me to always have a toy. Financially I'm not a wealthy man but I still consider myself very rich. Not many men can say they got the Girl AND the Car of their dreams.

SO YOU WANT TO GO RACING, HUH?

by Mike Puckett

Those of us who race our SC's have discovered one basic fact; it's expensive. Whether someone races frequently or occasionally, it costs money to be at all competitive. I could have bought another Super Coupe with what I've spent over the last few years. It has been loads of fun but I can hardly justify the cost. It would be nice if there was an alternative.

Well, there is. It may not be quite as much fun, but at least when you crash no one has to go to the hospital. And if you blow up, just restart. I'm speaking of course, of computer racing simulations, specifically NASCAR Racing which just went to edition 3. All three editions allow us to race Thunderbirds and via the Paintshop it can be made to look like a Super Coupe very easily. The dash though, is the generic NASCAR style instrumented dash with roll bars. Even NASCAR 3, which uses the Taurus body, can be altered via the Paintshop to resemble a Super Coupe. And, there are hundreds of drivers and car bodies available online. Virtually every driver is available as an opponent, even many of the drivers from NASCAR's early years.

The original NASCAR racing, NASCAR 2, and NASCAR1999 can now be purchased for $9.99 to $14.99 with the latest editions NASCAR 3 and NASCAR Legends usually going for around $40. All five editions can be raced online against real people instead of just the computer and the games artificial intelligence. Plus, with the adjustable skill levels the difficulty can be scaled to match your abilities. A steering wheel and pedal setup runs from $50 to $150 for a force feedback wheel that's supported by NASCAR 3. A video card that supports 3dfx and Direct3D modes make the graphics appear very detailed and a Soundblaster Live Value sound card makes for awesome 4D audio effects. Speaking of the computer, the faster the processor and the more the ram and especially video ram, the smoother and faster the game flows. You can put lots of money into a computer but, when it crashes it doesn't have go to the body shop or jack your insurance rates up. Just reboot.

The tracks are all very accurate in each edition and are modeled after photographs and on site visits to each track. All NASCAR Winston Cup and Grand National tracks are available except for Daytona whose rights are owned by Sega and will not be made available anytime soon. Virtually all of the drivers from both divisions are available as opponents, some in more than one car. Several of the regular NASCAR drivers play the game with the most notable being Bobby Labonte. One rookie Grand National driver even drove one of the tracks in the

game before ever stepping foot at the actual race track and was amazed at how accurate the game was. He felt right at home on his first time out. Be forewarned though, This is not an easy game to play. It takes lots of practice.

All editions of the game play similarly with NASCAR 3 being the most stable and easy to drive. There is plenty of online help from the manufacturer Sierra/Papyrus and at two other web sites: theuspits.com and theuspits/iwccars.com. Utilities, patches, decals for the paintshop, race setups, car sets and individual cars and drivers are available for downloading. Links to online racing and racing leagues can be found there as well. Online racing comes at all levels from beginner to expert. So far I have not tried online racing because I have a bad tendency to spin out other cars when I pass them and I'm not sure that would be appreciated. When I finally get a cable modem later this century I think I will give it a shot, though.

I've been playing NASCAR Racing for about five years now and have gotten pretty good at it. I'm right on the track records at a couple of places and run my opponents at 99%. This way I'm competitive and can usually run up front somewhere. When I win too easily I either up the percentage or tweak the settings in the track file to slightly increase opponent strength. I still tend to crash a lot but with 'damage' turned off it is easy to get going again. I don't like wrecking T-Birds, so I used to run with damage turned off. Now that NASCAR 3 has changed the cars to the Taurus style I don't mind wrecking it so I've turned the damage on. If I can learn to keep from wrecking maybe I'll switched it back out for a T-Bird again. Winning all the time is boring so it is better adjust opponent strength so that you're not the fastest car on the track. You will get better as you practice. I usually race from 30 lappers to 100 lappers, too many laps and vertigo sets in. I have run a couple of full 500-mile races for almost four hours and found it to be a rather strenuous mental exercise. As with the real thing, a moment's inattention or distraction and you're in the wall. It gave me a new appreciation of what a real racer goes through during a 500 mile, four hour event. Passing other cars is perhaps the most difficult thing to master. I tend to pass on the low side of the track and frequently I'll stay on the gas a bit too long and drift right into their left rear spinning them into the corner wall. As in the real thing you get sucked right into the other car when you get too close. Running in a tight draft lap after lap without crashing is also very difficult. Just a bit too over anxious and you'll tap the car in front and lose control momentarily. The most common announcement made by my spotter is "there is a mess on the back stretch". It's a good thing the computer can't throw its helmet at me.

