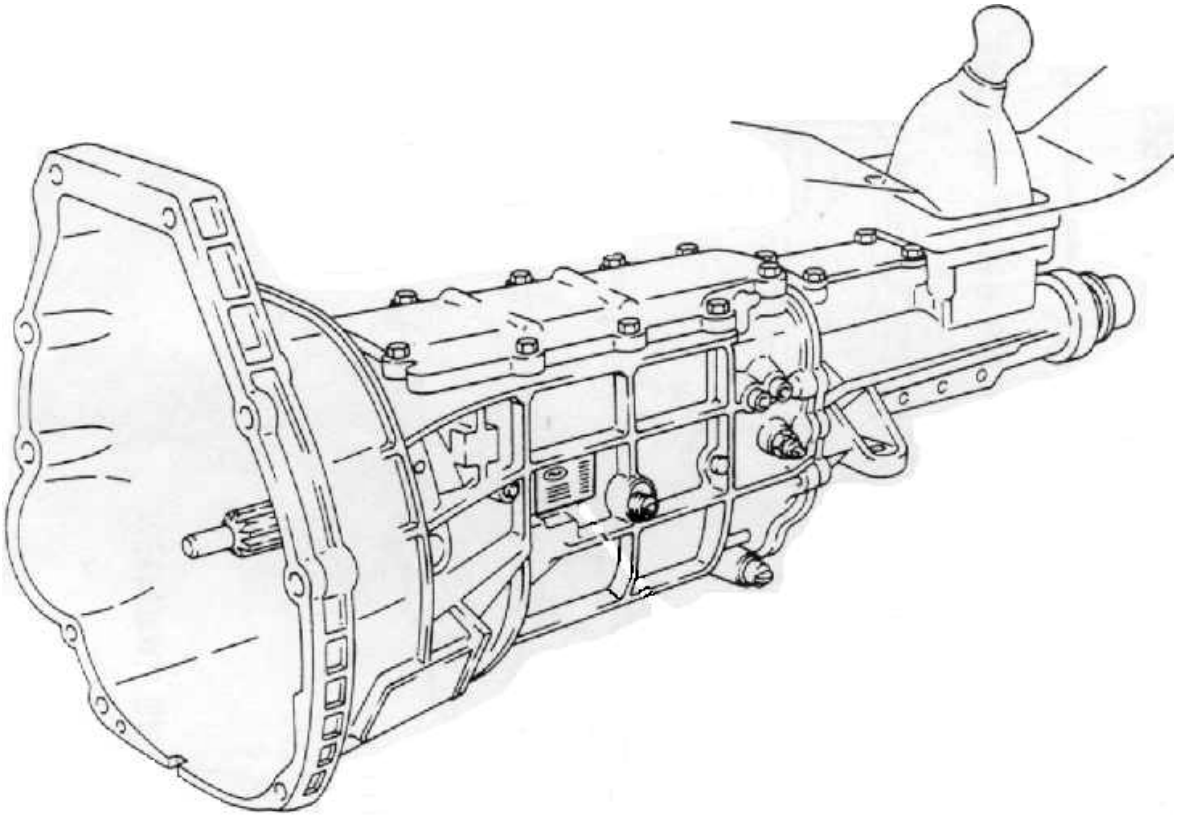
CHARGIN' THUNDER

Super Coupe Club of America

Volume V ***June 2000***



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

Trust in the Lord with all thine heart; and lean not unto thine own understanding. Proverbs3:5

Bill Evanoff – President & Editor

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Changes of Address

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

Mailing of Newsletters

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

Problems & Complaints

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

New Membership & Renewal

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

Classifieds

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

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

Daily Schedule

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

From The Birds Nest

By Bill Evanoff

What is your personal goal or objective as it relates to your Super Coupe or XR7? Is it being able to blaze the quarter mile in 13 seconds or less? Perhaps you want to be able to embarrass Corvettes and Porsches going through the twisties! Then again, your goal may be to maintain your supercharged coupe in the best original condition possible.

All three are quite achievable, but I want to discuss the last objective in this editorial. Keeping your car original most likely involves having as many factory or Ford replacement parts on your vehicle as time goes by. While this may be stating the obvious, there are a few things that I want to discuss with everyone that should NEVER be kept original. These items include virtually all the fluids on your SC/XR7.

Changing the vital fluids is something that I'm sure everyone has an opinion on. If I were to ask 100 owners if they maintained their car properly, they would all definitely say, "Oh yeah, I change my engine oil every 3000 miles", so "YES", I maintain my car very well. I wonder how many would say, "I change my coolant, transmission fluid, and brake fluid according to recognized standards as well?" I would say maybe 5 out of 100. And this is why I'm here today to goad you into **properly** maintaining your SC/XR7 for the future.

Keeping your car "original" does not mean you can brag that your AOD has its original Ford automatic transmission fluid in it, or that your ABS braking system has its factory brake fluid. If your car does, then SHAME ON YOU! These are items that need regular changing and you definitely DO NOT want to them keep original.

Here is what I would consider as "proper" maintenance on your regularly driven SC/XR7. I am not claiming to be an expert here, but I am only passing along what I have learned from various professionals I have known over the years.

Engine Oil: Change every 3000 miles or every three to six months. See the March 2000 CT for much more information regarding oil and oil change intervals.

Automatic Transmission Oil: Change every two years. Heat in an automatic transmission is a real killer. New fluid can handle the heat but old fluid looses this ability.
Note…ATF in a 5-speed car should be changed every five years (possibly longer).

Brake fluid: Change every two years, or every year if you really use your brakes excessively, such as in the mountains. ABS systems benefit from clean fluid.

Coolant: Change every two years. Acid enters the coolant from the combustion process and will attack aluminum parts and gaskets within the engine over time.

Power Steering Fluid: Our cars use Type F Automatic Transmission fluid and it should be changed every five years.

Rear Gear Housing Lube: Change every 100,000 miles.

Some of these intervals may seem extreme, so use your own judgement, but I do feel very strongly about the brake, coolant, and automatic transmission fluid intervals.

Brake fluid is something that typically never gets changed but degrades over time and absorbs water from the atmosphere. When you have water in your ABS system it promotes corrosion and also can severely degrade your braking performance. Check out the following chart that compares the

percentage of water in your brake fluid with the boiling point of your fluid. One can see that as the percentage of water increases, the boiling point decreases rapidly.

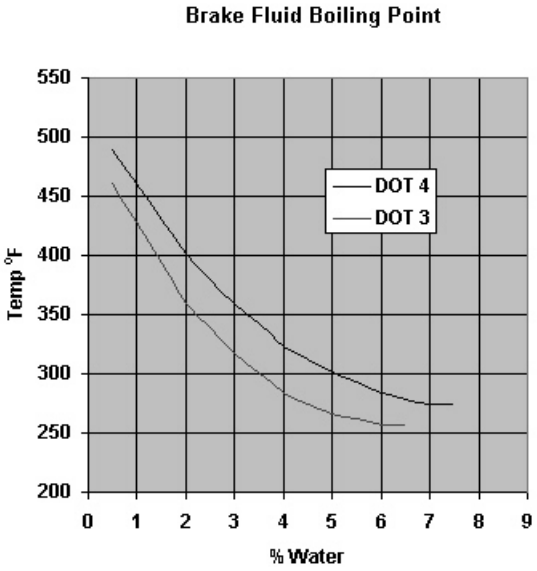


Chart from the SHOTimes web site

Tests have shown it is not uncommon for one-year-old brake fluid to have 2% water content. After eight years, it is not uncommon to have approximately 4% water content. Since most of our cars are around eight years old, I highly encourage you to change your brake fluid ASAP!

Ford Heavy-Duty brake fluid is a good and inexpensive replacement choice but it should be changed every year or two as I've already mentioned. If you wish to buy a more expensive fluid to slightly lengthen your change intervals try ATE Super Blue Racing or ATE Type 200 fluid. These two brake fluids are exactly the same stuff, but are two different colors. When changing from one to another you can easily tell when new fluid is flowing out the caliper.

Upcoming National Shows:

The SCCoA will be attending the Ford Expo again this Labor Day weekend in Columbus Ohio at National Trails Raceway (740-928-5706). The dates are September 1st – 3rd. The SCCoA has attended this show since 1996 and we always have a large turnout.

The SCCoA is staying at the Hampton Inn (Columbus East 614-864-8383). Another large hotel across the freeway from the Hampton is the Lennox Inn (614-861-7800). We have stayed here in the past as well. You make the choice, but make your reservations soon and bring your drag radials to this outing as the drag strip is open all weekend!

ABS Accumulators:

1989 to '92 SC owners now have another source for purchasing replacement ABS accumulators. The SCCoA is selling this critical brake component at a significant discount compared to your local Ford dealer. We offer replacement accumulators for $125 + shipping to club members. The SCCoA price compares favorable to the $180 + tax that a typical dealer will charge. To order, just call or email us.

Anyone driving an early style SC who does not have the December 1999 issue of CT, I highly encourage you to get it. This issue is invaluable when it comes to understanding, diagnosing, and repairing your Teves II ABS system. Heck, I'll even give away a free copy with each accumulator order if you don't have the December issue.

The Ladies Corner:

Patty is asking for articles from any SC passengers who have experienced terror at the hands of a Super Coupe/XR7 driver. Her next article will be titled "Tales from the Passenger Zone." Please submit stories via email at pattyevanoff@usa.net or send by mail.

New "Club Logo" Tshirts:

Due to popular demand, the SCCoA now offers a Club Logo shirt for club members. This shirt is in addition to the cartoon style shirts offered in the last CT. Full color pictures of these shirts can be found at http://members.truepath.com/xs_tork/tshirts.html

New Club Logo Shirt – Front, back & sleeve shown

The shirts are available in sizes Med. – XXL. The cost is $15 + $3 shipping. The double extra large (XXL) size is slightly more expensive at $17 + $3 shipping.

Get your car on the World Wide Web:

Our "Members Car" page on the web site is continuing to grow and I want to encourage everyone to have their car posted. Mail your pictures to Ron DiPaola at 206 South Duane St., Endicott, NY 13760. You may also email him your pictures at "scguys@usa.net".

World Ford Challenge 2000

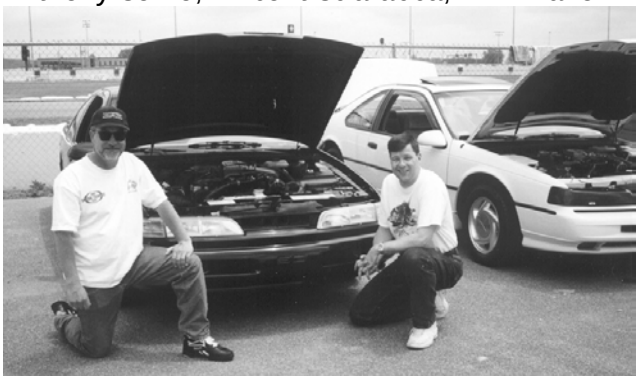
The W.F.C. was held this year on May 18 – 21 near St. Louis at Gateway International Raceway. Over 30 Thunderbirds graced the show field and a good time was had by all.

