

CHARGIN' THUNDER

Super Coupe Club of America

Volume VII

September 2002



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

Behold, how good and how pleasant it is for brethren to dwell together in unity! Psalm 133:1

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Super Coupe Club of America

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Changes of Address

Address changes MUST be submitted in writing by the 25th 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 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, which the US Post Office DOES NOT forward to a member's new address. Because of this fact it is vitally important for all members to keep the club updated regarding address changes.

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 US 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 "car" or "used parts" ads 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 the club at 513-697-6501

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John Nolan Ford is offering SCCoA members Ford original equipment replacement parts at **"wholesale" pricing** (+ shipping). **Contact Parts Manager Ron or Bob at 1-800-837-8114** and simply tell him you are a Super Coupe Club of America member.

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From The Bird's Nest

By Patty Evanoff

It's time for a family chat. I have often told my husband that he is too quiet about all the things he does as coordinator and chief of the Super Coupe Club of America. So, I've compiled a list of some of the many things he does for the benefit of our great club.

Bill's biggest responsibility is the production of the Chargin Thunder newsletter. Bill has authored many of the articles himself throughout the years. However, we are sure that the readers appreciate reading articles written from a variety of sources. Thus, Bill tries hard to recruit members to contribute their expertise. The first step is to encourage members to write articles for the Chargin Thunder. This may take up to a year of first planting the idea, then conversing with, advising, and convincing the person to write the article. Then follow-up is required to make sure the articles reach us early enough so that they can get into the Chargin Thunder on time.

Once the articles and pictures are sent to us, Bill literally spends DAYS on the computer editing, retyping, and formatting the articles to get them ready for printing.

When the articles are compiled, many trips are spent going back and forth to the printing shop. Printing issues have caused bad batches of newsletters at times, which require reprinting.

Also, numerous trips have been made to office supply stores to purchase the supplies we need to do the mailings.

Much time and effort has been devoted to finding a reliable printing source. We have switched printers twice. Once because the shop closed down, and once because it was too expensive. We wanted to produce a

quality product at a fair price so that we wouldn't have to raise the annual membership dues. Our latest printer does a great job, although they can be very slow at getting the newsletters finished on time, thus delaying our mailings.

Once we have picked up the newsletters from the printer, the party begins. We have recruited our kids and their grandparents to participate in what we call a "Stuffing Party". Actually, the process takes about three days. We stuff envelopes with newsletters and fliers, seal them, stamp them, and put return addresses on them. It also takes time to print the address labels, making sure that all address changes have been made and new members are included. Once the labels are prepared, we place them onto the envelopes. When completed, I then sort them into zip code ranges according to the Post Office guidelines for bulk mailing (I took a course at the Post Office to learn how to do bulk mailings).

The envelopes then have to be double rubberbanded into groups of ten. Then the stacks of ten have to be labeled, as well as the mailing sacks that they are then placed into. An additional step is that envelopes addressed to out-of-country destinations are set aside, as they cannot be shipped by bulk mail. At the post office, a bulk mailing form has to be filled out and a supervisor has to process the mailing. Unfortunately there is only one postal worker at the post office who is trained to process bulk mail. I usually call first to make sure he is there before we leave, as I have learned the hard way of the hassle it is to try to explain to the postal workers what they are suppose to do to process the mailing. When done correctly, we have usually spent an hour at the post office processing the mailing, which usually concludes with a great big "WHEW"!

Another responsibility as coordinator is record keeping. Bill and I have spent hours on the computer keeping records of names, member

numbers, addresses, phone numbers and e-mail addresses of our members. Also, accounting records are kept for tax purposes.

As new members join throughout the year, their information is recorded and "new member packets" and newsletters are sent out weekly.

Club T-shirts must be ordered periodically throughout the year from a screen printer. Orders for T-shirts and club vehicle decals are processed and shipped regularly.

Another thing that Bill does as coordinator of the SCCOA is to provide members with the benefit of his expertise. He literally spends hours **EVERY DAY** talking to "ya'll" on the phone. I often have to remind him that hey, you have a wife and two kids, remember us? The only way I can talk to him without being interrupted is to get him out of the house. And even then he brings the darn cell phone with him!!! Grrrrrr. He gets "the look" from me every time the phone rings during supper and he says, "Can I get that?" I know that Bill enjoys talking to you guys. He gives advice and encouragement and has helped innumerable people with their questions. I don't know too many people willing to devote that much time doing that.

Another activity that Bill does for the club is the SCCOA web site. It has evolved through the years and has turned into a hugely popular site. The web site has helped many people and has been a source of enjoyment for thousands. It's what links us all together. Questions are asked and answered, and complaints are voiced and heard. Many hours have been spent developing and maintaining the site. Many thanks go to our webmaster, Ron DiPaola, for keeping the site updated. Also many thanks go to our moderators whose job is to delete inappropriate listings.

Another activity that keeps Bill busy is Organizing SCCoA events. He coordinates

with the hotels at several of the large events annually. At Carlisle, for instance, the club is now staying at two adjacent hotels and group reservations are made at each. Promotional material is also gathered and put into the CT ahead of time so members can plan to attend upcoming shows.

During the past 7 years since the club was formed, our annual dues has stayed at \$40, despite increases in expenses. We have tried to keep our dues affordable to all. For those of you who are wondering what your membership dues are used for, I have compiled a list of most of our expenses.

- Printing Costs
- Mailing Expenses
- Bulk Mailing Permits
- Chargin' Thunder Envelopes
- Office Supplies
- Advertising
- Membership Cards
- SCCoA Car Decals
- SCCoA Business Cards
- Flyers
- Reprinting of Back Issues
- Credit Card Processing Charges & Fees
- Business Start-up Costs
- Fax Costs
- Club Events / Car Shows
- SCCoA Sponsorship for National Show
- Web site Fees (which have increased 10 fold by-the-way in the past three years due to the sites popularity)
- Web site Equipment
- Phone Bills
- Web site domain registration costs
- Club banners, and many more miscellaneous expenses.

When Bill Hull first conceived the Super Coupe Club of America in 1996, he envisioned creating an organization of SC owners for the purpose of educating its members about the mechanics and maintenance of these cars. He also realized that distributing publications would cost

money. He wanted to eventually retire from painting and start his own business, thus, the idea of the Super Coupe Club of America was born. I remember fondly of our first "meet" in Carlisle PA when he had only 10 members. From the first day, the Super Coupe Club of America has been a business. Hull wanted to provide a service to fellow SC owners, as well as be compensated for his time and efforts. If the club had been run by volunteers, I guarantee that no one would have been willing to invest the massive amount of time and energy required to make this club what it is today.

In fact, Bill Hull soon tired of the enormous time commitment involved with running the SCCoA and desired to sell his business. In 1999, Bill and I purchased the business from him and we became the coordinators of the Super Coupe Club of America. The price we paid was equivalent to one year's earnings. So in essence, that first year and a half when we took it over, we ran it absolutely for free!!! Not to mention the 12 months that Bill volunteered as editor of the CT before we took it over completely. And yes, the SCCoA continues today to be a profit organization; a business that provides a service. For any of you who have the misconception that we are getting rich off the club, you are very much mistaken. We assure you that our profits are minimal when you consider all of the hours we put into the club. We have made only a few dollars an hour after taxes and expenses.

As of date, the SCCoA has 515 members. Many of you have commented to us that you appreciate the club being a "one stop shop". Members go to one place to register, get information and advice, and receive newsletters. The right hand knows what the left hand is doing. Having one club coordinator makes service to you simple and convenient.

Some of you have suggested that the club elect officers. In the past, we didn't see how this could have worked in our situation. The trouble with having officers is that being a national club, it would be hard to hold meetings and elections. Especially since most of the members do not know each other. Much of the feedback we get from our members is that they appreciate our running the club because it simplifies things.

A second reason for not having officers is that our club membership changes dramatically from year to year. Being older cars, these cars are bought and sold frequently and thus our membership changes. An officer may be committed to the club one month and then sell his car and be gone the next.

A third reason is that too many cooks in the kitchen create bad soup. I have heard about clubs whose members argue over the most trivial of things and nothing is accomplished without bad feelings. And besides, where is the "kitchen" anyway. Not everyone has a computer so having meetings via the Internet would not be fair to all members.

A fourth reason not to have officers is that many folks have good intentions but do not carry through with their assignments. Delegating responsibilities sounds good, but can everyone be counted upon to fulfill their duties in an expedient and reliable way? Also, being scattered all over the country makes it difficult to coordinate assignments.

A fifth reason is that with officers, rules and bylaws of the club would have to be created. We felt that most folks just want to have fun with the club and could care less about rules. Life is too short. Don't sweat the small stuff.

Finally, I conclude with a tribute to my husband Bill. He is a good man, a fine husband, and excellent father. He is devoted to God, family, country, and responsibilities. He has worked hard these past years as your club coordinator,

and has been utterly devoted to serving you in the best way he knows how. On behalf of

the Super Coupe Club of America, we give him our "Thanks!"

From The Birds Nest II

By Bill Evanoff

The SC community lost a valued member this month. Adam Mullen lost his fight with GHD, a bone disease, on 9/24/02. He had just celebrated his 19th birthday the previous day. On one of the T-Bird message boards, Fred Holzhauser best expressed everyone's thoughts on this tragic loss when he said the following:

"I would like to say a few words about Adam Mullen. Adam was a true enthusiast about his car, a Thunderbird Super Coupe. It was our shared enthusiasm for the vehicle that brought us together. Adam has had a profound effect on more people than most, at his age. If you were to follow the goings-on of any of the online base of Super Coupe enthusiasts, it would become apparent what a huge loss that community is experiencing, as is his family.

I find it interesting that a lot of his internet-based friends preface their remarks by, "I never met him personally." That is misleading. It was Adam's personality that came through loud and clear as he addressed the online Super Coupe community, by posting public messages, or using the e-mail medium, privately. It was my privilege to meet him personally, in Carlisle, PA. Thanks for coming, Adam!

Adam was not afraid to dream. Nor to think. Nor to learn. It has been my pleasure to have had many inspired and engaging discussions with him. He was a sponge for information. Finally, Adam faced his disease with courage and dignity. We all were very happy to provide him a diversion from it. I would have been proud, had he been my own son."

SCCoA Family Chat Continued:

Patty has given an excellent introduction to what I have to report and I thank her for the "bragging" she did for me. It's true that I'm a very low-key guy and I may not give myself sufficient credit for the hundreds of things I do as coordinator of this club. I do what needs doing and keep doing it all year long. I don't waste time bragging about it because frankly, most people simply don't care. They expect that things will get done, as they should.

In this editorial I'm going to update everyone on the current status of the club and give a projection of where I see the SCCoA going in the future.

Current Status:

First of all, the SCCoA today is what I would call a raging success story. Since becoming the SCCoA club coordinators in 1999, Patty and I have signed up nearly 800 new members to date. Our largest membership year was 2001 with over 600 members. This year the club is currently at 517 members, with more signing up every week. I fully expect to meet or exceed the 2001 membership numbers from last year if history holds true for the final quarter of 2002. These numbers to me are simply astounding when one considers that the car has been out of production since 1995. Is the SCCoA the BEST place for SC/XR7 owners to get printed information and coverage about their cars? Absolutely!

The Future:

Change is good, but everyone hates it. Anyone working at a large company has heard the "change is good" line before. In the business world if a company is not constantly changing and improving to meet its customers needs then it will likely go out of business. The same can be said for the SCCoA.

I am always hesitant to make changes to the club's status quo because things have been going well with the club since 1996. When I became the club's coordinator I saw no need to change virtually anything that Bill Hull had set in place. But, over the past year it has become evident that some major changes should take place and I would like to expound upon where I see the club going for 2003.