There are three different views of the action: in car, above and behind, and further back. I started with 'in car' but the limited view to the right made crashing more frequent. The arcade views give a better perspective and viewing angle of the opponents and I've switched to the further back position. It's really neat seeing and racing with real drivers that you can identify with. There are several levels of spotter commentary but I'd just as soon he keep quiet. The chassis is adjustable and tweaking the setups can help increase speeds and benefit handling. With or without caution flags or pit stops it can be made virtually as real as the real thing. As I said earlier, it's not quite the same but all things considered, racing fender to fender in the game makes for a very enjoyable, economical, and safe racing experience. Well, it's time to go put the 3 car in the wall again. See ya on the high banks.

Multiple and Simple Regression Analysis for 3.8L S/C XR7 and SCs

by Ron DiPaola - dipaola@us.ibm.com

Summary Data

A	B	C	D	E	F	G	H	I	J	K	L
	60	**330**					**1/4 mile**	**1/4 mile**	**1/8 mile**	**1/8 mile**	**1/8 mile Simple**
Name	**Foot**	**Foot**	**1/8 time**	**1/8 MPH**	**1/4 MPH**	**1/4 time**	**Equation**	**Difference**	**Equation**	**Difference**	**Regression**
Carroll	2.217	6.398	9.866	71.23	89.02	15.398	15.3689	0.0291	15.3712	0.0268	15.2918
Cunningham	2.112	6.231	9.664	71.77	89.64	15.15	15.1265	0.0235	15.1274	0.0226	14.9915
Dimitratos	2.235	5.982	9.028	78.91	102.55	13.865	13.8896	0.0246	13.9026	0.0376	14.0459
DiPaola	2.415	6.622	10.073	72.09	89.96	15.495	15.5253	0.0303	15.524	0.029	15.5995
DiPaola	2.316	6.461	9.867	72.8	91.09	15.228	15.2626	0.0346	15.262	0.034	15.2933
DiPaola	2.197	6.195	9.441	76.79	93.17	14.646	14.6218	0.0242	14.586	0.06	14.6599
Evanoff	2.159	6.253	9.617	73.41	92.4	14.925	14.9633	0.0383	14.9683	0.0433	14.9216
Evanoff	2.248	6.555	10.03	70.74	89.21	15.568	15.5564	0.0116	15.5626	0.0054	15.5356
Evanoff	2.282	6.523	9.991	70.77	89.54	15.515	15.4979	0.0171	15.5063	0.0087	15.4776
Evanoff	2.193	6.271	9.658	73.17	92.03	14.996	15.0244	0.0284	15.032	0.036	14.9826
Evanoff	2.226	6.537	9.987	71.92	90.27	15.45	15.4646	0.0146	15.4704	0.0204	15.4717
Evanoff	2.142	6.458	9.892	72.59	91.59	15.306	15.338	0.032	15.3532	0.0472	15.3304
Filby	1.965	5.68	8.796	78.99	100.29	13.727	13.7486	0.0216	13.7603	0.0333	13.701
Frisbee	2.02	5.42	8.16	89.9	114.69	12.48	12.4462	0.0338	12.4695	0.0105	12.7555
Griffith	2.219	6.063	9.285	76.57	96.63	14.368	14.3929	0.0249	14.3949	0.0269	14.428
Ing	1.823	5.331	8.314	84.56	102.69	13.025	13.0335	0.0085	13.0134	0.0116	12.9845
Jamison	1.867	5.621	8.843	74.47	94.49	14.025	14.0304	0.0054	14.0294	0.0044	13.7709
Joseph	2.066	5.965	9.16	76.14	96.03	14.301	14.282	0.019	14.275	0.026	14.2422
Klein	2.221	6.366	9.757	72.52	90.82	15.17	15.1577	0.0123	15.1539	0.0161	15.1297
Kreisz	2.166	6.098	9.364	75.28	94.34	14.59	14.5667	0.0233	14.5605	0.0295	14.5455
Markman	2.165	6.135	9.481	73.18	92.16	14.814	14.807	0.007	14.8077	0.0063	14.7194
Maroschak	2.285	6.474	9.907	71.57	89.16	15.417	15.3735	0.0435	15.3644	0.0526	15.3527
Miller	2.076	6.074	9.381	74.8	94.78	14.667	14.6301	0.0369	14.6438	0.0232	14.5707
Miller	2.112	6.142	9.482	73.9	93.25	14.835	14.7891	0.0459	14.7972	0.0378	14.7209
Miller	2.197	5.963	9.176	76.08	96.62	14.291	14.2792	0.0118	14.2834	0.0076	14.266
Puckett	2.31	6.356	9.628	76.01	96.16	14.797	14.8024	0.0054	14.8096	0.0126	14.938
Seegers	2.186	6.282	9.619	73.89	92.78	14.916	14.9316	0.0156	14.9305	0.0145	14.9246
Schlabach	2.1	6.056	9.192	78.4	97.42	14.201	14.2202	0.0192	14.1992	0.0018	14.2898
Schlabach	2.362	6.396	9.576	77.5	97.6	14.635	14.6375	0.0025	14.6276	0.0074	14.8606
White	2.216	6.182	9.499	74.27	92.24	14.737	14.78	0.043	14.7666	0.0296	14.7462
White	2.391	6.471	9.777	74.26	93.94	15.05	15.0301	0.0199	15.0276	0.0224	15.1595
Williams	2.151	6.011	9.142	78.53	99.4	14.142	14.1261	0.0159	14.1268	0.0152	14.2154
Williams	2.111	5.899	8.971	79.66	100.84	13.875	13.8717	0.0033	13.8695	0.0055	13.9612
Wodzisz	1.894	5.559	8.642	79.56	100.15	13.55	13.5628	0.0128	13.5635	0.0135	13.4721
Wodzisz	1.866	5.53	8.602	79.8	99.9	13.51	13.5159	0.0059	13.51	0	13.4126
Wodsisz	1.857	5.405	8.389	82.55	104.14	13.123	13.13	0.007	13.1372	0.0142	13.096
Wodisz	1.871	5.539	8.595	80.14	100.7	13.479	13.4824	0.0034	13.4795	0.0005	13.4022