Duane Nettles - 1'st place in the modified class

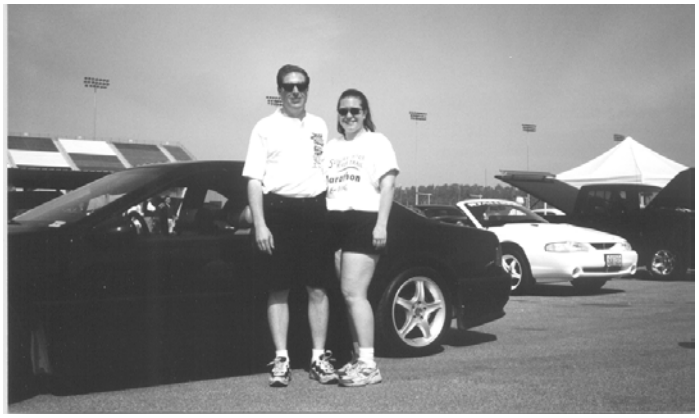
Grant Werner

Those in attendance:

Kurt Kreisz, Andy Minett, Nick Weaver
Micah "three wheel" Miller, Tanya Norman
Kenn Bueckman, John Jackson
Scott Nelson, Brian Herron, Duane Nettles
Mark McCormack, Bill Wheeler, Robert Grasse
Doug "driveshaft destroyer" Williams
Andy Erickson, Joe and Sara Baldazzi
Jeff Colonel, Neil Montgomery, Virg Mazzeo
Anthony Serno, Vincent Sciarabba, Bill Evanoff



Andy Erickson & Robert Grasse



Joe and Sara Baldazzi

Micah Miller and Kurt Kreisz

Kenn Bueckman's super clean teal '94

Scott Nelson & Andy Erickson

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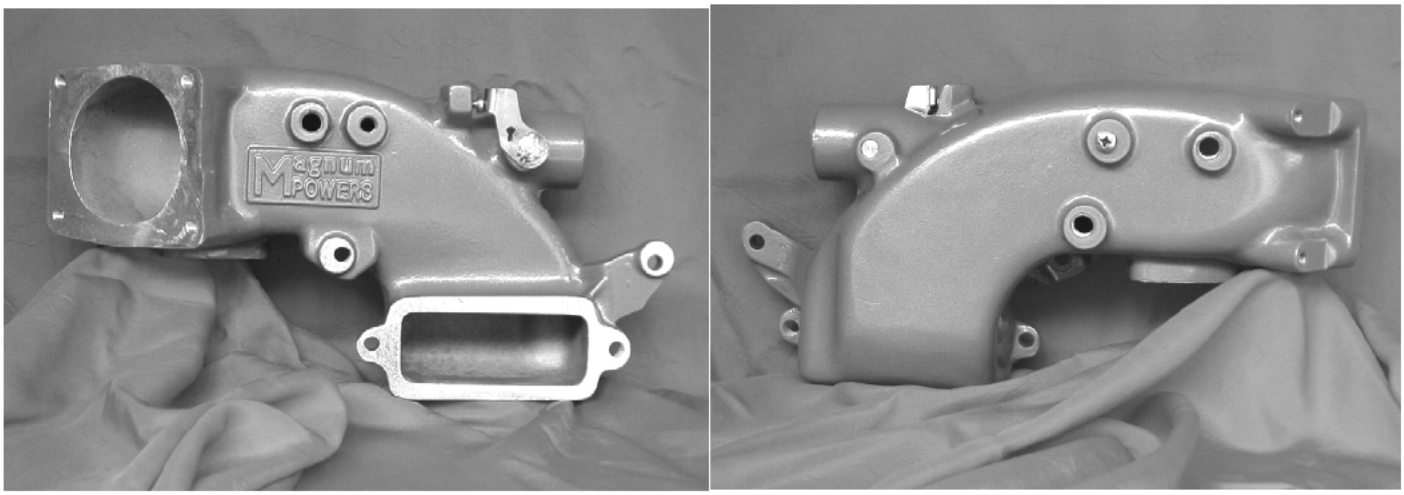
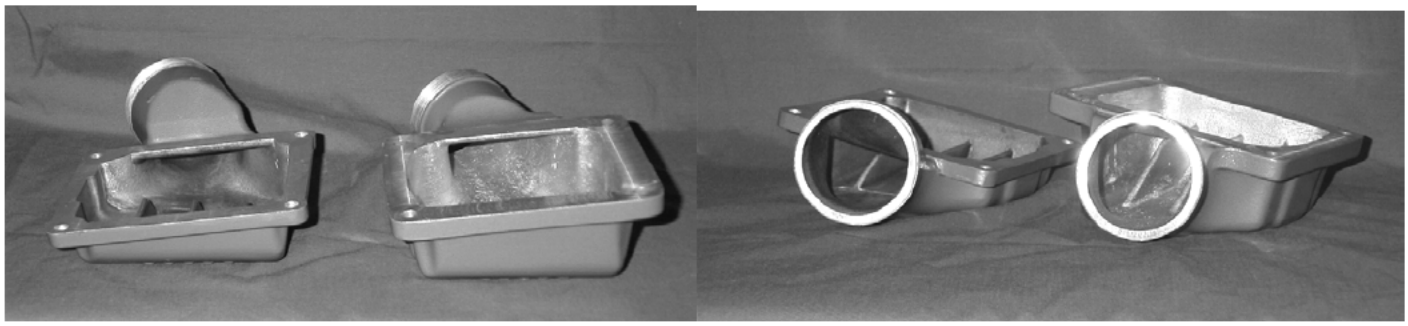


The NEW SCPI "High Flow" Inlet Plenum



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Inquire about our SCCoA member discount program and package deals

NEW WEB SITE:
www.SuperCoupePerformance.com

Spring Midwest Chapter Outing in Cincinnati Ohio

By Bill Evanoff

The Midwest chapter of the SCCoA continued its tradition of having a spring outing for its members. On May 6'th a group of 21 SC enthusiasts gathered at SCCoA national headquarters on the east side of Cincinnati Ohio for a great afternoon of fellowship. The weather was superb with temperatures in the mid 80's.

The day started around 1 p.m. as one bright red SC after another pulled into my driveway. Once the driveway had four red SCs in it, the early group declared the driveway a "red SC zone" for the afternoon. All non-red cars were to park on the street. This held true until Mark Sayers cruised up in his black SC. Despite a few guys waving him out on to the street, he simply proclaimed, "Too bad, this is where I'm staying", as he got out of his car.

The red SC contingent

Ken Frazier, a local SCCoA member, brought the last red SC (a '90) in the driveway making a total of five. Shortly after arriving, his car began leaking oil profusely from a loose oil pressure-sending unit. Unfazed, Ken hopped into his '90 and took it home. He returned about fifteen minutes later driving his mint condition '94 SC! Like many SC enthusiasts, he is fortunate to own more than one. Lucky Guy!

With the street crowded and the driveway full our group had plenty to look at and talk about amongst each other. The Midwest Super Coupe parts warehouse was also open for viewing. That's my basement for those of you who have never seen it. It is stacked to the ceiling with good used SC parts from wrecks I have come across. Many said it was cool to see all those SC parts in one spot and also to see what things looked like taken apart. You can really appreciate how well built these cars really are when you see all the individual pieces. A few guys found some parts they couldn't do without and took a few goodies home.

By 4 p.m., we were ready to hit the road for our cruise. We fired up our rides and began to caravan out into the country on our way to a cruise night. We went to a large K-Mart parking lot about thirty miles away. Well, we all fired up, except for Keith King that is. His starter or alternator was completely dead but he fortunately was parked on a hill and let the car roll forward and popped the clutch to get it going.

Our drive to the K-Mart lot was full of beautiful scenery and plenty of curvy roads. Unlike the previous cruise from my house two years earlier, no one received a traffic ticket. Even though we arrived relatively early to the

cruise-in, the outer parking lot at K-Mart was utter gridlock. I had hoped to park and display our cars together but we couldn't because all the good spots were taken. Every nice car within fifty miles was already there. We eventually gave up and went across the road. We checked out the other cars for the next hour or so before we gathered back together to find a restaurant.

SC's were parked everywhere!

We were now in Springboro Ohio, which is not exactly a booming place, so finding a good place to eat was slim pickins'. A Big Boy restaurant appeared to be our only choice and they even had a hill for Keith King to park on. I had now been stricken with an intermittent starter solenoid so I too was worried about getting my car going, but it usually performed after hitting the key a few times.

Over dinner we discussed our mechanical woes, which we decided could all be easily and inexpensively repaired. We also discussed the upcoming World Ford Challenge and the Carlisle PA shows. Most of the group had plans to attend one or the other outing and we were anxiously awaiting these huge shows.

Dinner was a gourmet delight (not really) and most importantly all the cars started for the ride home...(mainly Keith and mine were the questionable ones).

Those in attendance were:
Bill Schlabach from Canton MI
Fred Peckral from Detroit MI
Mark & Teresa Sayers from Lexington KY
Jeff Colonel from Cincinnati OH
Scott Rigsby from New Vienna OH
Mike Ostrander from Columbus OH
Kevin Varnes from Grand Rapids MI
Matt Boggs from Cincinnati OH
Ken Frazier from Milford OH
Kurt Hungerford & Fran Schenz from Columbus OH
Jim & Jackie Coulter from Olmstead Falls OH
James Fernandes from Canton MI
Pat Gruber from Williamsburg OH
George O'Neill & Rich Knott from Germantown OH
Keith King from Xenia OH
Bill and Patty Evanoff from Loveland OH

Tulsa Gets Boost

By Kurt Sunday

The Super Coupe Club of the Southwest's SC-YA in Tulsa Event was another chapter record breaker. A total of 20 Thunderbirds attended, 16 of them were Super Coupes. The highlight of the event was visiting the Tulsa International Raceway for some SC quarter mile action. Some of our trademark stunts were also very interesting. We wish to thank our Tulsa hosts, Will Priesler, Dan Cullen, and Brett "Ernie" Wilson, for taking care of the track and hotel details.

Our event schedule called for event activities to begin around 9:30 pm Friday evening at the Tulsa Super 8 Motel. Our tradition is to gather in SCCoSW member Dr. Fred's room to watch SC burnout and donut videos. It was 10:30 pm when Wildman Jonathan McEwen and I made it, one hour late, from the 780 mile drive from New Mexico. Upon arriving,

Wildman and I instantly noticed Jeramie Schall's black 92 SC in the parking lot so we announced our presence with a few engine revs and several short burnouts all around the Super 8 parking lot. I was expecting some fellow SCCoSW members to begin gathering around the parking lot after they heard our grand entrance. Disappointingly nobody came out.

Wildman Jonathan and I checked-in and assumed all of the SCCoSW members were already in Fred's room partying. We talked the Super 8 clerk into telling us what room Dr. Fred was in, and instantly drove around the building and knocked on Dr. Fred's door. There was no answer. I really started to believe our SC-YA in Tulsa event was not going to turn out. There was nobody in Fred's room and only one SC in the parking lot. I was picturing only 3 or 4 SC's showing up for the event. My heart was broken. I returned to my SC and slowly drove around the building to my room so I could just go "cry" myself to sleep.

As I sadly idled around the Super 8 building I promptly noticed a huge traffic jam of cars pulling into the motel. It was a pack of 7 SC's including Jason Marsh, Will Priesler, Rod Holtan, Ernie Wilson, Brian Slaton, Dan Cullen, Edwin McDonald, Jeramie Schall, and Dr Fred. It was a beautiful site. Jason Marsh pulled up next to me put down his window and shook my hand. The SCCoSW Boys had been out on a cruise to obtain some refreshments for the traditional trashing of Dr. Fred's room. They also spanked a few Tulsa area rice burners.

As the SCCoSW Boys were parking their SC's together along the back row of the motel parking lot, SCCoSW member Will Priesler was being scolded by the Super 8 manager for the burnout noise upon Wildman and my arrival.