For starters, the club newsletter will be stopped after the December, 2002 issue. The main reason for this is that for some time, there has been a decline in the article submissions that I felt were pertinent to club members. Granted, there are still many interesting technical topics to discuss related to the SC/XR7, but as these cars have been out of production a long time, there really is not sufficient "new" information to support a 36 to 40 page newsletter every three months.

I know this will be a big disappointment for everyone, but as the CT editor I have been struggling to fill the CT every issue this year. I simply cannot continue the newsletters, in their current form and length, without a huge increase in willingness to contribute interesting technical articles on subjects that have not already been covered previously. Perhaps the CT will continue at some point in the future as an Internet based document. It may also reappear as an annual or semi-annual publication.

Without a newsletter, the major asset of club membership, I don't feel it is necessary to charge \$40 for club dues next year. What membership may cost is still up in the air but I envision that the club will become solely an Internet based entity. For SCCoA.com to continue there must be a source of revenue from the web site users to pay for the ongoing hosting fees that come with a site. Currently, the cost to operate the SCCoA site is slightly less than \$4,000 a year.

Where would the \$4K come from? That question is still under discussion but several ideas are that we would offer a "Members Only" section that will be password protected. To access this area would require a certain level of donation to the site "expense fund". Other means for meeting expenses would be simply to ask for donations from users. The site has several thousand people who visit regularly and if each were to only donate a few dollars annually, expenses would be easily met. Overall, how membership fees will be charged is still an open issue.

As a final change to the status quo, I will gradually be stepping aside as coordinator to make way for a few new individuals, or perhaps eventually an elected group of club officials. To start this process I have asked George Davenport if he would be willing to help bring about the changes I've suggested. George has been a respected club member for years and I doubt there is anyone in the SC community who has not drooled over his awesome short wheelbase SC. George has accepted my invitation and he will become the interim SCCoA coordinator starting January, 2003. I will assist George until a more formalized leadership team is established. When this will happen is up in the air but I will be stepping aside when the membership agrees upon who and how they would like to be governed. In essence, the SCCoA will no longer be privately owned, but will become as much a formalized club, with elected officials, by-laws, and such, as the members care to have. George is excited to volunteer for a period of time but he has also stated that he may or may not wish to assist with the ongoing operations of the club once it is reestablished.

The reasons for these major changes are multi-fold. For starters, I have been coordinating the club since 1999 and have been CT editor since 1998. At times, I feel

that I am getting burned out. New blood will likely invigorate the SCCoA to greater success.

Secondly, there are those who wish that the club was more like a club. Hence, they want elected officials, open accounting books, and more formalized rules and by-laws for the SCCoA. If the membership wishes for these changes, then I should step aside as the sole coordinator.

Finally, there are some individuals who do not think it is appropriate for someone who is a parts vendor in the SC community to also be the SCCoA's sole coordinator. From my personal experience this is not an issue with the vast majority of SC owners. I strive for impartiality and I have always attempted to keep the club and Super Coupe Performance separate entities. Other than an ad in the Chargin' Thunder, the two have virtually no other ties. Simply put, one does not have to be in the club to buy SCP parts, nor does one have to buy parts to join the SCCoA. Most SC owners appreciate a single source where they

can get accurate advice on their cars and purchase parts if they choose to. Despite these facts, there are those who adamantly object to me being the club coordinator simply because I also sell SC and XR7 aftermarket parts. I realize there is no way to please everyone, but this is another reason to step aside.

In conclusion, the time I have spent as the SCCoA coordinator has been a blast. The changes forthcoming may seem dramatic, and may be difficult to accomplish, but we all have to remember that this is, after all, simply a car club. Webster's states that a "Club" can be defined several ways but we are best described as "A group of people associated for a common purpose". No matter what changes, in form or leadership, the SCCoA may go through in the future, we will always share a common purpose...a passion for the Super Coupe and the supercharged Cougar XR7.

Vinyl Graphics

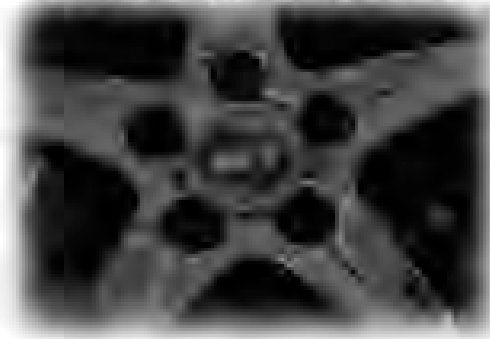
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Contact: Chuck Carroll tbirdsc@infinet.com or 419 797 4129 EST

Mustang Bullitt Gas Cap Installation How-To

By Al Macray



The Why

I am always looking for ways to modify something on my vehicles so they stand out from others. I had liked the looks of racing style gas caps since they first caught my attention in the '60s. That may be a little earlier than some of you can remember.

I had a '72 Mustang fastback and as soon as I could find one of the Mach 1 flip top gas caps in a junkyard (Sorry, I'm showing my age again. They are called auto parts recycling centers now) I got it and installed it on my Stang. When the Bullitt Mustangs came out, the racing style gas cap again impressed me. I kept looking at the fuel door on the regular Mustang and the T-Bird and

felt that it should be an easy swap. But having worked on Fords since the late '60's, I knew that Ford never makes any type of parts swap simple.

While at Carlisle last June, I took my tape measure and went around measuring the fuel door of late model Mustangs. Well, Ford did it again. There was almost a quarter of an inch between the diameter of the two fuel doors. The T-Bird door is almost 6.5 inches across and the Mustang is 6.25. With the Bullitt fuel doors going for \$100, I decided that I could spend that money on something better instead of possibly ruining the door trying to make it fit. Then I found a parts dealer that sold the doors for \$70. Since I

was also ordering some more Cobra wheels from them, I decided to give it a try.

Body Preparation

The first step is to remove the stock door. There are two screws inside the panel above and below the hinge. The screw heads are 7 mm. Once you remove the bolts the door assembly will come right out. The next step is to remove the two rubber bumpers in the door opening. You will not need these. Store them with the door and the other small parts so you can reinstall the original door later.



Next I removed the bolts that hold the plastic inner fender panel to the quarter panel. I replaced these with 4mm (M4-.7x20mm long) oval head phillips screws. This allows the new door assembly to fit tighter against the quarter panel opening. The next step is the hard part; you must cut back the slot at the front portion of the door opening. I used a small hacksaw at the top and bottom and rolled the center portion in. Test fit your new assembly until it fits into the center of the door opening. I had to cut back about a half inch. Make sure that you have a little room to twist the cap to allow adjustment. Clean up the cut with a file and touch up with paint to prevent rust. If you are going to use power tools be careful; remember the gas

cap is right there. It may take a little longer to do it by hand but it will be safer.

Bullitt Fuel Door Preparation

Take your new Bullitt fuel door and remove the two plastic "C" clips at the rear of the assembly. Don't lose the screws. You will need a torx T-20 driver. On the backside you will notice that the decorative short screws extend past the nuts. Grind these down until they are flush with the nuts. Remove the two long screws at the hinge side of the door. They are held in place with o-rings. Place the door into the opening and center it.

Next, mark the two holes where the two long screws were. You can use a felt tip pen or an automatic center punch. Drill out these two holes. I recommend you start with a 3/16" bit. You can drill it larger later if you need more adjustment. Now install the bottom of the two black plastic "C" clips. On the top one reinsert the screw and add an M4-.7 nut. Don't forget to grind it down even with the nut.

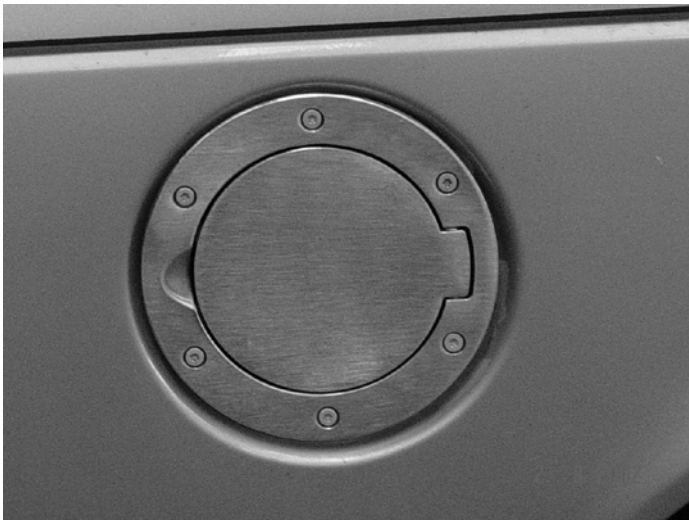


Installation

Hopefully, everything has gone as it was supposed to up to this point. You are now ready to install the door. Work the plastic clip

into the lip of the door opening. I found that it went on better by twisting it in place counter-clock-wise from the gap in the panel at the very rear of the opening. You may have to trim a little from the inside of the clip with a small file for a good snug fit.

Now install the two long screws at the front of the door. Install M4 washers. I used 4 on each screw, and the nuts. Check your fit. I needed to file off a little of the backside of the plastic clip (the side against the door assembly) to bring the door closer to the panel in the rear. After you are satisfied that the fit is where you want it, tighten down the two long screws. You are finished. Congratulations.



Finishing touches

I don't know how the door will look on other colors but I would assume that it would blend in well. I thought about putting thin weather stripping behind the door assembly but felt it was not needed. You may want to put some type of colored fender welting around the assembly to close the gap, if you feel that the gap is too much. And the most important issue, where to buy the assembly for \$70, \$30 less than anywhere else that I have seen. I got it from Diversified Products Marketing in Michigan. They are a Ford Racing/Motorsport dealer and have the best prices that I have

found. They advertise their specials in "5.0 Mustang" and "Muscle Mustangs and Fast Fords". If you have any questions email me at amacraex2@aol.com.

Tools Needed

Torx T-20 driver

7mm wrench

1/4" ratchet and 7mm socket

Phillips screwdriver

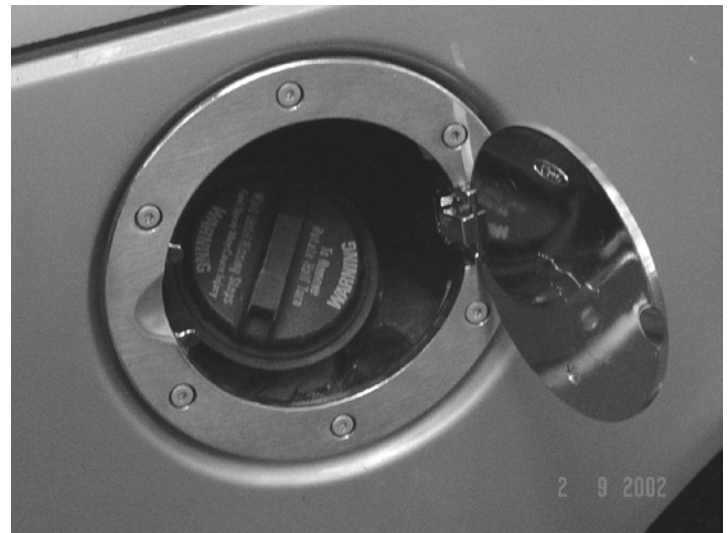
Small hacksaw or similar tool

A set of tin shears may work

Small file

Small ball peen hammer

Drill and bits



Materials Needed

Bullitt fuel door

M4-.7x20mm oval head phillips screws

M4-.7 nuts

M4-.7 washers

How Are Your Clutches? In Your Traction-Lok Unit That Is

By Rick Cunningham
RsuperC@ aol.com

Attending the MN-12 Nationals over Labor Day weekend was simply awesome! There were so many good-looking SCs, T-birds, and Cougars in one place and so many people sharing the same automotive passion as I do. I took lots of pictures to remember that great event.