Simple Regression Analysis:

Variable	**r square**
60 foot	0.59
330 foot	0.92
1/8 time	0.98
1/8 MPH	0.91
1/4 MPH	0.89

Explanation of columns h through l

Column H uses the 1/4 mile equation (see next page) to estimate the 1/4 mile time.
Column I shows the difference beween actual (column G) and estimated (column H).
Column J uses the 1/8 mile equation (see next page) to estimate the 1/4 mile time.
Column K shows the difference beween actual (column G) and estimated (column J).
Column L uses the simple regression equation for 1/8 mile time **only** (see next page) to estimate 1/4 mile time.
* Differences is absolute value and estimated times are rounded

r square shows how correlated the variable is to the 1/4 mile time.

Multiple and Simple Regression Analysis for 3.8L S/C XR7 and SCs

by Ron DiPaola - dipaola@us.ibm.com

Examples

1/4 Mile Equation using 60 ft, 330 ft, 1/8 time, 1/8 mph and 1/4 mph:

(5.102463+(1/8 time * 1.695025)) - ((60 ft * .192406)+ (330 ft * .579766)+(1/8 mph * .017859)+(1/4 mph * .011780))

Carroll:

(5.102463+(9.866*1.695025))-((2.217*.192406)+(6.398*.579766)+(71.23*.017859)+(89.02*.011780)

(5.102463+16.723116)-((.426564)+(3.709342)+(1.272096)+(1.048655))

(21.825579) - (6.456657)

15.368922

1/4 Mile Equation using 60 ft, 330 ft, 1/8 time, 1/8 mph (those at 1/8 mile tracks):

(3.671449+(1/8 time * 1.960463)) - (60 ft * .199244) + (330 ft * .862903) + (1/8 mph * .023580))

Filby:

(3.671449+(8.796*1.960463))-(1.965*.199244)+(5.68*.862903)+(78.99*.023580))

(3.671449+(17.2442))-((.3915)+(4.9012)+(1.8625))

(20.9156)-(7.1552)

13.7604

* These calculations are only useful for 3.8 supercharged Cougar XR7s and Thunderbird SCs.