SCCoSW's "Party in Fred's Room" lasted from 11pm to 3:30am. It seemed as though the group of SCCoSw Boys had been friends forever even though a lot of us had just met a few hours before. We were an extremely noisy group as we watched videotapes of SC escapades from our prior meets. There were 14 SC's lined-up in the parking lot by midnight. Around midnight we noticed an "extra" black 95 SC in the parking lot -so we went out to investigate. It was our honor to meet Vance Day from Tulsa. He had seen the event information on the SCCoA web page and found the Super 8 as soon as he got off work.

Major Glenn phoned Fred's room a little after midnight. Glenn and Brad left New Mexico at 4pm and were now in Elks City, OK for the night. They expected to arrive in Tulsa around 9:30am Saturday. Because it was so late, the group decided to assemble in the parking lot at 10am. Some of the SCCoSW Boys had been awake for about 20 hours straight.

This story depicts a very wild and good time with some powerful and fast cars available. I find it very important to mention that no person that participated in this event ever drove after drinking or risked harming bystanders. Our stunts occurred on the drag-strip, and vacant parking lots. The SCCoSW Boys are nuts not stupid.

If you have followed past SCCoSW events you know that I suffer from an evil "motel curse". At our Route 66 event I was seriously wounded in the shower. At Carlisle 99 I was almost killed when I sat on a broken toilet seat. This time I was frozen like a side of beef. The temperature in Tulsa was in the low 40's and it was very windy. My thin New Mexico blood could not handle it. After trashing Fred's room I stumbled into my Super 8 meat locker at 3:40am and quickly found the famous motel heating/cooling unit

and opened the control hatch. I could feel tons of cold air blasting through the unit and thought what idiot left the AC on? The AC wasn't on. It was the motel curse again!

The heating/cooling unit had been gutted. It was completely hollow, stripped like an abandoned SC parked overnight in front of Evanoff's house. My condition at the time did not lend itself to what I call brilliant thinking now... - but at that time TOWELS popped into my head! I pulled off the grates and stuffed the unit with every towel in the room. To make a long story short... -I was rudely awakened less than 2 hours later on my plywood Super 8 mattress wearing 7 Thunderbird t-shirts, and 3 pairs of socks by Early Bird Major Glenn's 6 a.m. phone call to tell me they were on their way from Elk City. Hind-site now tells me I should have stuffed the hollow heater with pillows. I had to fish out and dry off with a soot-covered towel.

Kurt Sunday's 92 Super Coupe

Doctor Fred Holzhauer S.C. is currently building a "killer" SC motor and his block was still at Coy Miller's. Fred was in Amarillo, Texas on business. SCCoSW member Jeramie Schall from Denver Colorado picked Fred up on his way to Tulsa. Once in Tulsa, early Friday afternoon, Jeramie damaged his front U-joint getting some second gear scratch.

After having that terrific night's sleep, I joined my fellow SCCoSW members in the parking lot around 10 a.m. It was still an awesome site to see all those SC's lined up. Jeramie's car was up on jack stands for driveshaft removal. Jeramie had a full tank of gas so it was decided to attack the driveshaft via tilting the pumpkin. Jeramie is the youngest SCCoSW member at 19 years old. If you looked up "bright young man with a promising future and the heart of a lion" in the dictionary you would find a picture of Mr. Jeramie Schall.

Jeramie Schall and his driveshaft

While everyone polished and checked their SC's, Dr. Fred and I went to the lobby and grabbed coffee for everyone. We mentioned to the Wicked Witch of the Southwest working behind the Super 8 counter that our car club would be gathering in Fred's room, number 124, again later that night and we would most likely be extremely loud. It would be a good idea NOT to put anyone in rooms 123 and 125 out of courtesy. Lucky Jason Marsh and Brian Slaton were in room 224. The Wicked Witch quickly cackled at Fred and I that those rooms were reserved and she was NOT changing anything! I felt sorry for anyone trying to sleep anywhere near room 124 that Saturday evening when the SCCoSW Boys got back from the track. Soon after Fred and I returned to the parking lot with Super 8's generous 2-ounce Dixie-Cup coffees for everyone, Glenn and Brad ripped into the parking lot.

Glenn and Brad said their hellos, then went to check in. They came back and backed their SC's up to rooms 123 and 125! It was pretty funny that the Wicked Witch of the Southwest

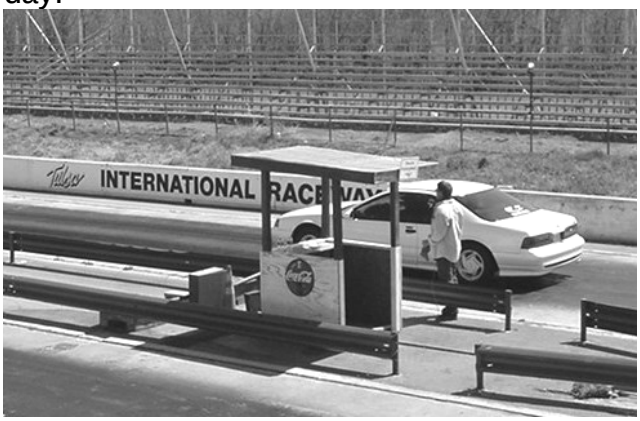
was unknowingly saving those doomed rooms for more SCCoSW guys.

At 11am Will Priesler lead the pack of SC's to a fast food restaurant near the Tulsa International Raceway. SC's filled the parking lot. As we exited the restaurant we noticed a black 95 SC turning into the shopping plaza right in front of us. All of us began jumping, yelling and whistling to attract his attention. I saw the cleanest most beautiful SC ever when Bruce Longwell pulled up. His black '95 SC 5 speed had every proven modification and was better than showroom clean. Get this... his car had 7K miles on it. Bruce's SC is king! Bruce just happened to run into us. He is a Tulsa resident that saw the event information on the web. He was on his way to the track when he ran into us. When we asked him if he was going to run his SC on the track he gave us a very quick and clear "NO WAY".

Fred Holzhauer is without a doubt the most generous man I have ever had the pleasure of meeting. He stayed behind at the Super 8 to help fix Jeramie's front u-joints. The plan was for them to meet us at the track as soon as they were done. Fred and Jeramie used a collection of tools and jack-stands brought by assorted members. There was an amazing set of tools at their disposal, Brett Wilson even brought a set of ramps.

The pack of SC's arrived at the track's still closed gate a few minutes before noon. The waiting people were entertained by a local Tulsa drop-out riding 300 foot wheelies on his superbike. It was about 50 degrees outside and the SC's were dying to get on the track.

Not one single SCCoSW member had ever been on a quarter mile track. Personally, I was going to implement the AS SEEN ON TV plan. "When those there Christmas lights turned green, floor it!" The SCCoSW members learned a lot about drag racing that day.



Brad Bishop's 95 5 speed

Turns out the left lane had some burnt-out lights so all runs were being done in the right lane. Lucky me, I was the second guy in line on the right side, right behind an orange Pinto with a killer 351 in it. I took one final look at the tread on my rear tires (knowing there wouldn't be much there when I was done with this stunt) When the Pinto went to the lights I pulled up to the burnout area and started a killer SC smoke show to "warm" up my tires. At that moment one of the track employees was yelling at me. He wanted to know which one of the Three Stooges I was. You see, I was doing my burnout before the Pinto in front of me staged and launched. That was the first thing I learned about drag racing. Second, was close your windows. Breathing tire smoke makes you dizzy. When I pulled up to the staging area I told the track dude it was my first time. He explained how to stage and told me not to wait for the green light, but go on the 3rd yellow. I did exactly what the man told me. I pulled my AOD into 1st and simply floored it on the third yellow light. Excuse my language, but holly sh*t! My SC was making a hell of a lot of noise but wasn't moving very fast. I was all over the place too - had to do a bunch of counter steering not to hit the wall. In short, I had ran a 19.01. I had gone up in smoke my very first time down the track. My SCCoSW buddies in the stands told me it looked like a forest fire going down the track. All of the

SCCoSW members that came from high altitude areas had trouble adjusting to the extra power of their cars in Tulsa. It took about 25 minutes of waiting in line to get back to the start line. The SC's were pretty scattered in the line and we didn't see much of each other while doing our runs.

Considering the amount of modifications to my SC, I was very convinced, and very determined, to run it at least in the low 15's. I'm not sure if it helped, but I added a whole bottle of octane booster to my 1/4 tank of gas. I kept the engine cool by turning it off, leaving the hood open, and the intercooler fan on whenever I was waiting in line. The temp gauge stayed on the cool side the whole time. While waiting in line for my second run, I got a few tips from the gentlemen behind me. I deflated the rear tires to 22 psi and decided to leave the transmission in Drive. I also avoided the water in the burnout area. With extreme concentration, my second run yielded a 14.7. Even greater concentration gave me a 14.3 on the next run. My times got better with each run and I eventually landed a 13.8.

If we had a "coolest dude award" Mr. Vance Day, from Tulsa, would have received it. I was back in line for my third run, when I noticed a guy in a suit. It was Vance. He was dressed like he was going on a date with Miss America, not for running the quarter mile. Cool Dude Vance came to the track on his lunch hour, ran a 15.2 in his black '95 5-speed then went back to work.
Later in the day, we noticed another red '92 SC in the line. It was Terry from Muskogee, OK. He was another catch from the web site. Checking his VIN we noted that his SC most likely came off the assembly line right behind mine. (Give a few LX's in between). Who would have imagined those 2 SC's would be that close to each other ever again?

The SCCoSW Boys

It was really hard to pay attention to, or share information with the rest of the SC drivers until the left lane finally opened. The SC's began to pair-up for some great action. We got to see Major Glenn take out Wildman, then Wildman turned around and took out Brad. Jason Marsh turned in an impressive 14.9 @ 95mph with a 2.7 - 60 feet. Jason's SC would have really made a statement with some slicks. Rod Holtan kicked-butt in his 100% stock 90 AOD with a 15.764 @ 87.696 MPH. We had two late model 4.6 Thunderbirds even run in the mid 15's. You can download MPEG's of most of this quarter mile action from the Downloads section on the SCCoSW website.

After a few more runs down the track, the SCCoSW Boys called it a day. We lined up our SC's in a large grassy field at the entrance of the racetrack for some group pictures. It was now time for the traditional and unexpected Wildman Jonathan Show! Jonathan lost his mind and turned his SC into a tractor as we were leaving. He did about 10 donuts throwing grass everywhere. Even on the interstate several miles later Jonathan's SC would drop clumps of grass and mud from it's wheel wells.

When we returned to our beloved Super 8, Jeramie and Fred had just finished reassembling Jeramie's SC. They had completely missed out on the track activities. The good news was Jeramie's SC was fixed and ready for his long trip back to Denver. Again, I need to mention the great, unselfish character of Fred for staying and helping Jeramie all day long. We started to miss Wildman Jonathan and his supercharged tractor. He soon pulled-in sporting a freshly washed Super Coupe.

The biggest pain in the ass for Will Priesler, must have been leading 17 cars to a restaurant about 12 miles away through heavy traffic when almost everyone in the group was a tourist. There were lost SCCoSW Boys all over Tulsa. Thanks to Dan, Jason, Will and their cellular phones, we all made it to Applebee's for dinner. SC's filled the back parking lot. While waiting for a table, we noticed a black '93 SC in the front parking lot with Kansas plates. A few of the bolder SCCoSW Boys had the owner paged. The poor guy came to the front of the restaurant surely thinking someone had hit his car in the parking lot. To his surprise, 20 people wearing white SCCoSW shirts, walked him to the back parking lot and showed him 17 other SC's. The look on his face (I think his name was Kevin) was priceless. Kevin was not able to join us due to other plans. Personally, the only thing that would have kept me from going nuts with 17 other SC's would have been a sure-thing date with a beautiful woman.