Saturday, at the drag strip as the day progressed, I couldn't help but notice a few SCs spinning just one wheel. This is a true 60ft ET killer!!! It happened to me over a year ago when I first noticed that my 60 ft times began to slow by 3 tenths or more. My Dad was at the strip with me one day and noticed during my burnout that only one wheel was turning.

When I got back to the pits, he said your clutches in your traction-lok unit are gone! Well, after that I simply packed up and took the car back to the house. The next day I

purchased a set of clutches for the differential. They were less than a \$100 so I went ahead and rebuilt the whole rear end for good measure. This included new races and bearings, and of course the clutches.

I, then, went back to the strip for the last race of the year. The first run I made was 13.51!!! Much better than my 13.83 previously. My 60 ft time was 2.0 instead of 2.3. This was more like it!!! Then in the spring it hit 13.38!! Finally at the MN-12 Nationals a 13.36 second pass was mine, on a strip that was old and ragged, to say the least.

This is something that is overlooked often. If you have 40K or more miles on your SC, this is something that wears fairly quickly. Even more so when you drag race. So, everybody, have yours checked soon because it could be hurting your ETs more than you think. I'm living proof of that. Well, I hope everybody had a great time. I know I did. It was great to meet you fine folks in person instead of just looking at an e-mail address!!

Thanks and God Bless America!!!

1990 Super Coupe FOR SALE

- Titanium Silver w/ Maroon Leather Interior
- 136,000 miles
- Loaded options minus hi end sound system
- 5% aftermarket blower drive pulley
- 17" x 9" Cobra R Replica Wheels w/ BF Goodrich Tires (like new)
- Original wheels w/ bald tires included
- Minor body dents and dings
- Leather interior worn and torn in places

- This was a daily driver!
- Fresh tune up w/ plugs
- No Reasonable Offer Refused

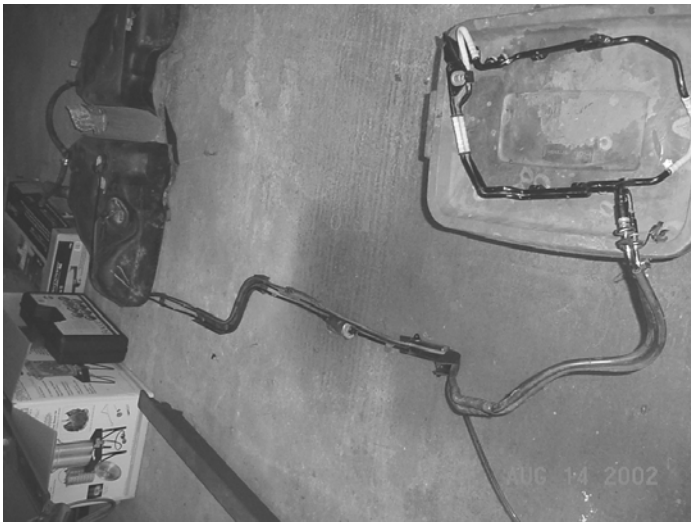
If you have any questions please contact me thru e-mail at maintenance@saintagnes.com, or at home at (859) 261-1943.

Rick Wolking
Park Hills, KY

How to Replace Your Stock Fuel Lines with High Pressure Stainless Lines

By Brian Oatway

So you want to upgrade your fuel lines? Here is a step by step procedure that utilizes stock line routing and mounting locations for all accessories. Let's start with a quick description of the factory components, Pictures # 1 & 2.



Picture 1



Picture 2

Beginning at the fuel rail we have the fuel rail adapters with 45-degree metal bends that change over to plastic line with a rubber outer jacket. These lines extend down through the fender well to a 90-deg. bracket where the lines turn from the wheel well to under the car. Next is the fuel filter and then back to an "S" shaped offset bracket. From the S-bend the lines turn up again, run alongside the gas tank and finally connect to the fuel pump housing.

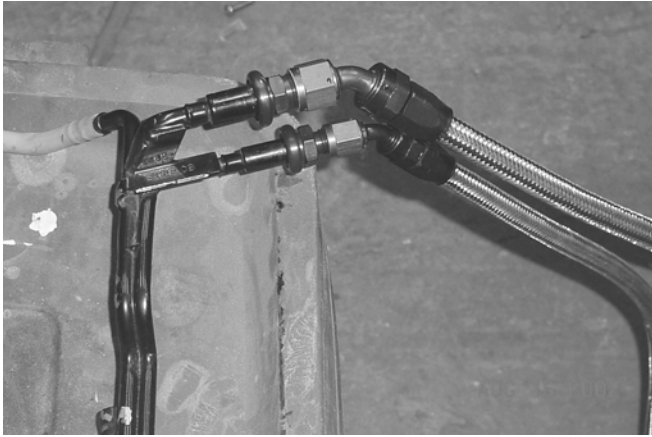
Begin the procedure by disconnecting the battery and relieving the fuel system pressure at the Schrader valve on the fuel rail. Disconnect the fuel lines from the rail (special tool required, I think I paid like \$10.00 at NAPA), drop the fuel tank and disconnect the fuel lines from the fuel pump housing. Remove the passenger side front wheel and the plastic fender well liner and disconnect the fuel vent line from the accumulator at the front bumper. (This vent line will be reused in its entirety). Finally, unbolt the fuel filter bracket, fuel line mounting brackets, and pop out the last few plastic fasteners needed to remove the entire fuel line set. Do not remove the lines from the brackets because we will use them as templates.



Picture 3

Install the new fuel rail adapters on the fuel rail. Picture #3 shows the old fittings and

Picture #4 shows the new fittings (with other parts not yet installed). I used a little petroleum jelly on the o-rings. Make sure the fitting seats completely with the circular spring, forced over the lip on the fuel rail. Remove the safety clips from the old fuel lines and install on the new adapters.



Picture 4

Remove the fuel pump housing from the fuel tank. If you need to upgrade your fuel pump, now is the time to do it. Look closely at the ends of the tubes....they taper at the ends, Picture #5. Using a cutoff wheel, remove approximately 1/8" from the ends of the tubes, file off any burrs, and clean any debris from inside the tubes, Picture #6. This seems to open up the tubes rather nicely. Finally, install the compression type tube-to-AN adapters, Picture # 7, and reinstall the fuel pump assembly back into the fuel tank.



Picture 5

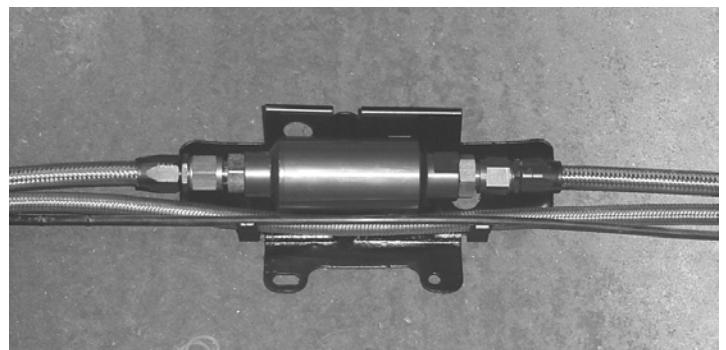
Next, take the new fuel filter, verify that the filter is screwed together tightly, install the 10AN-to-8AN adapters, and temporarily install an 8AN straight fitting in each end, Picture #8.



Picture 6



Picture 7



Picture 8

Time to make up the lines. Remove the stock supply line segment from the rail to the fuel filter. Temporarily install the 8AN 45-deg fitting on the fuel rail and lay the stock line up against the new fittings. Utilizing the stock line as a template, and accounting for the difference in length between the old fittings and the new fittings, at both the rail and filter ends, measure out the length of the hose that will be required.

I simply laid the new hose directly up against the old line rather than trying to actually measure the length. Be careful. Since the fittings at both ends are much longer than stock, measure twice, cut once. Cut the new line by wrapping it with packing tape at the cut and cut with a cutoff wheel. The tape keeps the ends of the hose from fraying. Do not remove the tape until just before you install the fitting. If the braiding separates at the end, you will never be able to install the hose fitting.

Next, install the straight and 45-deg fittings on the ends. In order to install the fitting, you place the portion that goes over the hose into a vice. I put some lead strips over the jaws to avoid damaging the pretty fittings, or you can get special jaw protectors from Aeroquip. Lube up the inside of the fitting with Vaseline, gently remove the tape from the end of the hose, and push the hose into the fitting by pushing HARD and rocking the hose back and forth.

Remove the hose end from the vice and insert the body of the fitting in the vice. Lube the inside of the hose end, the "male" part of the fitting body and the threads. Push the hose end over the male portion of the fitting and screw the fitting together by hand as far as possible.

Finally, you need to tighten the fitting. This takes a bit of force and is much easier if you

can do it in one continuous motion of about a dozen turns. I utilized a big open-end wrench and simply turned it round and round until the hose end was within about 1/16" of bottoming out on the body. Be sure the fitting is secured well in the vice, since you will need to put in some effort here.

The manufacturer sells special aluminum wrenches for doing this that are supposed to not scratch the anodized finish of the fitting. I would NOT recommend using them since they are way too soft for the kind of force you need to exert to get these puppies together. Any scratches you make in the anodized finish can be touched up with red or blue Sharpie markers.

OK, I reinstalled the factory line back on the fuel filter and bracket. Then I removed the portion of supply line from the fuel filter to the tank and repeated the procedure above.

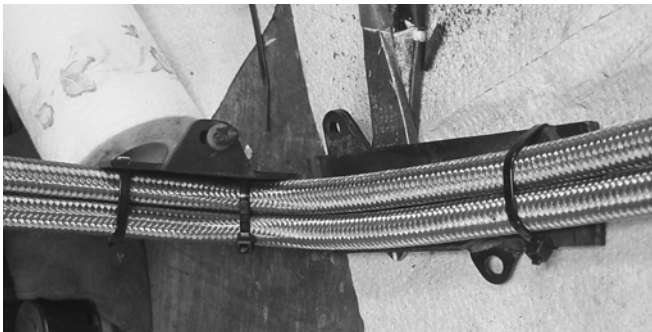
Next, I reinstalled the factory fuel line back on the filter and brackets and removed the entire return line from the rail to the tank. My factory return line had a coupling near the fuel filter, but I opted to simply run the new line straight through. Repeat the procedure above for the 6AN return line and reinstall the stock return line on the brackets.



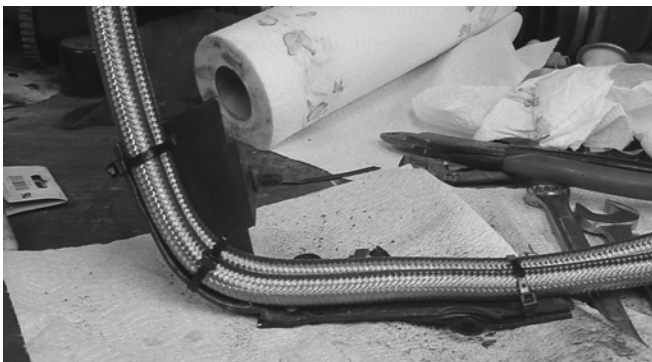
Picture 9

You should now have 2 segments of 8AN supply line and 1 long segment of 6AN return line made up. Next I modified the 90-degree factory bracket to accept the larger fuel lines, Picture #9. Remove the bracket from the factory lines, cut out all of the plastic clips

that hold the factory lines in place and cut off the vertical inner side plastic piece flush with the main body. The new lines will be held on with tie wraps, see Pictures # 10, 11, 12. Notice that the new lines are quite flexible and nearly make the stock bending radius. But notice that I've also slightly over tightened the tie at the bend and it is definitely too tight in the pictures. I would not install the tie wraps at this time but wait until you are fitting things up on the car.