**Calculations above and on page 1 may be slightly off due to rounding.

1/4 Mile Equation using *only* 1/8 mile time:

(1.486671*1/8 time)+0.624284

Miller:

(1.486671*9.381)+.6424284

13.9464+.642484

14.5889

This analysis was performed to examine the relationship between time and MPH variables and 1/4 mile time. This analysis can be used by anyone to makes estimates on what their XR7 or SC will run. It is useful for those SCCoA members who can only get to 1/8 mile tracks and wonder what their car would run in 1/4 mile. It is also useful for those who have made great runs, only to have the timing system fail. In my experience this only happens when you have just made your best run :) It can also be used to settle the age old debate on which **one** factor influences your 1/4 mile the most (see r-square values on first page). What needs to be taken into consideration is the fact that 1/8 mile time is a function of 60ft and 330ft time, so if one has a terrific 60ft time, they are bound to have a great 1/8 mile time. It can also mean that if one has poor launches but can make up the difference, they will be in good shape for a good 1/4 mile time.

The data was collected from timeslips submitted from SCCoA members to me and the regression was done using Microsoft Excel 97.

I am not a mathematician, and this analysis is open to interpretation. If you need help understanding the calculations, please let me know via email.

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9995
R Square	0.999
Adjusted R Sc	0.9989
Standard Erro	0.026
Observations	37

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	5	22.07	4.414038	6518.58	7.38E-46
Residual	31	0.021	0.000677		
Total	36	22.091			

	Coefficien	*ndard Er*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*ower 95.0%*	*Upper 95.0%*
Intercept	5.1025	1.0151	5.026642	2E-05	3.032185	7.172742	3.0321847	7.17274154
X Variable 1	-0.192	0.099	-1.94256	0.0612	-0.39442	0.009603	-0.394415	0.00960265
X Variable 2	-0.58	0.2422	-2.39384	0.02291	-1.07372	-0.08581	-1.073718	-0.0858137
X Variable 3	1.695	0.1965	8.625788	9.7E-10	1.294247	2.095804	1.2942473	2.09580414
X Variable 4	-0.018	0.0059	-3.02389	0.00498	-0.0299	-0.00581	-0.029904	-0.0058137
X Variable 5	-0.012	0.0047	-2.53169	0.01664	-0.02127	-0.00229	-0.021271	-0.0022902

Many of you likely know who Paul Cornell is, but for those who do not, here is some background on him and the Thunderbird Information Exchange (TIX).

In 1992 Paul began a newsletter for MN12 Thunderbird enthusiasts called TIX. The format was designed to put MN12 owners together to mutually benefit from the sharing of information about how to increase the performance and enhance the pride of ownership of the MN12 Thunderbird. Most interest centered on the Super Coupe.

Paul published 12 issues (over 400 pages) which contained and chronicled the enthusiasm for the MN12 over the 1989 to 1997 period. TIX never aspired to a club status, but encouraged TIX readers to join together in the formation of a group to serve the MN12 owners needs. Paul promotes the Super Coupe Club of America today as the place for SC owners to share their enthusiasm.

TIX has a listing of the topics covered in the TIX newsletters available for the asking. Call Paul and he will send you a copy if you are interested.

Lincoln **T**echnical **I**nformation E**X**change

8421 EAST CORTEZ ST. SCOTTSDALE AZ 85260
480 / 948 – 3996
Paul Cornell, Editor

Dear Bill,
I very much enjoyed the Dec. '99 edition of the Chargin' Thunder newsletter and especially the article on the MN12 braking system. My 1991 red Thunderbird Sport with an "enhanced" 5.0L HO has about 80K miles on it and will remain my daily driver for the foreseeable future. I also need a 4-door sedan and want the technology features of my MN12 in a sport sedan configuration and about a 114" wheelbase.

My research time has turned to the information I can find which will make the "Son of MN12" - DEW98" a high performance sedan. I am sorry to report the news is not good. The bastard 3.9L V8 with a meager 252 HP on the Lincoln LS has no performance parts or potential on the radar. The Jaguar S-Type version is barely better (290? HP) and no aftermarket parts are available. The British magazines have spy photos of a supercharged S-Type test mule, but no "unofficial" (which is the best kind) comments have surfaced from the usual well-informed sources. Worse than that, a motorhead within the LM management organization sadly acknowledges that the prospects for a performance engine in the LS are technically infeasible and has zero momentum internally at Lincoln

You will remember than my philosophy is "KISS". What the LS would have to offer to make it a potential buy for me would be the 5.4L Lightening motor (360 HP & 440 lb-ft @ 3000 rpm). Also changing the block from cast iron to aluminum would be a big benefit.