Vance Day's 1995 Super Coupe

We hit Fred's room hard again Saturday night. Brett "Ernie" Wilson's girlfriend, Katrina, showed up with a very clean and awesome Saleen Mustang. This time we watched and analyzed videotape from our day at the track. A new SCCoSW member, Brian Slaton, told us a story about how his Dad ended up getting himself an SC. It's a great story and I recommended that he write an article for an upcoming Chargin' Thunder. (so... I'm not going to tell it here).

We had our traditional burnout and donut contest scheduled for early Sunday morning. Major Glenn did some recon Saturday night and found a vacant Wal-Mart parking lot. It was the perfect place. The SCCoSW Boys actually spared Fred's room and went to sleep early Saturday night.

At 7:30 a.m., Early Bird Major Glenn, led the wide-eyed SCCoSW boys to the covert Wal-Mart. We lined our SC's up along the side of the parking lot and took turns putting on super smoke shows. Glenn went first, cranking out several dounts and tons of smoke. There was enough tire smoke billowing over the Wal-Mart building to make it look like the place was on fire. Jason Marsh put down an incredible amount of tire tread in one of the coolest burnouts I've ever seen. Jason's SC did a real cool and distinct 1-2 shift during his burnout.

I seriously started to worry about someone calling the fire department when Jeramie was out there. The kid had missed the track outing and just had a ton of SC abusing left in his system. Jeramie did a series of unbelievable burnouts and donuts. Not to be out done, Vance Day delivered a smoke and driving show that impressed everyone and won him the Best Driver Award. Rod Holtan, Ernie Wilson and Donut Dan Cullen also did some great SC acrobatics. Dan even had his wife-to-be in his SC with a video camera for a few loops. We are trying to talk Dan into making his wedding to Amy an official

SCCoSW Event. Brad Bishop and I did not participate in the burnout contest. We felt we hammered our SC's pretty good at the track. Let me try to explain how awesome these SC smoke shows are. There were times when I would look up at all the smoke in the air and have that overwhelming "oh my God" feeling. Some of the Tulsa locals passing by the Wal-Mart even pulled over to watch the SCCoSW nuts. I still laugh out loud every time I remember that Sunday morning. Words can't explain how lucky the SCCoSW Boys have been during these crazy burnout contests. Although we were in an abandoned parking lot, if a police officer happened to be passing by and saw all that smoke and craziness I think he would have just pulled up and simply shot all of us.

You can see most of these tire-killing burnouts on the SCCoSW website.

I know us SC guys don't really appreciate the 4.6 engine, but a TCCoA member named Eric, showed up in a red '97 Thunderbird 4.6 and did a few donuts with us. Eric had put a beautifully detailed '99 Cobra engine in his Thunderbird and it is definitely worthy of mention.

When the SCCoSW braves were done sending smoke signals, Chief Glenn lead us back to the beloved Super 8 to gather our belongings and say goodbye to the Wicked Witch of the Southwest and begin our planned trek to Oklahoma City. Some members that lived east of Tulsa said their good-byes here. I think about 9 SC's made the 100-mile trip to Oklahoma City. We gave the Wicked Witch of the Southwest a beautiful 17 SC burnout salute when we left our beloved Super 8.

Jason Marsh led the pack to his hometown for breakfast and awards. Dr. Fred made the cruise with me. As soon as we were out of Tulsa city limits, the pack came upon a red '95 Mustang Cobra. As Jason passed the Cobra the SC pack cruising speed increased until all of us had passed him. Even though several of the SC's challenged the Cobra while passing it, the Cobra driver never totally got on it for a true race. The pack of SC's would pass the Cobra at about 85 to 90MPH, then the Cobra would run by the cruising SC's at about 100MPH then slow down again. This cat and mouse game obviously pissed Major Glenn off, as it did me. Finally on one of the Cobra's 100MPH passing runs Major Glenn came screaming from behind the pack closing on the Cobra's rear end like a piano out a 3 story window. After touching his brakes and scaring the living sh*t out of all that were watching, the Cobra finally decided to go for it! Glenn stayed on that Cobra's rear as their speed went over 130. The Major then passed that little mommy's boy Mustang, and yet taught another Cobra owner not to underestimate the Thunderbird Super Coupe, especially one driven by a SCCoSW member during his mid-life crisis. (We have videotape of this and will get it posted to our web site soon)

The SCCoSW Boys made it to OKC and had a great breakfast. SCCoSW Award winners and track times are listed below.

Now it's time to get personal... Since I bought my '92 Super Coupe, owning, restoring, and modifying it has become one of the most passionate endeavors of my life. Belonging to an organization like the SCCoA that contains people that have the same passion for the car is great. Most important, I have made and met some super friends via the SCCoA. The SCCoSW Boys are like my family. I will surely remain a friend with people like Major Glenn Huber, Dr. Fred Holzhauer and Mr. Bill Ball for the rest of my life.

We are planning two more events this year. Tucumcari, New Mexico in July and Denver, Colorado in late September. Everyone is welcome. Please check our web site for

details. Our web site can be found under "Chapters" on SCCoA.com or at www.zianet.com/ksunday/SC/SC.HTML

SCCoSW SC-YA in Tulsa Attendees:

Will Priesler, Tulsa, OK
Dan and Amy Cullen, Tulsa, OK
Fred Holzhauer, Edgewater, CO
Jeramie Schall, Denver, CO
Rod Holtan, Humboldt, Iowa
Jason Marsh, Oklahoma City, OK
Brian Slaton, Mississippi
Brett 'Ernie' Wilson, Tulsa, OK
Ernie's girlfriend Katrina, Tulsa, OK
Bruce Longwell, Tulsa, OK
Terry Muskogee, OK
Vance Day, Tulsa, OK (now in Florida)
Jonathan "Q" McEwen, Holloman AFB, NM
Brad Bishop, Las Cruces, NM
Glenn Huber, Las Cruces, NM
Kurt Sunday, Las Cruces, NM
Edwin McDonald, Owasso, OK
Eric, Tulsa, OK TCCoA Member

SCCoSW SC-YA in Tulsa 2000 Awards

Best of Show • Brad Bishop
Best Stock SC • Rod Holtan
Best Suspension Mods • Jason Marsh
Longest Distance Traveled • Jeramie Schall
Best Sound System • Terry
The Wildman Award • Jonathan McEwen
Fastest Quarter Mile • Kurt Sunday
Donut King • Jeramie Schall
Best Improved SC • Jonathan McEwen
Best Modifications • Kurt Sunday
Most Modifications • Kurt Sunday
Most Burnouts • Jonathan EcEwen
Best Burnout • Jeramie Schall
Best Intake System • Brad Bishop
Best Exhaust System • Glenn Huber
Best Driving • Vance Day
Cleanest Super Coupe • Brett Wilson
Honorary SC PHD • Dr. Fred Holzhauer
Best SC Wheels • Brian Slaton
Best Host • Will Priesler
Best Cameraman • CameraDan Cullen

Check out full color pictures of these shirts at:

http://members.truepath.com/xs_tork/tshirts.html

They make perfect Birthday or Fathers Day Gifts!

SCCoA T-Shirt SHOP: Check out the new "Club Logo" shirts at http://members.truepath.com/xs_tork/tshirts.html or call Patty and I to order at 513-697-6501 $15 + $3 shipping. XXL sizes are $17 + $3 shp.

S.C.P.I. Header Installation How-To

(With minimal knuckle bleeding)

By Bill Evanoff
Assisted By Ken Seegers

When I first considered buying a Super Coupe back in the fall of 1988 I was in love with its fantastic good looks and powerful acceleration, but most of all I was awed by its technical attributes. Webster defines awe as, "a mixed feeling of reverence, fear, and wonder, caused by something sublime".

Yup, "awe" is definitely what I was feeling. I was in such awe, that I waited nearly a whole year before I bought my SC just to see if all the '89s blew up in the hands of their owners. Well, that did not happen, so I special ordered a '90 when they first came out. I picked up my beautiful bright red Bird on October 28'Th 1990. I did not leave the dealership before I plunked down $600 extra for a 6-year extended service plan (ESP). I was leery about ever having to work on that unruly cluster of intercooler plumbing, wiring harnesses, and coolant/vacuum/fuel lines lying under my shiny red hood.

Let's warp speed forward ten years and now I actually consider the SC relatively easy (well, how about not too hard) to work on. The intimidation factor is gone, thanks to Bill Hull's guidance, and I realize what a fool I was to have spent my hard earned money on a never used ESP. My car has run flawlessly and it is now pumping out in excess of 50% more HP and 33% more torque than stock thanks to numerous modifications including a beautiful set of Jet-Hot coated Super Coupe Performance Inc. (SCPI) headers. These headers were part of a major engine improvement project that my SC underwent during January and February of 1999. I believe they are crucial to any SC engine that is trying hard to make serious power. Without them, all the other modifications you may install will not do it justice because your engine will still be unsuccessfully trying to exhale out two puny little stock exhaust manifold openings.

Super Coupe header options are very limited because demand is relatively low compared to other popular Ford vehicles. Therefore, prices are not what one would call cheap, but they are affordable. Ten years ago, JBA apparently made a few sets of SC headers on a one-off basis for well-to-do individuals and the prices were $1200 or more. So don't feel too bad about spending $700 today. Bill Hull bought a set of these JBA headers second hand and these have been used as a pattern, with improvements such as a bigger collector opening for many years now. SCCoA members are reminded of the SCPI preferred pricing discount program if they wish to choose one of their header options.

When I began attending the SCCoA outings back in '96 and '97, only one or two guys had headers. As time went on, a few more purchased and installed them. When I would ask a lucky header owner how the installation went, they would usually start twitching, laugh nervously, or cringe and say something like, "Oh brother, I'll never do THAT again". As you can imagine this did not bolster my confidence or give me a real good feeling about doing this job myself. But I was persistent and figured it really couldn't be that bad. I kept asking people, and the "Oh Brother" comments, nervous twitching, and laughing kept coming back at me until one day I spoke to Ken Seegers. Ken had installed a set himself and, of-course, he really struggled through the procedure. Due to an exhaust leak he was forced to take them off again because a weld had apparently broken. While reinstalling he found a few tricks and short cuts which sped up the procedure. The exhaust leak persisted and Ken had to again remove and replace his headers a third time with the problem finally resolved. By now, we should all be feeling sorry for Ken, but he again picked up some time saving ideas on how this job should be

done. Ken should now be considered the all-time on-off-on-off-on-off record holder and the foremost expert on header installation. Before I installed my headers, I was fortunate

to talk to him and receive his wealth of bloody knuckled experience. Ken was consulted for this article, has proofread it for accuracy and has also made a few statements where his overall procedure varied from mine.

Getting Started:

Here is the procedure as best I am able to relay it as I eventually performed the installation myself on my own car. While doing this job, it is also a terrific time to change your spark plugs, plug wires, and oxygen sensors. If your plugs have 40K miles or anything close to that…change them. If your wires and Oxygen sensors are more than a few years old…change them. I personally recommend staying with the double platinum Motor Craft plugs (Part #AWSF 34PP). I like Magnecore plug wires, and Bosch (or any other name brand) O2 sensor. This article assumes you will be changing these items.