Picture 10



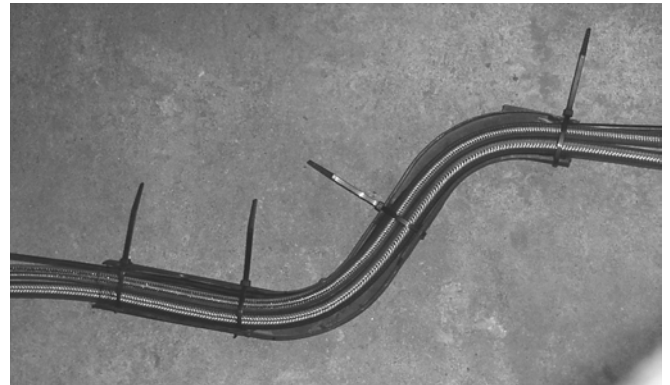
Picture 11



Picture 12

Repeat the above procedure for the "S" shaped bracket, Picture # 13. The only

difference for this piece is that I also removed the two push clip mounting locations and simply utilized screws for the installation.



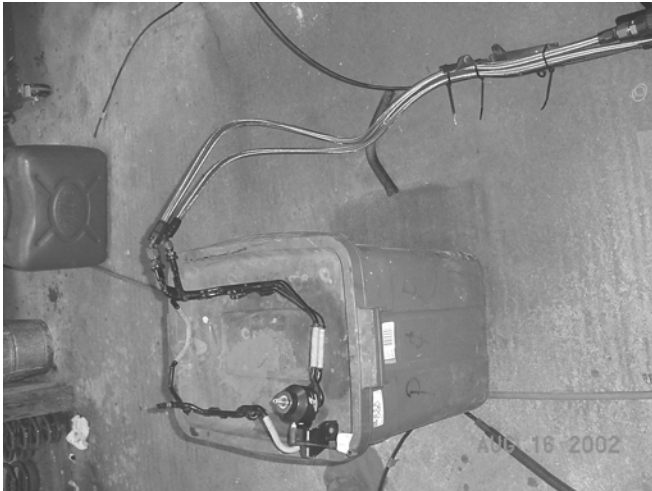
Picture 13

Finally there are two plastic clips between the S bend and the gas tank that I was not able to reuse. I simply bent up a couple of little sheet metal pieces to use in their place.

Fabrication is now complete and we can install the lines on the car. First remove the small vent line from the stock fuel lines and attach the end at the accumulator by the front bumper. Next make up the connections on the supply line at the fuel filter so that the supply line was now one long piece. Feed the fuel rail ends through the fender and connect them hand tight to the fuel rail. Install a 1' long or so piece of black wire loom protector over each of the lines where they pass through the fender to protect them from chaffing and secure it with black electrical tape.

Route the fuel & vent lines to the location of the 90-degree bracket. Install the bracket on the lines using tie wraps and mount the bracket on the car using the factory push clip and a new 3/16"x1-1/2" SS screw. Do not over tighten the screw or you'll squish the lines. Also notice that the bracket will no longer sit flush to the car but rather about 1/4" or so from the surface. Place another short piece of wire loom on the lines where they

exit the support bracket and make a little bend over the sheet metal.



Routing of the lines as they will be in the engine bay

Using the stock fuel filter mounting bracket, mount the new fuel filter in place. I also wrapped the new filter with a thin piece of rubber matting. Continue routing the lines toward the back and install the S-bend bracket. Again I utilized the 3/16" x 1-1/4" SS screws in lieu of the plastic push connectors and tightened gently. Also, once again, the bracket does not bottom out against the frame. Continue working backwards and install little bent sheet metal clips at the two remaining stock locations. One is under the car and one on the vertical surface adjacent to the tank. Also, install some wire loom on the lines where they make the bend up into the recess for the tank and also from the final clip to about 8" from the ends.



Connected up at the tank

Finally, connect the lines to the fittings on the tank and reattach the fuel tank electrical connections. Make up the fittings on the fuel rail and double check everything for tightness. At this point, I reconnected the battery and did the old paper clip in the EEC test port trick to run the fuel pump and check everything for leaks.

Actually, I removed the connectors at the fuel rail, installed a 6anx8an adapter, and ran the fuel through just the lines first, in case there was any debris in the system. I did not want to push it into the rail. I think that you could skip this step if you keep things neat during assembly. When everything is set, disconnect the battery again, mount the fuel tank, replace the fender well liner and wheel, reconnect the battery and off you go.

I have a couple of last comments about the install. Any scuffs in the pretty fittings can be touched up with Sharpie markers, as previously mentioned, and it looks nearly perfect. If you are short on cash, some people have reused the stock supply line as a return line and deleted the Stainless return line. I think you could probably save yourself about \$150.00. Finally, at the 90-deg bracket near the fuel filter, I noticed that the supply line makes a pretty tight offset from the filter to the bracket. You could relocate the filter

3-4" further toward the back of the car and ease that bend. Someone else who cut holes in the sheet metal accomplished an alternative at that location. They routed the lines straight through the sheet metal into the wheel well and did not use the factory bracket.



Under the car at the filter

fuel line should leave you with about 8" of return and 12" of supply as scrap. You will need some tie wraps, screws, tape, etc. to complete the project. I think the whole thing could possibly be done in a day and definitely in a weekend.

Have fun.....



Attaching the "S" bend

The parts list I've provided includes all the major components you will need. The 12' of

Fuel Line Replacement Parts List

Qty.	Description	Price	Source	Part #
1	Aeromotive Billett Fuel Filter	\$79.95	Summit Racing	Summit #AEI-12301
1	8AN Fuel Rail Adapter – Supply	\$49.95	Ron Morris Performance 209.569.0558	No Number
1	6AN Fuel Rail Adapter – Return	\$49.95	Ron Morris Performance 209.569.0558	No Number
1	3/8"-8AN Comp. Fitting	\$15.75	Ron Morris Performance 209.569.0558	No Number
1	5/16"-6AN Comp. Fitting	\$15.75	Ron Morris Performance 209.569.0558	No Number
12'	Aeroquip 8AN SS Hose	\$82.06	Faxon Engineering 860.236.4266	FBA 0800
12'	Aeroquip 6AN SS Hose	\$66.99	Faxon Engineering 860.236.4266	FBA 0600
3	8AN Straight Connector	\$17.76	Faxon Engineering 860.236.4266	FCM 1013
1	6AN Straight Connector	\$6.82	Faxon Engineering 860.236.4266	FCM 1012
1	8AN 45deg Connector	\$22.15	Faxon Engineering 860.236.4266	FCM 4023
1	6AN 45deg Connector	\$18.95	Faxon Engineering 860.236.4266	FCM 4022
2	10AN to 8AN Adapter	\$3.76	Faxon Engineering 860.236.4266	202702T-8-105

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So, you got an EEC-Tuner, now what will do you do? Get a Dr. Fred tuner file! What will a Dr. Fred tuner file do for you? It will assure that you are getting the most out of your supercharged SC or XR7. It will make your car **FAST**, reliable, driveable, and economical. It also means you got a custom tuned chip for the unbelievable price of only \$25 for '89-93 cars or \$40 for '94/95 cars.

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To receive your starter file for your EEC-Tuner, send Dr. Fred a complete list of your modifications, the chip calibration code on your computer, and the calibration curve of your Pro-M MAF or the sample tube size for your C&L 73mm or 76mm MAF. Calibrations for the Lightning 80 mm MAF are also available. Service included with the starter file also includes a few "tweaks" on the file, based on your observations, while driving your new beast. (EEC-Tuners are available through MN12 Performance - www.mn12performance.com, or Spyros Gounaropoulos, aka Slow SC, - sgounaro@optonline.net)

High Performance Engine Rebuilds, featuring the Dr.'s own Heads and Cams, are available at reasonable prices. External component port work performed by Jeramie Schall, also at reasonable prices.

For further information: URL: <http://www.zianet.com/sccosw/DrFred>
E-mail: fredholz@concentric.net
Phone: 303-238-5101 after 5:30 Mountain Std. Time

1993 Morana Stage III SC

By Bill McNeil

I bought my 1993 SC back in April of 2000. At that time, the car was completely stock, and I thought I'd died and gone to heaven driving this silver bullet with all the options and such a powerful motor. Shortly after buying the car, I discovered the SCCoA. Like so many others, I became involved in the club online and began discovering the potential for these cars, and the passion that others held for them. I've always thought the SC community was blessed to have so many great enthusiasts. I'd like to thank anyone and everyone who I've never had a chance to meet, that has offered their help, advice, and support to me as I've turned my own SC into what it is today.



Over this past winter I met and became good friends with Tom Morana, a Canadian engine builder who specializes in 3.8L V6 motors. I approached Tom with what I had intended to do with the car, and we immediately worked out a plan for a package that he assured me would give the SC the performance I expected. Tom is a true expert at what he does, and the knowledge he retains about our motors is

truly incredible. Tom currently holds the record for the fastest n/a 3.8L V6 Mustang, 12.7 @ 110 MPH. Ironically, the motor that achieved his best time was a Mustang block with Super Coupe heads. I would strongly recommend Tom Morana to anyone looking to do a major engine build up. Tom is very fair in his pricing, and is very reasonable to deal with. You can visit his website at www.MoranaV6Racing.com. At this time, the web site is still under construction.

Along with Tom building the actual motor, Fred Holzhauer took over the design of the cam to best suit the heads Tom had made, the performance expectation and drivability needs I requested. Fred used the head flow data he received from Tom, worked his magic, and developed a cam that was exactly what I had expected, and more. Fred also does all my tuning, and has been an excellent help to me both technically, and as a good friend. Fred is a true asset to the SC community, and I would strongly recommend his services to anyone who is serious about making strong, reliable power.

As far as the internals of the motor, Tom used:

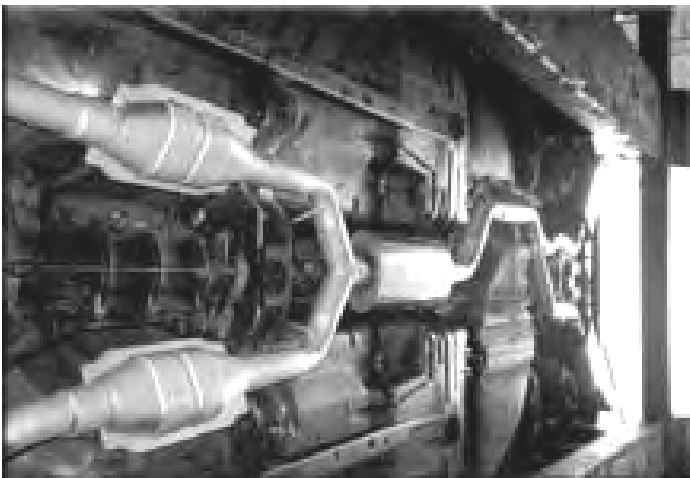
- TRW forged pistons with Hastings moly rings
- Eagle I beam rods with ARP rod bolts
- 1.83" stainless Manley intake valves
- 1.60" VTI exhaust valves
- Speed-Pro dual valve springs
- Scorpion 1.73 roller rockers
- His Stage III heads with a 5 angle valve job
- Mellings hardened moly pushrods
- ARP main cap studs and heads studs
- Fel-Pro gaskets

The block was decked, the crank re-ground and fitted with new bearings, the block line

honed, the cylinders honed, and the heads fully machined. The entire motor was balanced and blueprinted from the crank pulley to the flywheel. Everything on the motor was new including a new timing chain and gears, tensioner, and all seals and bearings throughout.