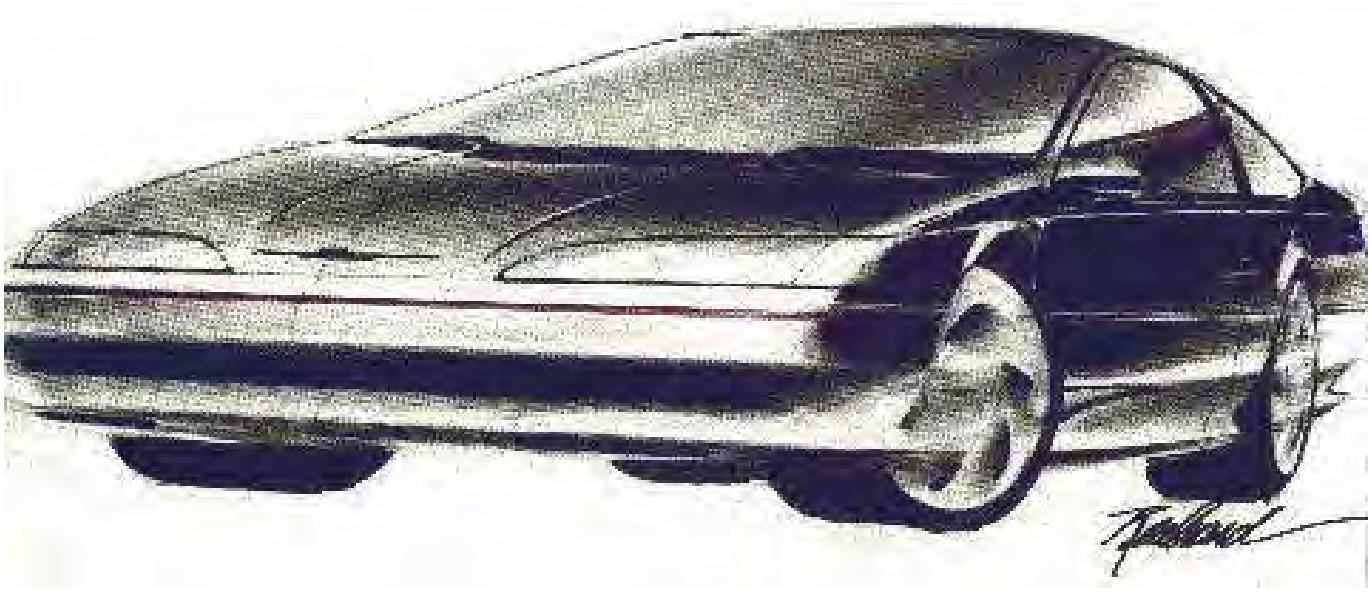
Our MN12 pioneered IRS, rack & pinion, SLA suspension, along with a V8 driving the rear wheels at Ford. The S-Type and LS (DEW98) have this stuff (as well as the same wheel bolt pattern) as do our MN12's.

Keep up the excellent CT publication. You are doing a great job of "Keeping the faith" (as John Coletti puts it) for the faithful MN12 owners who, like me, love this car! I'll keep the L TIX watch, but a 1997 BMW 740i (35000 MI / $35000) is looking like a combination FOMOCO has to compete with for my performance sedan choice and there is a Dinan supercharger kit in the works for it.

TIX UPDATE: ANY OF THE 12 ISSUES ARE AVAILABLE AT $10 EACH.

Should any CT subscribers want any edition of the TIX newsletters to fill out their collection, I will offer a 2 for $10 deal. This will enable me to consolidate their orders for a bulk discount at the copy center. Call for details if you are interested. In case it missed your attention, TIX Volume 12 was exclusively dedicated to the wonderful, OEM quality kit that uses the SC Eaton supercharger and applies it to the 4.6L V8 as installed in the MN12 Tbird. Allen Engine Development developed the kit. (Oxnard, CA) 805-988-8855. "The best MN12 ride TIX has ever had"!

"There are only two tragedies in life: one is not getting what one wants, and the other is getting it. " - Oscar Wilde (1854-1900)



Artists sketch of a prototype ’89 Thunderbird

This sketch and the front cover art are compliments of Pat DiPersia

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Karate is a form of martial arts in which people who have had years and years of training can, using only their hands and feet, make some of the worst movies in the history of the world.

Dave Barry