I want to make a few comments about what fasteners you will be using to bolt on your new headers. I had bolts provided by SCPI, but personally felt they were too short as they did not engage into the head but a few threads. I decided to go with a longer bolt with an integral washer that was 33mm long, which included a dog point for easy thread starting. The thread size is M8 x 1.25 and I highly suggest you find this size with a 10mm head vs. the standard 13mm head size. This will allow you to use smaller ratchets and wrenches while tightening things down. There are many options regarding fasteners and perhaps the current SCPI bolts are now longer. Stage 8, a well-known aftermarket fastener company, also makes dedicated header bolts that will not loosen because of their cleaver design. You may consider these also.

Place a large box of Band-Aids near your toolbox and consider placing your cordless phone nearby with 911 on the #1 preset. This will shorten the time necessary bandaging bloody knuckles and get the fire truck there quickly if you get so frustrated while doing this job you decide to torch your SC. As the title of this article states, I'm sure knuckle bleeding will be minimized and frustration shouldn't be a factor. As far as time duration goes, I would definitely say 8 hours at a minimum if you are laying on your back and you have no experience working on your SC. If you pay someone to do it, they may finish it in four hours assuming they are a professional and have a lift.

Having access to a lift is very helpful, but not necessary as I did my install on my back. Jack and <u>safely</u> support the front end of your car. Raising the rear wheels may also prove beneficial when it comes time to remove the catalytic converter assembly.

Remove the negative battery cable. Crawl underneath and take the bolt off the steering column stalk that sits just above the flexible rubber coupling in the engine compartment. This coupling is a few inches above the

Compare the collector inside diameters!

steering rack and can be easily reached from under the car. Disconnect the shaft from the coupling and push the steering shaft upward

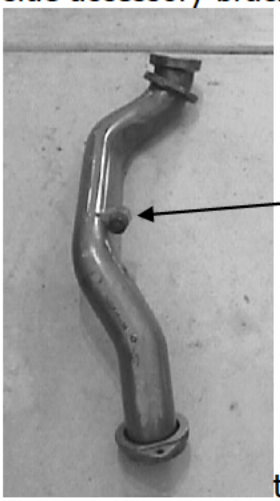
towards the firewall. This will really open up the driver's side for more hand room. Then disconnect both your oxygen sensors electrically and unscrew them. Use some heat from a torch if necessary. Heat the metal around each sensor, not the sensor itself. You may want to try some penetrating oil ahead of time to loosen the two sensors up.

If your car has exhaust gas recirculation (EGR), then disconnect the pipe that goes into the passenger side exhaust manifold. Due to years of heating/cooling cycles, this tube will likely be brittle. Use extreme care unscrewing it or it will break requiring the purchase of a new one. Frankly, chances are good that you will break it off, so be gentle with it. Put some penetrating oil on it a few hours prior to working the fitting as this will help improve your chances of getting it out successfully. I'm sorry to say that if your car has EGR, then your installation job is a little more complicated as you will see as we go on.

Remove your catalytic converter assembly. This requires removing two bolts at three different locations…each down tube, and at the ball/flange joint that connects to the cat-back exhaust pipe. Once the cat assembly is loose, you can slide it rearward off the transmission mounts. You may find it beneficial to disconnect one or two of the cat-back exhaust rubber hangers to allow the cat-back exhaust pipe enough room to move around so it allows the cat assembly to be removed easily.

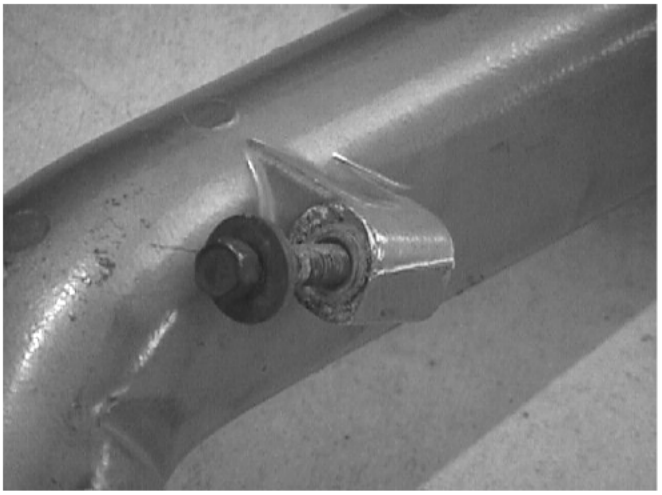
Take each plug wire boot off its spark plug and feed the wire up into the engine compartment. Make a mental note of the routing of each wire. If you need to, make a sketch of the routing. Do not take the wires off at this time. Leave them attached to the coil pack. Access to the plugs from the top of the engine on the '89 to '92 cars is very limited on the driver's side but the plugs are quite accessible from under the car. I personally recommend you get all the plug wires from underneath the car after the downtubes have been removed. Now remove all the spark plugs from under the car also. Check them visually for any signs of potential problems.

Now it is time to go on top of the engine again and work on pulling forward the driver's side accessory bracket. Loosen and set aside



Hard to reach lower IC bolt. You cannot see this bolt, you will have to feel for it. Note…it has a 13mm head

the longest accessory belt using the proper tensioner to relieve the belt tension. Take off the upper intercooler tube and the bolts for the lower IC tube from the

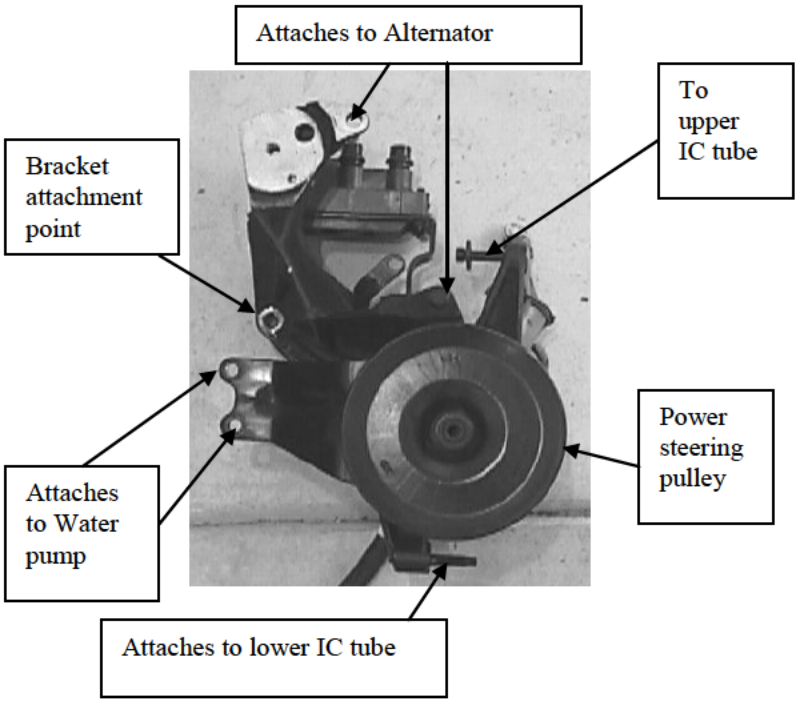


Close up of hard to reach lower IC bolt

intercooler. To remove the upper IC tube collar nut properly, you will need either the special Ford tool for this job or use a generic spanner wrench. I use the latter. Also disconnect the bolts which hold the rear part of the lower IC tube from the return plenum. There are also two additional bolts which go

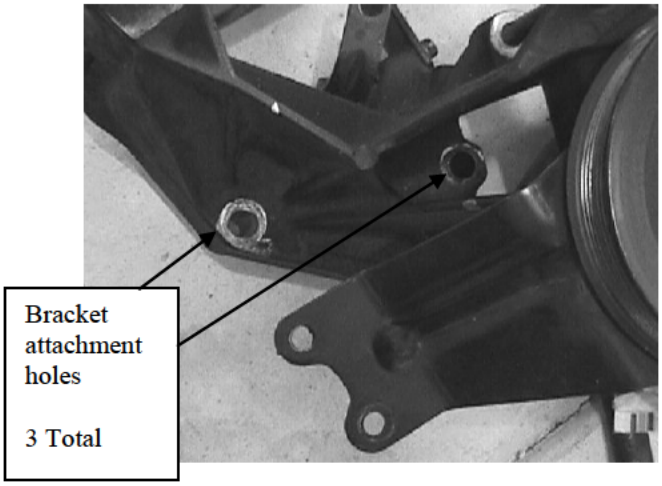
into the lower IC tube. One is behind the power steering reservoir and the other is slightly higher up the tube. This one is difficult to even see and can barely be reached from the underside of the car. When it came time for reassembly on my car, I left this bolt out. I see no reason why you need four locations on the lower IC tube to hold it properly. Three spots over its length are plenty.

You will not be removing the lower IC tube, but you will want it to freely move about. To remove it will require further removal of the power steering pump, which is not necessary. We are just making room to get to all the header bolts a little more easily.
Note: Ken told to me that he actually did remove all these items to make it that much easier to access the header bolts.



Two bolts that attach to the water pump and three bolts that go into the block and head hold the left side accessory bracket in place. Loosen all these bolts but leave them all attached by a few threads. I can tell you now, that the lowest accessory bracket bolt is a bear to get loose. Take your time and use a small ratchet going from the bottom upward to get access to it.

After all the bolts are loose and the bracket is free, pull the entire thing forward about two inches. DO NOT pull it off the studs or long bolts that are still hanging by a few threads. This will now really open up the driver's side for working on the old manifold and new header.



The passenger side is fairly open after you remove the downtubes. I did nothing special to this side as I was able to freely reach all the stock bolts from under the car and also install all the new header bolts from underneath. The driver's side requires special attention because of the intercooler tubing. Nothing special is required to access the passenger side.

Crawl back under the car and begin taking off the cast iron exhaust manifold bolts and studs. I was surprised that most of the bolts came off relatively easy. A stubby ratchet really comes in handy here. An occasional assist from a length of pipe over top your ratchet handle for more leverage will give the proper motivation on any stubborn bolts. I know pipe extensions are not recommended for stubby ratchets but that's why I buy Craftsman ratchets. If you break one, they are guaranteed for life. For your information, no tools were sacrificed during my installation.

You will find that several of the bolts per side actually have a stud and a nut attached to them to hold the oil dipstick bracket and assorted coolant line brackets. Remove the nuts first, and then use a deep well socket to remove the studded bolt. Once the oil dipstick tube bracket is free, you will want to remove the dip stick tube entirely.

Because the new header will have a solid flange that mates to the cylinder head (not a separated one like the cast unit), the tube must come out. Before you get to this step I would recommend you douse the spot where the tube enters the block with some penetrating oil. By the time you are ready to remove it, the oil will have had time to work. Use a stubby flat bladed screwdriver and tap upward on the lower lip that is present on the tube. It may take a few forceful taps, but the tube will come out gradually. Take your time and work the screwdriver and hammer carefully, as you don't want to dent or damage the dipstick.

Removing the last bolt per side can be a bit tricky, as you definitely do not want the heavy cast iron manifolds falling in your face. I want everyone to finish this job with all the teeth they started it with. The passenger side will pull right out and if you have separated the steering shaft, the drivers' side will also. While I was working on my car, I originally did not separate the steering shaft and found absolutely no way to get the drivers side manifold out with the shaft in place.