As for as bolt-ons on the car now, I have:

- A new MagnaPort II blower
- Port matched Magnum Powers supercharger inlet plenum
- Magnum Powers Classic SC top
- 42# FMS injectors
- EEC tuner
- 90mm Lighting MAF
- 85mm Throttle Body
- Mag. Powers Fresh Air Intake System
- 10% OD pulley
- ASP underdrive pulleys
- B-H-J billet harmonic dampener
- 3.27 gears
- 255 lph fuel pump
- 10" I/C fan
- Full custom stainless exhaust system with Borla mufflers and ported stock manifolds



I use 32pp spark plugs, 9mm FMS wires, 15w40 oil and a triple core radiator.

To date the motor has been performing beyond expectations. The last dyno run

produced 322 rwhp and 374 rwt. The car has only been run at the track once, and it went 13.795 @ 105.MPH, but is poised to run low 13s with some decent traction. My goal is to see 12s sometime next year.

The motor runs very smoothly, produces all kinds of power, and pulls all the way to 6000 rpm. Thanks to Fred's killer cam, the car runs quietly and tamely around town, but comes alive above 3000rpm and throws you into the seat. The car is also very fuel efficient. Both highway and tame city driving produce almost stock fuel mileage. I am very happy with the end result and hope to build further upon the great platform I have so far. A front mount intercooler, 1.8 roller rockers and a new hood are next on the list of things to buy. The car will also receive a full paint job before Carlisle next year, and will have some sort of small spoiler for the trunk lid.

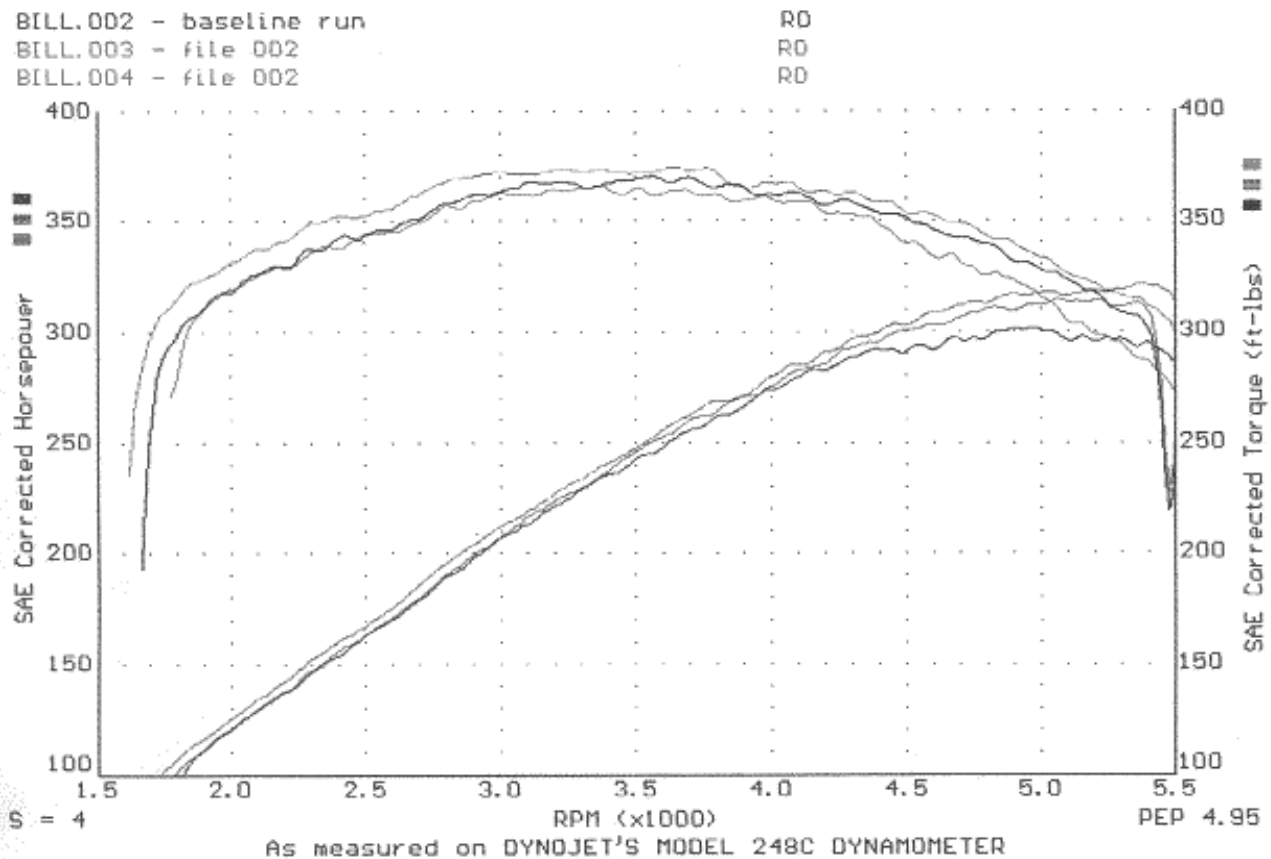
I'd like to thank my girlfriend, Krista, for putting up with all the time and effort that has been put into the SC in the past few years. I'd also like to thank Sean Matteson, especially, for helping me do the motor swap and the long list of other things we have successfully completed in his garage. I'd also like to thank Les Borda for all the help and hard work he has put into the car. Without Les and Sean, this project may have never happened, and I sincerely thank them both for their time and effort.

The SC Club of Ontario (SCCoO) has been a great club to be a part of since I first owned the car. I have met some incredible people, of which I'd like to mention Ed Nicholson, who is our new club President. Also, Jim Gravelle, Steve Richards, Ryan Harris, Greg Coleman, Steve Pathay, Keith Clarke, Paul Milawski and Wayne Ing. I am now a moderator and events coordinator on our board, and I encourage

everyone to visit our website and see what we've been up to now and again.
www.SCCOA.com/SCCoO

Everyone seems to say that if you want to go fast, you have to buy a Mustang. Personally, I'd rather spend the extra money to drive around in an SC with a V6 going just as fast, and in true style. I've developed a true passion for these cars, fueled mostly by local members and BBS

goers. No one really knows what an SC is about unless they've owned one, and there is nothing quite as sweet as when others think you're slow.....when you really aren't. I wish the best of luck to all the SC owners out there, and hope that everyone can keep the passion alive as long as possible. Visit my web site
<http://bcmneil2.tripod.com> for further information.



BILL.002 77.7 °F 29.56-0.44 in.Hg. 600 ft. CF=1.01 RPM/MPH=44
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BILL.003 78.9 °F 29.10-0.44 in.Hg. 600 ft. CF=1.03 RPM/MPH=45
 Max POWER = 321.8 Max TORQUE = 374.5

BILL.004 78.8 °F 29.10-0.44 in.Hg. 600 ft. CF=1.03 RPM/MPH=45
 Max POWER = 314.9 Max TORQUE = 370.7

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Bill's latest rear wheel dyno chart of the new Morana motor.

A Fateful Influence

By Dave Ward

It's been said that there are times in everyone's life when fate, through an event or course of events, leads you to something that can influence you for the remainder of your life. For me, one such moment occurred in the summer of 1984. It was then that my father took me to Pocono International Raceway to watch a Grand National Stock Car race.

My Dad had been away from the sport for a while and was unsure to whom he and his 12-year old son should give their support. Being a diehard Ford man most of his life, he chose the driver that he believed gave the blue oval it's best shot at victory...one Mr. Bill Elliott. (It also didn't hurt that my Father had been stationed in California during his Navy years and had developed quite a fondness for Coors!!!) So, for most of the day, we cheered as Elliott's red, white, and gold No. 9 Ford Thunderbird raced with the Chevy Monte Carlo of Harry Gant. In the end, the chase was in vein as "Handsome Harry" put the Skoal Chevy in victory lane, but the influence of that driver and more importantly, the car he drove, have played a part in my life ever since.



Where it all started

My Father and I drove home from that race in a 1978 Mercury Marquis, but it wasn't too long after that I began nagging my Dad to break down and buy one of the sleek Thunderbird's that we saw Awesome Bill drive every Sunday. Vindication finally came in the summer of 1987, when my Father traded the old Merc in on a one owner, low mileage 1984 Thunderbird. It was the base model, with the hideously slow 3.8L V6, but I thought it was the coolest car around. To make it even better, my Father quickly discarded the factory wheels in favor of aluminum ARE Outlaw II's, complete with Goodyear Eagle ST tires. A wing, headlight covers, and a sport steering wheel soon followed.



The '84 - Fresh from the paint booth

The car remained my father's pride and joy until 1992, when my 1984 Tempo's 2.3L power plant finally kicked the bucket. My dad was in the market for a new truck, so to my great surprise, the T-Bird became my Tempo's replacement. By that time however, the cancerous rust so typical of Fords in the early 1980's, had started to take its toll on the car's doors and quarters. This made a trip to my Uncle Ray's Body Shop a necessity. Soon after, the car emerged from the paint booth with a complete makeover.

Now that the car belonged to me and the sheet metal was cosmetically sound, I

dove headlong into the possibility of replacing the original V6 with a 351W. Super Ford magazines soon began to litter my bedroom floor, along with numerous Summit and Jegs catalogs.

Although the lack of money and knowledge severely hindered this idea, it was a ride to the local auto parts store that eventually put a sudden end to my quest. In route to pick up a few parts for my Dad, I found myself turning suddenly to avoid a head-on collision with another driver who had cut in front of me. This unexpected trip off-road ended abruptly when the car struck a telephone pole. The safety structure held and I ended up no worse for wear, but the car was a total loss.



For the next few months I was relegated to driving my uncle's beater 4-cylinder Ranger, all the while endlessly searching the papers for another T-Bird with the right equipment (read 5.0) and at the right price. It was during the course of a conversation at work that my father learned of another 1984 T-Bird that had recently become available. It was two-tone gray and loaded with almost every option, including a 5.0. Although the owner had been a heavy smoker, I didn't even think twice. After a few phone calls

and \$500.00, this car was sitting in our driveway.



The 5.0L Bird

I spent an entire weekend cleaning every square inch of that car. Underneath the remnants of cigarette dust and debris, the interior was in really great shape...Nothing a nice set of front seat covers couldn't fix. The exterior, as with my previous car, had been prematurely aged by rust. Another paint job at Uncle Ray's shop was needed, but it would have to wait. Besides, the 5.0 engine more than made up for the rust. The wheels and rear wing I had scavenged from my old Bird, took away from some of the cosmetic defects. Once again, all was right with the world.

As my girlfriend and I were leaving for our first date in the new 'Bird, my father reminded me that this car had come with

one minor limitation. The previous owner recently had the car to the local Ford dealer, who warned him that he suspected the crank bearings were getting weak. I was cautioned that until I had the money necessary to buy a good, used engine, I should take it easy on the "go pedal". Now to tell you the truth, to this day I'm not sure which ear that advice went into and which one it came out of, but I know it never stopped anywhere in between. Three hours and one long passing zone later, I returned home in the passenger seat of my friend's F250, with my new car being pulled along behind on a dolly.

The bottom end in my beloved 5.0 had taken a hike, and three weeks later, so had the girlfriend. What was I to do with the newfound time and money of single life? Well, it all started with a low mileage 5.0 out of a 1987 Lincoln LSC. Within a week, my Uncle and I had the multi-port EFI parts exchanged with the necessary CFI components, and the motor was sitting back in the T-Bird's engine bay. The car ran but refused to idle, so another trip on the car dolly was required, this time to a good local garage. With a few redirected vacuum lines and one emission tube, the car was back up and running. I finally had the car and engine combination I wanted.