With your stock manifolds off the car, you are halfway home. Now you can get your hands on your pretty new headers and hoist them in place to do a test fit to see if they clear everything as they are supposed to. Place the Fel-Pro gasket in place and use two bolts to hold them in place loosely, then screw in the four remaining bolts just a few threads to make sure the header flange was drilled properly and all six bolts fit as desired. I recommend this, as bending pipe to make a header is not exactly the most precise processes known to man. Most headers will fit fine, but there is an opportunity for mismatch or misalignment due to the welding process they are put together with. Whenever something is welded it is subject to extremely high heat that may warp the bent tubing and potentially warp even the header flange that mates to the cylinder head.

This actually happened on the set I received. One of my header flanges was not flat at all and had about 1/8 of an inch bow to it. I could put a straight edge on the flange and see the area that wasn't flat relative to he rest of the surface. I took the header to a local machine shop and had them mill the flange flat again. If I had not done this, I was guaranteed to have an exhaust leak. Thankfully, they turned out fine after they were reworked.

Assuming everything on yours looks good and test fits well, continue threading in all the bolts using a combination of sockets attached to a stubby ratchet, different length extensions and open-end wrenches. Not all the bolts can be reached directly with a socket due to the way some of the pipes bend so you will need a variety of common hand tools but nothing out of the ordinary is needed.

You will notice that I have not mentioned anything about reattaching the oil dipstick tube or the coolant lines which both have brackets that originally attached to cast iron manifold studs/bolts. To simplify my life, I did not reattach any of these brackets. I bent them out of the way to give my hands more room to work and have had no problems with any of the coolant lines drooping. When I reinstalled my oil dipstick tube the tight fit it had relative to the hole in the engine block has proven sufficient to keep it from moving. I do not jerk my dipstick out whenever I check my oil level. I gently remove it so as

not to cause the tube to pull outwards. I have to say it is in there pretty snug and doesn't worry me. I'll leave it up to you if you want to try to reattach any of these brackets, but I can assure you it will be a pain as the header bolts don't make it easy to do so. Note: Ken did reconnect all his brackets as they were intended, so it is possible to do so if you choose.

It will be impossible to get a torque wrench up inside this area to get all the bolts torqued properly, so get them as tight as you can with your hands. The heating and cooling cycles may loosen them in the future if they are not properly snugged down.

Once the headers are in place, you will now install your new Motorcraft spark plugs. Put a dab of anti-seize material on the treads so they come out of the aluminum head easily in the future. The plugs should be gapped to .052 - .056". Place the plug wires back onto the plugs. Use the diagram you created earlier to insure you will not cross any wires.

The EGR Problem:

I'm going to stop here and discuss the problems related to cars that have EGR. To my knowledge, most '89 and '90 5-speed cars have EGR as well as the '94 and '95 cars. The EGR tubes used on these two groups are different and not interchangeable. The EGR tube goes from the EGR valve (located behind the supercharger inlet plenum) to the passenger side manifold. There are threaded fittings at both ends and can be stubborn to get off.

Now that your passenger side header is in place you will need to hook it up to the fitting on the header. One of the major stumbling blocks on my headers was that this fitting was not present. Apparently the manufacturer for SCPI did not include the fitting on all their headers because the EGR fitting was rarely used, as most SC's do not have EGR. Therefore, I had to take the fitting that was provide with the headers and place it up where I thought it should go and mark the location on my header. This was rather difficult, as the header collector area in the particular spot that it goes is not flat at all relative to the EGR tube. I did my best guess at marking the header and then proceeded to take it off the car. I then took it to a local shop and had them weld it to the header and drill a hole through the header for gasses to pass upwards into the tube.

It was with great trepidation that I reinstalled the header and attempted to bolt up the EGR tubes female fastener to the male header fitting. Like a hot knife through butter, the two mated up perfectly and I breathed a sigh of relief. I honestly didn't expect it to go together, but my superior custom fabrication skills were showing through! (Ha…Yea Right!).

Bill Hull has assured me that this EGR fitting is now available already installed on the current header design. For anyone ordering headers, please be aware if your SC has EGR or not, so you can get the proper fitting on the passenger side if you need it. You don't want to have to go through what I did as it really slows you down and you have to take the passenger side off and put it back on again to get the EGR fitting location proper relative to the tube. Plus the trip to a welding shop takes more time.

Wrapping It Up:

Once the headers, plugs, and wires are all in place you can go about moving everything back in place that you pulled forward or repositioned to make this job easier. The steering column needs to be reconnected and the oil dipstick tube reinstalled. The upper and lower IC tubes are reattached and sealed to the intercooler and with the proper teflon tape to eliminate vacuum leaks. The upper IC tube seals to the supercharger top (often referred to as the supercharger outlet adapter) with the same teflon tape. Use a

little antiseize compound on the threads to facilitate future removal. The drivers' side accessory bracket is moved rearward until it rests up against the block and head and all the bolts are used to hold it in place. The accessory belts are installed. Replace the belts if they shown signs of cracking or are older than three years old.

Fitting The Exhaust:

Now that the new headers are in place, you will need to install your new downtubes and the rest of your exhaust system. Since the

Drivers side stock downtube & converter. Do 90 degree turns flow well? I don't think so!

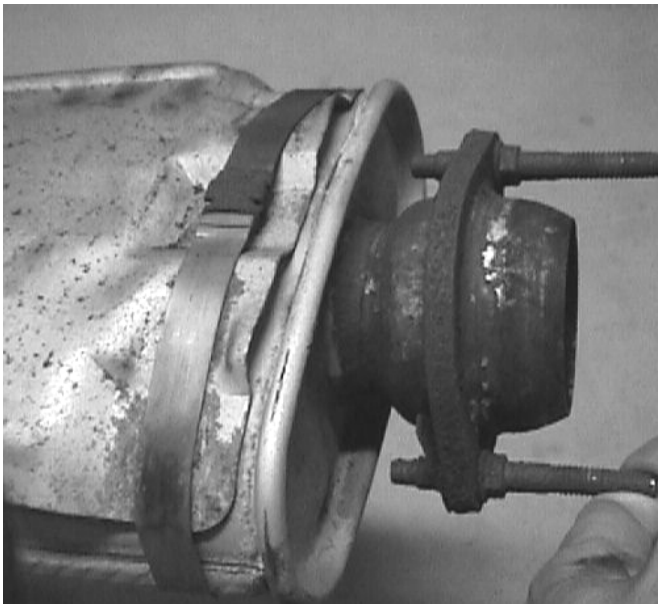
collector opening on the headers is so much larger than the stock manifolds you are forced into replacing the stock downtubes and catalytic converter assembly with larger diameter pipes. You might as well install high flow cats while you're at it as I believe the whole country will be subjected to emissions testing before too long. These new cats are very low restriction and you will be prepared when testing comes your way (if it is not required already).

I purchased the SCPI exhaust with a 3" center section, a MagnaFlow resonator, and have two Walker DynoMax Super Turbo mufflers. The system is relatively quiet and has no drone to it at all. It is definitely louder than the stock system but the sound is very pleasant and sporty.

You may laugh at how I went about getting my complete exhaust installed, but it worked for me. I made arrangements with an exhaust shop about five miles from my house to have it installed on a Saturday morning. A few nights before I just bolted up my downtubes (which included cats) to the header collector. I also had to install my new O2 sensors at the same time as one of them went into the downtube. The other went into the header itself. The rest of the unassembled exhaust was loaded into my trunk.

On Saturday morning I fired up my SC, that had a very loud roaring note to it, and simply drove to the shop. I'm sure I woke up a few neighbors with my ripping exhaust note but it was fun driving it for those five miles. Any farther than that would have necessitated ear plugs.

After the shop welded all the pieces together I anxiously turned the key to hear what my exhaust sounded like and I began smiling right away. As I'm sure many of you know, getting a SC to sound good is very difficult. They will never sound like a V8, but I do recommend the SCPI system or one you may manufacture yourself that emulates it. I realize exhaust noise is a very individualistic thing and everyone has their own idea of what their car should sound like. I do recommend keeping a resonator in the system to eliminate resonance and also keeping the raspy sound out which is so typical of the riceboy cars with their ridiculous looking coffee can type mufflers.



Outlet of the stock resonator has a inside diameter of only 2.050 inches! Note how the pipe is necked down as it exits the resonator.

Results:

So what should one expect after they install header? That answer that is simply, "it depends upon what other mods you have made".

If you have done the typical intake mods, then your car should now really be waken up. If you are still sucking air through the smallish stock mass air flow sensor, inlet tube, throttle body, and supercharger outlet adapter then you will still feel an improvement, but less so. The rest of your exhaust also has a large effect upon performance as well. Bigger is not always best, but I do recommend at least a 3" single center section for best flow.

I was fortunate to do many things to my car at the same time as I installed the headers and 3" SCPI complete exhaust. I put on bigger injectors, a "S" model supercharger, 190 lph fuel pump and changed my fuel tank to the 1992 or newer style.

After making all these changes, the difference was phenomenal! The car was actually quite scary to drive at first and I made sure I had plenty of room for it to run before turning it loose around town. Prior to the changes, my SC ran the quarter mile in 14.9 seconds. After all these changes, the time was reduced to 14.1 seconds. I believe the car easily has more to give if I can ever get proper traction while launching the car in the first 60 feet of a race.

From my experience doing this installation, I would heartily recommend it to anyone with the time and ambition to get it done. The results will be extremely satisfying and you will learn a lot about working on your car to boot. I promise you that you will not repeat the phrase, "Oh brother, I'll never do THAT again", when asked out your own header installation.

Doug William (standing) and Kurt Kriesz under the SCCoA canopy

The Ultimate Daily Driver

By Charles Markman

I have long been a fan of the daily driven, stupid fast, road-trip-capable vehicle. This is where one of those "True Street" Mustangs pops into my mind. But, I think that we all know by now that a prepped 5.0 or 4.6 Mustang will blow our doors off at the local ¼ mile, especially if you can hear that tell tale whine of a centrifugal blower. However, if we prep our SC's properly, it is not even a contest as soon as that road is no longer straight! There is something addictive about passing that same Mustang on the outside line at your favorite two lane on ramp, with out even making the tires talk to you!

Eventually, this concept will lead me towards my goal of running the "One Lap of America." That event is just calling my name. Driving all across this beautiful country from racetrack to racetrack. It is basically the ultimate road trip in my eyes. There is no way that I will win competing against Raptors, Corvettes and Vipers, but it should be a great time! I may be two years away from this goal, but the car is getting closer all the time!

To be able to compete in an event like this your ride must define the word reliable. To me this means using as many OE parts as possible. Trust me, there is nothing worse that being stranded by the side of the road and not being able to buy your parts at the local NAPA or Ford dealer. To this end, I am using many OE Ford parts on my SC, some have been modified, but most of the modifications are cosmetic. Such as the black powder coating on my '98 Cobra rims, it looks good but it is not necessary.

As nice as it is to be able to pick up you favorite parts at the local speed emporium, I still like to make my own parts. Especially when I am told that it can't be done. All of this is just in my nature and was enhanced by my training as a Mechanical Engineer. I love being able to say that I designed and built that! On my '92 I have many parts that I designed and built myself.