While my performance options were limited due to the Ford CFI Injection/Computer system, I was still able to raise the car's performance to a respectable level. A custom true dual exhaust and K&N filter were quickly followed by a set of 3:73 gears. Inside, the factory steering wheel was soon removed in favor of a Grant unit and the factory radio and speakers were replaced with Pioneer and Jensen pieces. For the exterior, GTS headlight covers joined the wheels and wing from my previous car,

and I just couldn't resist making a trip to the local Ford dealer for a set of 5.0 Mustang fender emblems.

It was during this time that I started paying more and more attention to the newer style T-Bird's as I watched them race every Sunday on TV. My first experience with the new car was probably during a 1989 "Have You Driven a Ford Lately" commercial, which, among other things, highlighted Bill Elliott's winning of the 1988 NASCAR Championship. The commercial ended with a smiling Elliott driving away in a silver T-Bird (which turns out to be an SC!). At the time of the commercial, I hadn't really given much thought to the new car, one way or another. But a few years later, on a parts visit to my local Ford dealer, I took home a new T-Bird brochure just to browse through. It was then that I learned that all MN12's were not created equal, and SC would no longer be just the nineteenth and third letters of the alphabet. The car of my dreams was on paper in front of my eyes, but I had one more rung on the T-Bird performance ladder to climb.

During the second year with my 5.0, the AOD transmission began to slip on occasion. Nothing major, but it started to bother me. One afternoon, on the ride home from college, I took a double take at a sleek looking T-Bird sitting on a used car lot. After pulling a quick U-turn, my curiosity led me to an ultra clean charcoal 1988 5-speed Turbo Coupe. I hadn't really been a Turbo Coupe fan until then and I honestly don't know why, but this was love at first sight...or should I say test drive? After only five minutes behind the wheel I HAD to have this car. The amount of power from the little 2.3 was completely unexpected and the turbo lag really wasn't that bad. Most of all, I couldn't image how

I had lived without a manual transmission T-Bird for so long! A few prayers and a little persuasion of Dad helped me drive the Turbo Coupe home the following week.

Of course I couldn't let well enough alone. The Turbo Coupe soon had Flowmaster mufflers, a K&N filter, Motorsport Wires, a Superchip/wastegate valve from Rapido, a Hurst shifter, and various other minor engine mods. I liked the "busy" looking Turbo Coupe wheels, so a wing, louvers and headlight covers were my only exterior changes.

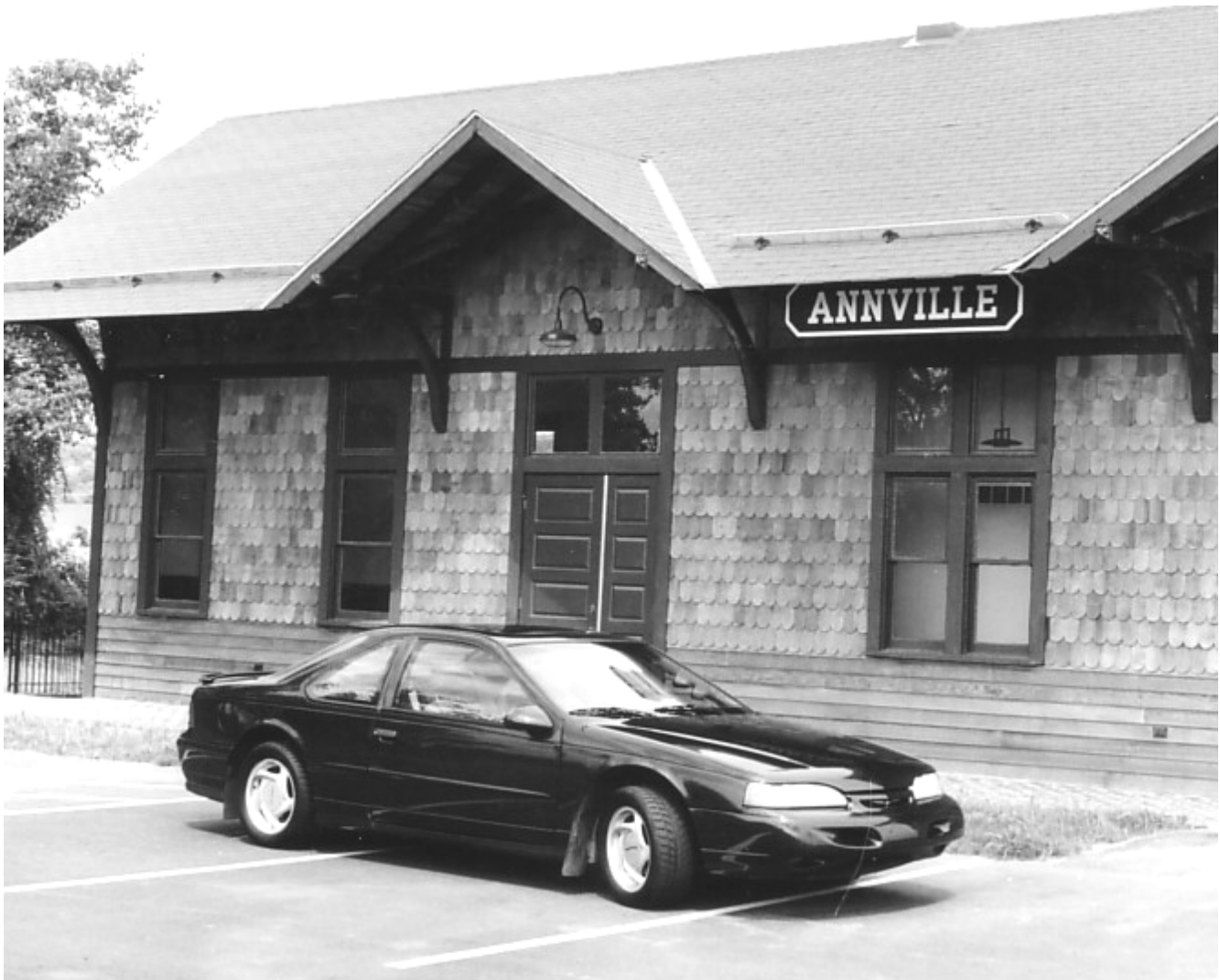
From early 1994 to late 1995 I had a complete love affair with the Turbo Coupe. But around fall of 1995 I noticed that the car wouldn't rev the way it used to. Numerous trips to the local Ford Dealer finally revealed two bad valves and a scarred piston. After debating various options, the decision was made to go with a rebuilt Ford engine. The wait for the engine and installation time was in excess of four weeks. After having the car back for about a month, the rear main seal let go in the new motor, sitting the car for another three weeks. Soon after, while at the local Ground Round restaurant, the car's left quarter panel was the victim of a hit and run. The car that I had fallen in love with seemed to be deteriorating right before my eyes.

I graduated from College that winter, and soon I had my local Ford search for a leftover 1995 SC. By then the SC model was history, but my dealer was able to locate a few 1995's within their zone. Unfortunately, my trade wasn't worth what I thought it was, and all but one of the cars they had found were automatics. Then, as I was beginning my search for a nice used SC, the little IHC turbo on the Turbo Coupe finally gave up the ghost. I

would spend the better half of the next weekend debating what to do with the TC. By that Sunday evening, I had myself talked into keeping the car, getting a High Performance Turbo, and getting on with life. But once again, fate stepped in.

My father had been working on a job out of town, which happened to take him past another Ford Dealer. That Sunday night, while passing their lot, he thought he had spotted a SC. Since I hadn't completely given up the thought of getting a used SC, I journeyed with a friend to the dealer that Monday morning to check it out. As I pulled into the lot, my eyes immediately became focused on a moonlight blue 1994-95 SC. Dad had been right! It was a five speed with mocha leather and seemed fairly loaded. The real surprise came when I realized that instead of a used car this was a 1994 leftover with barely 200 miles on the clock! The fact that it was a 1994 explained why it didn't show up on my 1995 dealer locator the month before. Of course, the sales people weren't too eager to come outside into the Pennsylvania winter, let alone first thing in the morning, so I hiked inside and flagged down the first person I saw.

The salesman I talked to was eager to give me the lowdown on the car. It had been part of a dealer trade that fell through and they had become "stuck" with the car. It migrated back and forth between the lot and the showroom and, after a long stint inside, it had just been put back on the lot Saturday to make room for a new SHO. He claimed they found it hard to sell the car due to its rear wheel drive and manual transmission combination. After about five minutes of good car guy BS, he asked if I wanted to take it for a ride. We drove down a few back roads and after about five miles he had me turn around in a gas



station parking lot. As we began to make a left turn back onto the highway, he told me to get on it if I wished, and all too soon we were sideways through second gear. My Chevy loving friend, who had remained silent for most of the ride, yelled "Holy" something, and then began laughing.

When we returned back to the dealership, we went inside and began talking numbers. It didn't take long until we had a nice deal hashed out, including a \$3500.00, site unseen, trade-in value for the Turbo Coupe. That was great except for one small problem...the Turbo Coupe needed a turbo and I was scheduled to pick up the SC the next afternoon!!! Fortunately, we live just a few miles from simply the best independent parts store in

the world. The next morning, they had my remanufactured turbo waiting on the counter for me at 8:00. With little time to spare, my father and I had the Turbo Coupe running and at the dealership early that afternoon!

I still remember very vividly driving the SC home from the dealership that night. I don't think I had ever been so nervous behind the wheel of any car. Two weeks later, with a little more than 500 miles on the clock, a friend and I took the car on a road trip to Florida for the Daytona 500. Before I purchased the car, we had originally planned on flying, but now, what a perfect way to break in the new SC. In all, I probably spent over 40 hours behind the wheel during the five-day excursion,

and I don't remember once complaining of boredom.

Once settled into the role of SC owner, I began looking at ways to modify my new ride. Unfortunately, additions came slow with my SC, mostly due to my lack of funds and the lack of after-market support. About two months after buying the car, I bought a K&N panel filter and a 10% pulley. That's pretty much how the car stayed for a good year. Later, I bought a Flowmaster Exhaust System, Auto Specialties 3-Pulley Kit, and a C&L 73mm MAF. 3:55 gears eventually followed, as well as an I/C fan, 70mm TB, and a T-Bird Tim blower top. With these few modifications, as well as BFG Drag T/A's, the car has run a best of 14.365 @ 96.53 mph.



On the display field at Carlisle

In June of 2000, I attended my first All-Ford Carlisle. I was overwhelmed at how much support these cars were finally getting. That support has continued to grow every year since I've been going. The same is true for the choices we, as SC owners, have. As I stated before, when I had first purchased my SC, after-market pieces were few and far between. Late in 1996, I contacted Bill Hull, and became a

member of the SCCoA. From my first newsletters, I was pleasantly surprised how much was available to club members as far as information and performance items. Now, it seems that new SC pieces keep showing up everyday. It's amazing what people with imagination and initiative, as well as the right resources can do.

Last fall, I finally received the little piece of pink paper stating that the SC was officially mine. I decided that this summer I would start to get more serious with my modifications. The first step was a set of Kooks headers, followed by an SCPI Exhaust System. I had planned to install the Magnum Powers Intake/TB set-up, but they'll have to wait to be installed over the winter. I haven't found the time to get the car back to the track and see if I can finally break into the 13-second range...the unfortunate fallout from working two jobs this summer. A trip to Island Dragway has been planned for the beginning of October, so stay tuned.