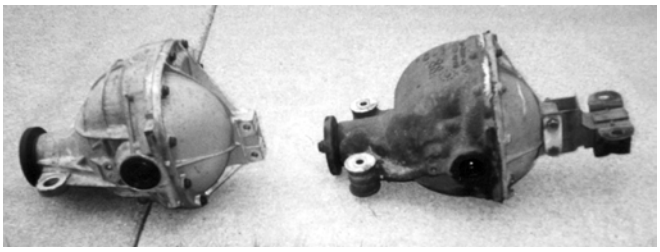
The most obvious part under the hood is the fresh air intake system, that was constructed from mandrel bent truck exhaust pipe. It was also rather economical, I spent about $50 on the whole system and it fits like a glove. My gauge

pod is also rather interesting, when I started working on my SC nothing was available, so I spent some time at the local speed emporium trying to figure out what would work for me. As it turns out, the one I am using was designed for a Camaro, go figure. Obviously, now you can buy a direct fit pod for the T-birds. I am using the FMS 65mm TB for a 94-5 5.0 Mustang with a revised linkage. But when I change to a 95 'S' model blower, I will be upgrading to a 70mm unit.

Under the hood

The most un-obvious modification that I have made is the relocation of my battery. It is not rare to see a battery relocated to the trunk of a vehicle. However when this is done, you must have a battery shut off switch to be NHRA legal, this means drilling a hole in the trunk for the shutoff lever. To avoid this problem, my battery is located *under* the trunk floor. The key thing that allows me to do this is the Optima spiral cell sealed battery. Mine is installed up side down in the spot where the passenger's side muffler used to be. This location allows for the best spot to increase the traction as well as to equalize the balance of the car. To keep road grime and used rubber off of the battery, it is installed in a Moroso battery box. My car has been in this configuration for over two years and I have not had any failures whatsoever. It fires every time I ask it to, even in the middle of a Michigan winter. Naturally, this does not allow me to use a conventional exhaust system. Currently, I am using a singe pipe exhaust system with the Borla tip located under the "ND" in "THUNDERBIRD SC."

When you turn her up side down the first thing that you will probably notice is the big blue box containing the battery. Just in front of that is the Lincoln MK VIII aluminum rear lower



Lincoln rear housing on the left

control arms and differential. Holding up the rear suspension is a revised set of Air Lift air bags. Connecting the Torsen equipped MK VIII differential to the M5R2 is a new Carbon Fiber drive shaft, which can be viewed in the accompanying pictures along with the aluminum differential. The final drive ratio I have selected is 3.27:1. This selection increases my rate of acceleration as well as maintaining the amazing top speed. The Torsen eliminates most of the power on oversteer, as well as eliminating a large portion of the wheel hop. Between those two things, most of the bad manners of the SC are eliminated.

Stock shaft on the top vs. carbon fiber unit on the bottom

Moving forward, you won't be able to see the Centerforce Dual friction clutch stuffed in the bellhousing, but it's in there. But, at a
full 13", you probably will not miss the Mustang Cobra Brakes. Remember that there is no such thing as to much brake! Especially on the One Lap.

Putting her back on her feet, and lifting the hood will see the air intake system. This leads into the C&L 73mm mass air meter and FMS throttle body and into the blower and back out through a SCPI supercharger outlet. Then we get to the intercooler, which is equipped with a fan and a special misting unit to reduce inlet temps. The air then travels into the bone stock 94,XXX mile engine after being combined with the necessary fuel by a set of 38lb/hr Lucas Injectors. Granted the engine is held together by a set of SCPI head studs and sealed by upgraded Fel-pro gaskets. But at this mileage, that was almost a given. After the engine is done with the mixture, it is exhausted through a set of SCPI headers and then out to the atmosphere in the aforementioned single pipe system. To minimize parasitic losses, I am using a set of Auto Specialties underdrive pulleys and to maximize power I installed a March overdrive pulley for the supercharger.

My best track time to date is 14.63 seconds at 97 mph. This was with the stock 2.73 gears, a worn out traction-lok, stock driveshaft, no misting system, and run on my street BFG Comp T/A ZR4's though. I have also been to the DynoJet where she put 240Hp and 350 lb/ft peak to the rollers. In that configuration, I also put down over 330lb/ft from 2000 to 4000RPM! With all of these upgrades and my new Nitto Extreme Drags, I expect to be knocking on the 13 second door, and when the S'ed '95 spec. blower goes on, it should get really interesting!

One Lap here I come! Maybe I'll see you there!

Charles is SCCoA member #541 and he is Co-President of the Midwest Super Coupe Club which serves members living in Ohio, Michigan, Indiana, & Kentucky. To join the Midwest chapter, email him at "midwestscguys@usa.net"

I'm not into working out. My philosophy: No pain, no pain.

Did you ever notice when you blow in a dog's face he gets mad at you? But when you take him in a car he sticks his head out the window.

I have six locks on my door all in a row. When I go out, I lock every other one. I figure no matter how long somebody stands there picking the locks, they are always locking three.

The statistics on sanity are that one out of every four Americans is suffering from some form of mental illness. Think of your three best friends. If they are okay..... Then it's you !!!

A lady came up to me on the street and pointed at my suede jacket. "You know a cow was murdered for that jacket?" she sneered. I replied in a psychotic tone, "I didn't know there were any witnesses. Now I'll have to kill you too."

Future historians will be able to study at the Gerald Ford Library, the James Carter Library, the Ronald Reagan Library, and the Bill Clinton Adult Bookstore.

The Tale of Two Birds

By Mark Sayers

It was 1994 and I was in a used car show room when I saw the best looking car that my eyes have ever seen. It was a 1990 35th Anniversary Thunderbird Super Coupe. I fell in Love at first sight! Because I was working for a sister dealership I could get the car for $150.00 above the wholesale price. My price was $10,500, so I worked out a deal and went back that night to pick up my baby. I was so happy! I do believe that I had the best looking Super Coupe ever made.

I loved to drive that car. It was fast and great looking. It was fully loaded with every option. I had the car for about a year and a half when I lost my job. I was looking for work but could not find anything in the first two months. I could not keep up the payments so I had to make a choice regarding the SC. Either they would come and take the car or I could go give it back to the dealership. I decided to made the long drive back to the dealer, and believe me this was not easy. I did love that car. I talked to the used car manager and told him my story. He said that he understood and I had done the right thing, so that was the end of my Bird.

I never gave up on the idea of owning another Super Coupe but in the mean time I had bought a 1977 Lincoln Mark V. I spent 7 months tearing it apart and restoring it inside and out and was very proud of it also. It was not a Super Coupe but it was a coupe. In April of 1997 I was looking for a job in the Lexington, Kentucky area because I was getting married in July of that year to my lovely wife Teresa. When I found a job I was so happy that I had to go tell her at her work. I was on my way to tell my soon to be wife that I had a job when an older man saw my turn signal on and thought I was turning. He pulled out in front of me and it was "BAM". I destroy his '92 New Yorker and had totaled my Mark V. So now I needed a new car. I told Teresa that I would only have one of the following two cars…either a Mark VII LSC or another Super Coupe. So we went looking and I ran across two Super Coupes in the Cincinnati area and went to look at them both.

Mark's Mark V

The first one was not in too good of shape so I did not make an offer. The second one was in very good shape. Apparently the kid who owned it had only had it for 4 or 5 months and was selling it because it would not beat his bosses Porsche. He was asking $8500. I showed him a estimating book that lists car prices. By the way, this is the same book that the adjuster went out of when he was looking at my Lincoln and he gave me $4500 for a 22-year-old car. So I do believe this was a good book. I showed the kid what it was worth in the condition it was in and offered him $7000 and he said OK.

So now I have my second Super coupe and I am very happy with it. Though I liked my 35'Th much better, I do like my '89. I try to take care of it though as I do drive it every day. When I got it back in May of 1997, it had just about 85,000 miles on it. Now it has over 151,000 miles on it so you see it does get driven a lot.

I have made a few modifications to it. Nothing to the engine yet, but I did find a set of anniversary wheels and put them on. I had a large blue T-bird emblem made and put it on the back glass and I get all kinds of Email asking were I got this. To this day I have told nobody for I think it makes my car look like a one of a kind. I also put a set of 3.27 gears in back to deliver the power better to the ground. This has been a very noticeable improvement. Last year at Carlisle I put it on the chassis dyno and found out it puts out more power to the rear wheels than Ford says it should at the crank...and everything on the car (with the exception of rear gears) is completely stock! My '89 Super Coupe will be with me forever till I die - maybe I can talk my wife into burying me in it?

Mark's Black '89

That is my story of my love affair with the Thunderbird Super Coupe. It is a great car and my heart will be broken if I ever lose it.

MAF Explained

It all goes down the tubes.

By Randy Crocker
Aka "Randee of the Redwoods"

Many of us Super Coupe owners want more performance from our engines. One of the simplest ways is to upgrade the mass air flow (maf) meter to a larger size. But many of us don't fully understand the maf size relationship to our engine size, including myself. One phone call changed that for me.

My search for increased performance started with the maf. Super Coupe engines use the mass air type of engine management. The maf tells the engine computer how much actual air is entering the engine. The computer uses that information to set fuel delivery and other stuff. The maf consists of 2 parts: the sampling tube and the housing. The sampling tube houses the sensor filaments that trigger the engine computer. So where does the confusion lie?

When I went to upgrade the maf in my '92 SC I bought an 80mm unit for $180. I figured if 73mm was good, then 80mm must be awesome. Boy was I wrong. And I was also wrong on something else as my check engine light constantly illuminated while that monster 80mm maf was installed. I discovered some SC owners had used a 73mm unit with no trouble. So I also bought a 73mm unit but was told it was calibrated for 36# injectors. My '92 SC has 30# injectors. Confused as all get out, I finally broke down and called Vortech, distributor of the 73mm maf, who then referred me to C&L, the maker of the maf. I spoke to a fellow named Lee who laid everything out plain and simple. It seems there is some pertinent information that we need to know as owners of Ford V-6's.

Ford used the same size maf housing size in the 5-liter V-8 and the 3.8-liter V-6. Both engines consume differing amounts of air. So how can both engines use the same maf housing size? Because Ford used the same housing size, the sampling tube was adjusted to allow for each engine's air consumption requirements. And because the V-8 is the engine of choice, maf units are rated and sold calibrated for V-8's, not V-6's. Units that are rated for our V-6's are actually V-8 units. Let me explain.

Change the sampling tube size and you change how much air the engine computer sees. C&L makes their maf housings with interchangeable sampling tubes based on you injector size. Since the units are rated for V-8 engines, you can't arbitrarily drop in a 30# sampling tube into an SC with 30# injectors. The sampling tube is sized to tell the computer to deliver fuel for a V-8 engine with 30# injectors. That's the problem I originally had with that 80mm-sized unit. It turns out it was equipped with a tube sized for 24# injectors in a 5-liter V-8.

Lee explained that since mafs are rated for V-8s, you must adjust the sampling tube size to make it work properly in a V-6. This is where the confusion lies. The 30# tube for the V-8 is not the same for the V-6. For the 3.8-liter V-6, you must use the 19# tube. Physically, it's the smallest in size. But, while being sized for 19# injectors in a 5-liter V-8, it is the compatible size for 30# injectors in a 3.8-liter V-6. So I swapped the sampling tube that came installed with the 73mm maf I bought to replace the 80mm unit and have had no problems whatsoever since then.

To keep the confusion down even further, here's something to remember. If someone with an early SC with 30# injectors says they bought a 30# maf, it's a slight misconception. True, they have bought an maf that will work with their 30# injectors, but if you look at the sampling tube part number or the tube's inner diameter, you will find it is the same as the 19# for a 5-liter V-8 engine. It will be compatible with a 3.8-liter V-6 with 30# injectors but physically is a unit rated for 19# injectors in a 5-liter V-8. I'm assuming that for the later model Super Coupes with 36# injectors you would simply step up to the next tube size which is 24#. A tube rated for 24# injectors in a 5-liter V-8 would be compatible with a 3.8-liter V-6 with 36# injectors. See the pattern?