The experience of owning probably the best car Ford ever produced has been amazing. The best part of being a Super Coupe owner has been the people of the SC community I've gotten to meet, especially at Carlisle. Thanks to my SC, I've made friends with whom I'd continue to have contact with even if we sold our cars tomorrow. Four Thunderbirds later, I wonder if my father knows the bulk of responsibility he holds for my fascination with these cars. Sometimes I curiously debate what I'd be driving right now, if he hadn't taken me to that first NASCAR race at Pocono...a Taurus, an Escort, or perhaps a Minivan??? Fortunately, fate stepped in and Thunderbirds have played a major part in my life ever since. Guess I should thank God that my Father wasn't a Chevy fan!

Head Gasket How-To

By Tim Tabor

Project: Replace Blown Head Gaskets

Car: Black/Black 1993 Thunderbird SC, Automatic, 89K Miles

Tools Used: Comprehensive set of mechanics tools, Pulley Tool Kit, Floor Jack, Jack Stands, Small bottle jack, High Pressure Fitting Tool, Parts Washer, Machinist's Stone, Sand Blaster, Air Compressor

Parts/Supplies: FelPro Upper End Gasket Set, Thread Sealer Liquid (Loctite 565 or equivalent), Anaerobic Gasket Replacement (Loctite 518 or equivalent), Ford Intercooler Teflon Tape or equivalent, Brake Cleaner or other cleaning solvent, Ford OEM Battery Cables, Ford OEM belts, Ford OEM Hoses (Radiator, Heater and Water pump), Ford OEM Dip Stick Tube, Ford Super Charger fluid, Anti-Freeze, Oil, Oil Filter, ARP Head Stud Kit, Magnecor KV85 ignition wires

Cost: Overall cost was approx. \$750.00

We all know about Super Coupes and Head Gasketsor do we? When looking for information I found that a lot of us know that they blow, but not too much else. Last November, my '93 SC was down for the count. It had given me warning signs, which at the time I discounted as minor, unrelated problems. I would be amiss if I didn't share these *obvious* indicators with you. They are listed in the order in which they actually occurred, over the period of about a week.

Indicator 1: Rough Idle at startup until I cleared the engine with a few easy revs.

This was accompanied by a couple of small puffs of white smoke that my wife told me about after the gasket blew completely.

Indicator 2: Hard Starts similar to a faulty battery connection and then cranking longer than normal until started.

Indicator 3: Light white smoke on acceleration and light puffing of white smoke when stopped.

Indicator 4: Heavy white smoke continuous while running, especially under acceleration.

Indicator 5: Temperature gauge rising to the high side.

Right up to Indicator 4, there were none of the normal signs of a blown head gasket. The radiator reservoir was full and did not have any oil in it and the dipstick had clean fresh looking oil at the full level. The engine was passing the antifreeze/water mix up to that point. Once the gasket let go completely, the reservoir was low and had an oily mix floating on what was left and the dipstick was covered with caramel looking oil/antifreeze/water mix and was well beyond the full mark. As they say, hind site is 20/20.

Before I move on, I have to thank fellow SCCOA member, Curt Hungerford. He not only helped me do the work on this project, but also allowed me to use his garage and tools. Thanks Curt!

Now on to the project!

The first step was to disconnect the battery and remove it. Then to remove all of the components that were going to be in the way; wiper motor and tray, cold air intake, washer and radiator reservoirs, coil pack, radiator hoses, etc. We did not

remove the hood, but I would recommend doing so. We then began disassembly of the super charger, the intercooler, and the intercooler tubes. Be sure to cover the openings on the super charger to prevent contamination, or as the Air Force folk would call it, FOD – Foreign Object Damage.

After the tubes and intercooler were out of the way, we removed the radiator, all belts, alternator and the power steering pump pulley. Another excellent investment, if you plan to work on these cars, is a power steering pulley tool kit. These kits come with the tools necessary to not only remove, but to install the power steering pump pulley. I can't imagine attempting to remove or install this pulley without this tool.

With the pulley removed, you can easily access the fasteners that hold the large cast aluminum bracket and power steering pump. To make more room under the hood, we chose to completely remove the A/C compressor. To do this, you need to completely discharge the system. This should be done by a HVAC professional who has the equipment to remove and contain the old Freon without causing damage to the environment. Costs will vary for this service, so shop around for the best price.

After the system has been evacuated, remove the needle valves from the high and low pressure lines, using a tire valve tool. This will prevent the possibility of the system becoming re-pressurized. To remove the high pressure fittings on these lines, you will need a special tool to prevent damage to the seals. These can be purchased at most auto parts stores. This simple tool slips over the line and is pressed into the fitting to release it. Make

sure to use the appropriate size for each of the fittings. Once the lines were released, we removed the compressor completely. About this time, we were looking at a pretty bare engine.

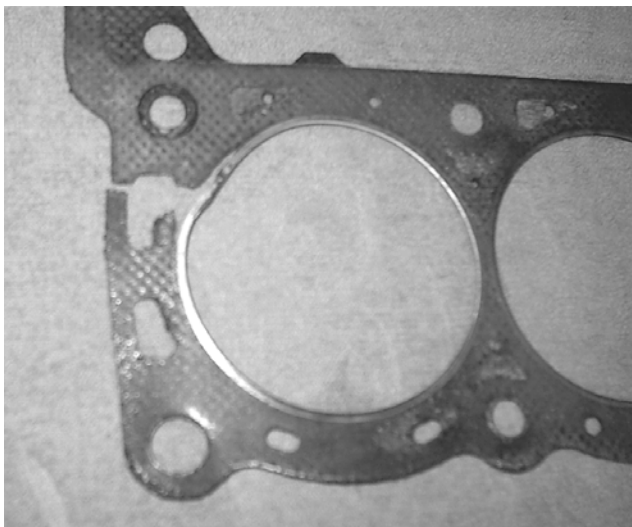
As time and monetary constraints had dictated a top end refresh only, we began to further disassemble the engine. We removed the valve covers and fuel rails...you'll need the high pressure fitting tool again for these fittings. Remember to bleed off the fuel pressure, via the Schrader valve, before attempting to remove the fuel line. With the fuel rails out of the way, the injectors were removed and safely set aside to avoid damage. I then began removing intake bolts and lifted the intake off. Meanwhile, Curt worked under the car and loosened the exhaust system and managed to take out all but one bolt. The transmission cross member needed to be removed to facilitate the removal of the exhaust system, so Curt used a small bottle jack to support the transmission and removed the cross member.

One helpful hint we can offer here, is to mark the cross member so you know which way it is mounted before removing it. It will definitely make reinstalling it much simpler. Even with the cross member removed, the upper bolt on the right exhaust manifold proved to be impossible to access and we ended up removing the exhaust manifold to get the exhaust out the rest of the way. Once the manifold was loose, the top bolt was simply removed and the exhaust was removed from the car. Don't fool yourself on the time it will take to remove the exhaust; it was one of the most difficult jobs in this whole project.

Once we had removed everything else, it was time for the heads themselves. We

began to loosen them, following the tightening sequence listed in the shop manual, to make sure not to put any uneven stress on them. These bolts are tough to break loose, as they have a hefty torque specification. Be ready with a large breaker-bar and quality 6 point socket to get the job done. Note that with the engine in the car, you don't have the best of angles on these bolts, so having a second person to help push or pull the breaker-bar doesn't hurt either!

After loosening all of the head bolts, we removed them the rest of the way by hand. The moment of truth was upon us as we lifted off the head, expecting to see the rear cylinder being the problem...we were both right and wrong. The rear cylinder had been compromised, but the front cylinder was completely blown. The photo below shows the separations in the fire ring. The white circles indicate the separation in the steel fire rings. We immediately soaked up all the antifreeze mixture that had leaking into the cylinders.



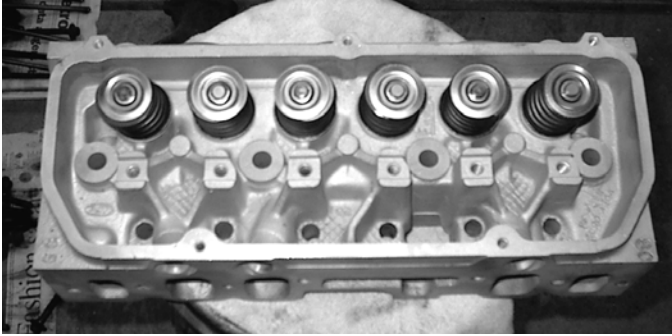
The failed gasket

Examination of the block-to-head-surface was a real disappointment for Curt and me. The surface had rough machining marks, cut deeply around an area, which

certainly should have been glass smooth. Ford obviously thought differently. We then took to removing the right head using the same process as the left. Lifting it off, we discovered that the front cylinder fire ring was separated, and if it hadn't blown, was well on its way to being the next to go. The block-to-head-surface on the right side was no better than the left. The tops of the pistons and the cylinder walls looked good upon visual inspection.

With both heads on the bench, we removed the rocker arms and disassembled the valves and springs, using a valve spring compressor. We then placed the valves into a specially built holding device. Ok, so it was only a piece of 2x4 that I drilled 12 holes into and numbered, but it worked well. We placed each valve, corresponding spring, caps and keepers together so as to reassemble exactly as they were removed. Rocker arms were set out of the way and numbered; each with its own bolt, fulcrum, and corresponding push rod.

It was now time to take the heads to a shop for some milling. A local Ford garage had told Curt and me that they do not mill heads when doing head gaskets. We've always figured doing it right the first time minimizes the number of times you have to do it right the second time. Another SC owner, who works for a garage, provided the mill work and preliminary cleanup. You can expect to spend around \$80 a head for milling. Addition costs can be incurred if you desire pressure testing, valve guides, porting, etc. These services can run into big money; so be careful to know up front what you are getting and paying. All of the shops that I contacted were able to complete the service within a day or two of dropping the heads off.



The heads fresh from the machine shop

With the heads at the shop and “nothing else to do”, I bought a machinist’s stone; a two sided stone generally about 6” – 8” long, with one course and one fine side costing around \$10. These stones can be purchased at most auto parts stores or tool stores. Using the stone and some cutting oil, I carefully began to work the block-to-head-surfaces. You must be extremely cautious to keep the stone perfectly flat to the surface and work in a smooth circular motion. After about 3 hours, the left side was looking pretty good. Some brake cleaner was used to remove the excess cutting oil and then a Shop-Vac was used to remove the fine metal shavings from the cylinders. Knowing that it would be a few days prior to reassembly, we coated the surfaces with a metal protecting spray. Alternately, you can use oil for this. Following the same procedure and another 3 hours, the right side was looking good, too. We then spent some time cleaning the rest of the exposed portions of the engine.

As the engine compartment was a bit dirty, we decided to power wash it. So we put a large thick towel over the top of the engine. You want to be especially careful to not get any moisture into the A/C System, so we used silicon plugs on all of the open lines. After a good washing, we immediately blew the entire engine compartment out with air. We then focused on the engine, making sure there

was no water lying in any area. Again, we used air to completely dry everything and again coated the surfaces with metal protecting spray. This is a great time to visually check all of the wiring, hoses, and lines. that run behind and beside the engine, and on the back of the engine compartment, for wear. In doing so, we decided it was the perfect time to replace the heater hoses, that, with an assembled engine in place, are a real pain to get to. It was time to make a parts list. Items we decided to replace included: All belts, all hoses (upper and lower radiator, both heater hoses, water pump hose), thermostat and gasket, spark plugs, battery cables, and obviously, all the top end gaskets.

The heads were done so I picked them up. The garage cleaned them up quite a bit. They had even bead-blasted them and had them looking almost new. Curt and I removed the old spark plugs (originals) and bead-blasted what few spots hadn’t already been taken care of. We then removed the valve seals, by simply prying them off gently. Using valve grinding compound, we used a cordless drill to quickly reseal each valve, by slipping the valve into place and carefully chucking the spring end of the valve into the drill. You could then spin the valve, while pulling up slightly to ensure a good seat. We then chased each treaded hole on each head with appropriate sized chasers to make reassembly easier.

To remove the grinding compound, bead residue and any other crud left behind, Curt scrubbed the heads in the sink. He ran water through them until it flowed clear and clean, and no residue could be seen on a white towel. Each valve spring, caps, keepers, and rocker arm assembly, was washed in the parts washer and dried.

We then installed the new valve seals using a small drop of oil on the inside of each before pressing them into place. We then reinstalled the valves, using the valve spring compressor. After the valves were installed, we verified proper keeper seating by giving each a tap with a hammer. We then installed new Ford double platinum plugs and indexed them for optimum performance. The entire process was repeated for the other head. With both heads ready to go, we placed them on a soft clean surface, out of the way.

Our focus was now back on the block where we installed the ARP head studs. Be sure to follow the instructions included with the studs to ensure that the studs are lubricated and/or sealed properly. While they include assembly lubricant, you will need to buy the Teflon based sealer required for several of the head studs. Be sure to completely seat the studs as directed, or you will be removing the heads, to do it later, as the studs are too long if not properly installed! With the head studs installed, we were ready to reinstall the heads. To give the best possible seal, we cleaned all the mating surfaces of the heads and block with brake cleaner, to make sure there was no oil or debris. We placed the new FelPro head gaskets in place and made sure that we had them installed correctly. FelPro stripes one side of the gasket as a reference. We then carefully lowered the left head onto the left side, making sure not to drop the head against the gasket, that could damage the fire ring. Once the head was in place, we put on all of the nuts, finger tight. If you plan to use the ARP Head Stud Kit, you will want a very high quality 12pt socket to torque the new 12pt nuts.

The next phase is critical to prevent damage to your heads and new head

gaskets. Follow the tightening sequence as noted in a shop manual. I STRONGLY recommend using a Genuine FORD shop manual as I've seen much misinformation in other manuals.



The valvetrain reassembled

We used a high quality "click" torque wrench to ensure the proper torque on each nut, and double checked all of them by running through the tightening sequence again. We repeated the same process for the left side head. It was now time to reinstall the intake manifold; we installed the new gaskets and set the intake in place. Make sure you check to see that all gaskets are properly in place before you begin to install the bolts. A small screwdriver works well for lining up the gasket if it happens to move. We installed all of the bolts finger tight and then followed the tightening sequence as noted in the shop manual. We again used the "click" torque wrench to ensure proper torque, and of course, ran through the sequence again to double check. The real important part of the job was done and the engine was looking really nice.

At this point Curt slid under the car once again and began reattaching the exhaust system. We quickly learned that the head

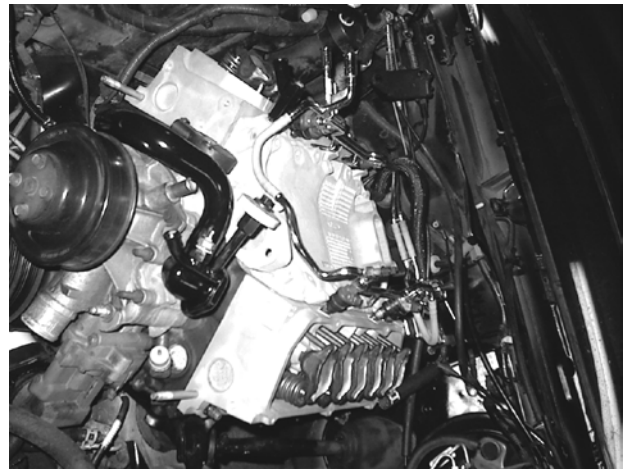
studs did not fit well with the factory exhaust manifolds. We had to remove them, and grind them in a couple of spots, to facilitate the new head stud nuts. We were very conservative during the grinding process, taking off small amounts of material and test fitting frequently. It was during this phase that we also discovered another problem; the dipstick tube was broken. We called our local Ford Parts connection and a new one was on its way. Thinking that it would be no trouble at all to replace later, we simply left the manifold bolt that secures it loose...more on this later. With the dipstick on order, we went back to the manifolds. Once we had a good fit without rubbing, we attached them and used the torque wrench to get the appropriate torque settings. With the exhaust manifolds in place, Curt finished reconnecting the exhaust system.



The lower intake in place

Once the exhaust system was completely reconnected, we attempted to reinstall the cross member. Remember the tip I mentioned earlier about marking the cross member before removing it? Well, it is not as simple as one might think to figure out how it actually goes back in. It fits several ways, but will only attach properly one way. After installing it upside down and backwards, we finally figured out how it

went and installed it in its proper position. We'll definitely be marking any of them that we remove in the future! After our struggle with the cross member was won, we installed the valve covers, making sure to place the bolts in the correct pattern, so that the pin top bolts were in the right position to hold the plug wire clips. We were extremely careful to apply the exact amount of torque to minimize the potential for leaks. Again, follow the shop manual with regard to torque specs.



The fuel system is back

We were now ready to spend time cleaning the rest of the components so that we could reassemble a clean final product. When everything was clean, we continued the reassembly process. We then began to reinstall and reassemble the other components in the reverse order of which we had removed them. Starting with the fuel injectors, we began the process. You have to be very careful when reinstalling the injectors, due to the fact that the o-ring seals may have expanded a bit from contact with the fuel, and may tend to try and push out of their groove, not seating correctly. A small amount of oil wiped around the o-ring can be used to help prevent this problem. After installing the injectors, we reattached the fuel rail and fuel lines.

Since we still had a little space around the engine, we decided that it would be a good time to install the new Magnecor KV85 ignition wires. We routed the wires and secured them with the appropriate wire clips. We then mounted the super charger, throttle body, and other associated components. As we wanted the installation to be correct, and didn't want vacuum/pressure leaks, we used the appropriate sealer on the super charger/intake surfaces. The equivalent product to that listed in the Ford Shop Manual is; Loctite Gasket Eliminator® 518 Flange Sealant which we found at W. W. Grainger for about \$26. This is a gasket replacement material that dries extremely thin and in the absence of air. Use this product very sparingly, as too much will ooze out all over the place.



As this seemed to be the perfect time to install the lower inner-cooler tube (we could easily get to the bottom mounting stud), we prepared it for mounting, by thoroughly cleaning it and making sure that there was no Teflon sealing tape or residue left on the flange surfaces. We then applied new sealant tape to the surfaces. This tape is a special adhesive backed Teflon tape, which is available in a kit from Ford or from several independent dealers. You **MUST** use this tape if you

want the **BEST** possible seal and to avoid vacuum leaks in your inner-cooler tubes. Once the lower tube was mounted, we then mounted the large cast aluminum bracket and power steering pump. Then we mounted the coil pack and attached the wires. We installed the power steering pump pulley using the power steering pump pulley tool kit. The engine compartment was finally starting to look familiar again!

We then remounted the A/C compressor. We decided to put the new belts on while the radiator was still out of our way. With the belts in place, we dropped the radiator back in place and secured it.

Now, about that broken dipstick tube. The new one arrived and we were comparing it to the broken one. Reality set in. The bottom, approximately 2", of the broken one was still in the block. With everything in place, there was no reaching this area from the top side. As many of you know, there isn't any wasted space in the engine compartment of an SC and this includes underneath. A screwdriver, needle nose Vise-Grips, and hammer, were the necessary tools for this job. I was able to get at an angle enough so that I could pry up on the broken piece, but not enough that I could really get any leverage on it. Working for a while, I was able to move it out enough to get the needle nose Vise-Grips to grab a bit of the broken tube. Using a large punch, I was able to tap on the Vise-Grips with the hammer, until I was able to work the broken tube completely out. We then worked the new dip stick tube into place. With its bends and all the other components in place in the engine compartment, it was a challenge, but Curt finally worked it into place. With some teamwork, we were finally able to get it lined up.

Seating the new tube was a whole different ballgame. We used long screwdrivers, wood, and anything else we could find, to try and drive the tube into the block. Perseverance prevailed, and we were finally able to seat the tube. Next time, I'll be replacing the dipstick tube while the heads are off, or at least, when the IC tubes are out of the way.



As you can imagine, the engine is looking pretty complete by now, so we threw on everything we had left; reservoirs, wiper motor assembly, etc. We filled the radiator with new coolant. As the engine had sat for a couple of months, we simply drained the contaminated oil and replaced the oil filter. Knowing that we would be changing the oil in about 100 miles, we added some fresh "cheap" oil just to flush the engine out, no sense wasting \$4/qt synthetic. The final step was to install and connect the battery.

The moment of truth had arrived. I cranked the engine a couple of times, not allowing it to start, but enough to make sure everything was turning, and no major signs of a malfunction were present. We quickly inspected the engine and determined that there were no abnormalities. I then cranked the engine; even after everything had been disconnected for so long, it started right up. There was of course, some smoke and a bit of rough idle at first, but both went away after a few minutes of running. We then shut it down and began to look for any problems; leaks, etc. Thankfully, there weren't any!

Overall, the project was a fulfilling adventure. Curt and I will definitely be doing another engine as soon as we have the chance. Since the completion of this project, we have had the opportunity to reflect on things that we would do differently next time. Only one major thing stands out...what is it??? Pulling the engine and working on it on a stand! Other than that, we were both satisfied with the outcome.

So if you're thinking about doing you own head gaskets, Go For It!

Have any questions or comments? Drop me a line: tim@tabol.com

2002 MN12 Nationals Review



There was a huge turnout at the car show on Sunday



At the track on Saturday



18" BBS Wheels spruce up this SC



Ron DiPaola, the SCCoA Webmaster, doing some tire pressure changes.



Everyone was checking out the parts brought to the show by some of the sponsors.



The ever-popular burnout contest was a big hit! David Neibert (L) and Ted Lyons(R). Ted's burnout was accomplished with his Mini-Me trailer attached (below).



The ¼ mile track event was likely the most popular event of the weekend. Rick Cunningham (L) had the quickest car with a 13.3-second blast. This was a new personal best for Rick. James Fernandes (R) was one of the car show winners.



This 4.6L LX owner boiled his tires for two or three-minute's non-stop to win the contest. His car literally disappeared at times in the intense smoke! He finally quite because his car started blowing coolant all over the track. Thankfully, the problem was only a burst coolant line. The wasted hot rubber remaining on the track from this car smoldered for over ten minutes after his display



The Sunday brunch was delicious and well organized. Numerous trophies were handed out at the end of the day.



Next year the National meet will likely be somewhere out west. Keep an eye on the SCCoA web site and be sure to vote where you would like the next location to be. Thanks go out to all the event sponsors...The TCCoA, Magnum Powers, The SCCoA, MN12 Performance, and Super Coupe Performance. A special "Thank You", goes out to Rob Whitt, who was the event coordinator again this year. Don't miss next year's event!

SC / XR7

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Installation Ready MagnaPortII Blowers...(aka "No Wait" MPII) are available for your 89-93 SC so you can install your new Magnum Powers Intake System Saturday morning and be burning up the strip with 60 to 80 more HP Saturday Night! That's right, you don't have to wait for shipping, etc. and have your car down for weeks, just install it and be on your way! For ONLY \$1195 these Blowers are Chemically Stripped and Powder Coated for a New Appearance, Rebuilt and MagnaPorted. After you install your new system you can send your rebuildable old blower back to Magnum Powers for a \$250 core credit resulting in a final cost of ONLY \$945!! Such a DEAL!!

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