This holds true for C&L type maf units, which have interchangeable sampling tubes. Pro-M maf units may be exempt since they physically alter the voltage going back to the computer rather than fool the computer by sampling a different amount of air.

Maf housing size also plays a role although not as critical. Yes, more air is good, but there is a cut off point. The air consumption requirements are different between the 3.8-liter V-6 and the 5-liter V-8. Even a highly modified V-6 wouldn't come close to consuming the same amount of air a lightly modified V-8 would. Therefore, don't base your performance gain speculation on how a particular unit would fair in a V-8. The 3.8-liter V-6 just doesn't need a big housing to make power. "Nitrous Neil" Frisbee, who currently holds the #1 spot as the fastest Super Coupe at 12.4 seconds in the quarter mile, only used the 73mm C&L maf. Wayne Ing, who holds the #2 spot with a best time of 13.0 seconds in the quarter mile, was also equipped with the 73mm unit. If it's good enough for them, then it's good enough for me.

I hope this essay helps clear any confusion you may have about upgrading your maf. If you want to do it, by all means, do it. Just don't make the same $180 mistake I did.

Super Coupe Club of America

Custom Embroidered Auto Apparel

- Your source for custom Thunderbird SC and Cougar XR7 embroidered apparel. http://www.sccoa.com/apparel/

Heavyweight T-Shirts: Gildan Super Heavyweight Tee 100% cotton 6.1 oz preshrunk jersey knit Double needle topstitched neckline Double stitched sleeve and waist hems Seamless collar with taped neck and shoulders Quarter turned to eliminate center crease European straight cut comfortable fit	**Available Colors:** White*, Natural*, Ash*, Black*, Sports Grey*, Maroon, Orange, Forest*, Royal Blue*, Red*, Navy Blue*, Purple, Light Blue, Light Pink, Yellow Haze, Mountain Rose, Stone Blue, Serene Green, Eggplant, Charcoal, Leaf, Cedar, Indigo Blue, Prairie Dust, Tan, Chestnut, Blue Dusk, Olive, Brick, Sand, Mango, Key Lime, Daisy, Bermuda, Azure, and Coral.	**Sizes:** All colors available in: M - L - XL – XXL *** indicates size available in XXXL** Embroidery available in: **White, Khaki, Black or Stainless Steel** **Price: $ 20.00**	
Classic Denim Shirts: Three Rivers Classic Denim Shirt 100% cotton long sleeve denim shirt Button down collar with wood toned buttons. Left chest pocket. Single- button cuff and sleeve placket. Double-needle stitched. Generous cut.	Available Colors: White, Natural, Khaki, Black, or Light Blue Embroidery available in: White, Khaki, Black or Stainless Steel	**Size:** S - M - L – XL	**Price:** **$45.00**
		XXL – XXXL	**$50.00**
		XXXXL - XXXXXL	**$55.00**
		Large-Tall XL-Tall XXL-Tall	**$53.00**
Golf Polo Shirts: Harvard Square 100% Heavy Pique Sportshirt 7.25 oz ring-spun Egyptian cotton 3 wood-tone button placket. Fashion knit collar. Welt cuffs. Side vents with 2.5 inch extended tail.	**Available Colors:** Denim, Yellow, Sports Grey, Sage, Wine, Ash, Fushia, White, Red, Putty, Royal Blue, Natural, Forest, Green, Navy Blue and Black **Sizes:** S - M - L – XL - XXL – XXXL	**Embroidery available in:** White, Khaki, Black or Stainless Steel Price: **$ 40.00**	
Heavyweight Sweatshirts: Fruit of the Loom 12 ounce, 90% cotton/10% polyester blend fleece fabric Shrinkage-controlled fabric Set-in sleeves Cover-stitched armholes, collar and band bottom	**Available Colors:** Black, White, Ash, Dark Gray, Natural Beige, Maroon, Forest Green, Navy, Red, Royal Blue **Sizes:** S-M-L-XL-XXL	**Embroidery available in:** White, Khaki, Black or Stainless Steel Price: **$ 40.00**	

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All items are guaranteed satisfaction, just mail the item back and I will refund your money or exchange the item.
All shipping and handling is a flat U.S. $5.00, regardless of how many items you order or where in the world the apparel is shipped to. This covers insurance and USPS's Delivery Confirmation Receipt service.

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Order Form: Name: _____ Shipping Address: _____ _____ Phone: _____ Email address: _____ Your phone number or email address are very important, as occasionally, I need to get in touch with you to clarify your order.	**Your order:** (be sure to specify the shirt type, shirt color, embroidery color and the size) Write in here or enter on another sheet of paper:

My Quest for the 13's - Part 3

By Joe Santillo

In Part 2 of this series I had left off with a discussion of what I had spent and how I was running at the track. I ran a 14.6 both before and after the 3.73 gear swap. The 60' times dropped to 2.01 seconds with the Goodyear Gatorbacks but traction was a new problem. Since the tracks closed in the winter, I ran the car at a chassis dyno in northern Virginia. I wanted to see where I was at with power and what areas could be improved.

The first area is intercooling! I had several 190 hp runs with the engine hot and was very disappointed. The Dyno owner let me wait over an hour for the car to cool off to try again. The result was a peak horsepower of 203.4 at 4500 rpm. (See the attached dyno chart) Here are some things that I have learned from the experience. If you have a 4R70W SC, the only good gear to make a run in is 2'nd. You can hold 2nd from idle to redline. As you can see on the chart, there are two passes that start at 3600 rpm. These are runs started in Drive. The Dyno owner tried to get a pass in 3rd, ('D'), but the transmission downshifted to 2nd, accelerated the wheels, then upshifted to 3rd. The only part of the pass seen here is 3rd gear.

Notice how the engine dies at 4950 rpm. That is the dreaded speed limiter kicking in at 105 mph. This is a result of the 3.73 gears. With the factory 3.31's, the car will pull to 126 mph. Another thing to try is ice at the dyno. The temperature in the garage was in the 60's and the fan blowing on the car is inadequate. If you can ice down the blower and IC, you will have more consistent runs.

That brings me to my next planned mod. I have purchased 2 used IC's to make a double IC. In addition, I also plan on adding a second cooling stage with air to water. My initial plan is to use a plate-fin style cooler in the lower IC tank. I will pump ice chilled water through the cooler and have a heat exchanger located near the rear bumper. This 'hybrid' IC is still in the design stage but I have identified all the parts to make the system work. There are two major benefits to a really good IC. The first is a cooler, denser intake charge. The second is a lower charge pressure. The lower pressure is not a bad thing. A lower intake charge temp produces less pressure for the blower to work against. If you have ever seen the Eaton charts, you can easily gain 10 HP at the crank with a boost reduction of 2-3psi. You don't loose any power because the mass of the air entering the engine has not changed, only the temp and pressure. The other benefit is a colder charge and the ability to run more spark advance under boost. (**)

Our EEC's reduce the spark advance proportional to the amount of boost in the engine (among other parameters). If the charge temperature is reduced enough, there is as much as 30 more hp to be gained. The total possible gain with a better IC is 40 HP. The reason why most people have not seen these gains is because no one has offered a product to 'tune' the SC. I'm sure that we will see some advances in this area shortly. I have read ALL the old Chargin' Thunder issues and I know there is much controversy over this subject. I do agree that a 'chip' on an otherwise stock SC is not the answer.

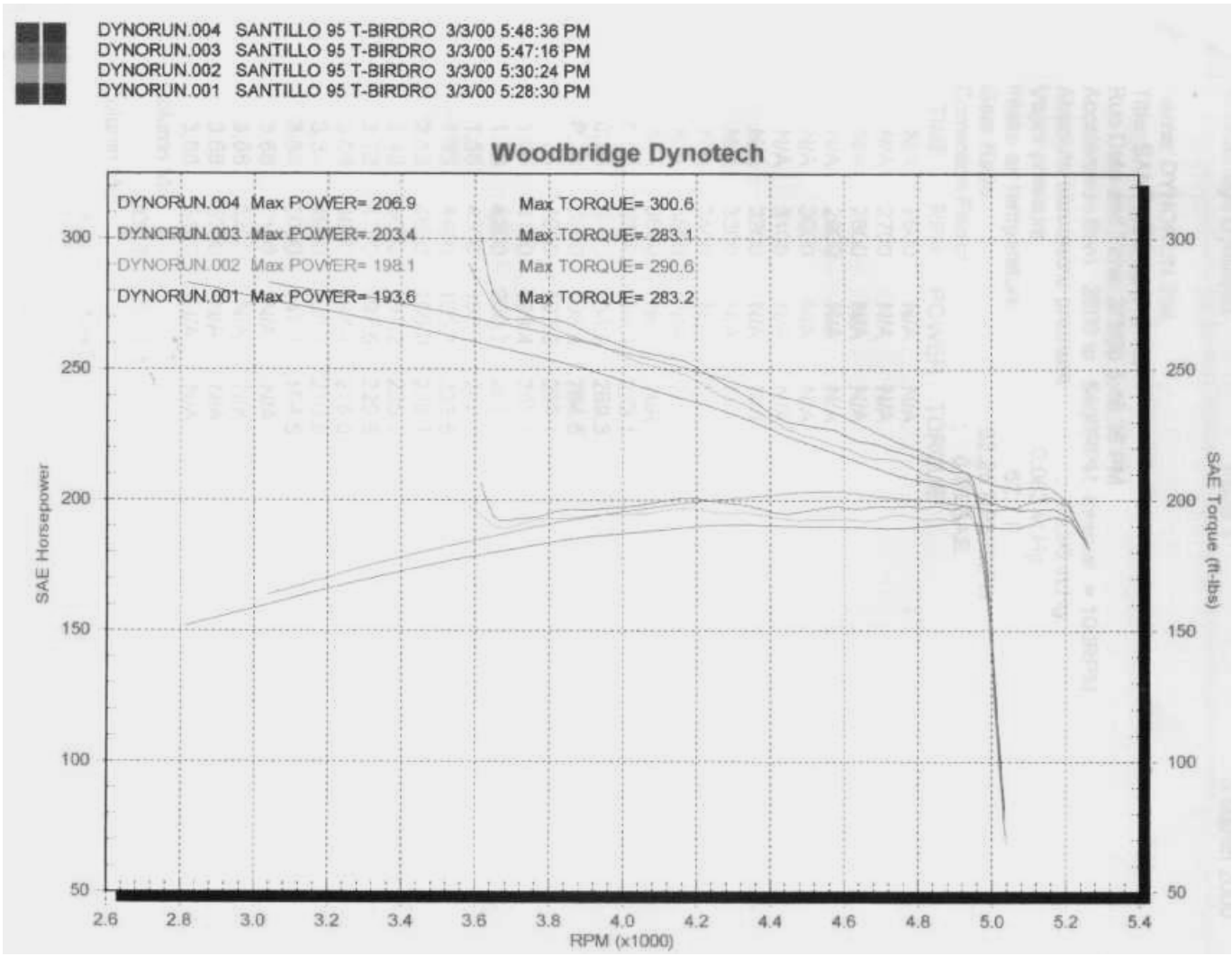
Another area of improvement is traction. I decided to buy some drag radials this winter and mount them on the factory rims. On my one outing to the track last month, I still couldn't hook up with the drag radials. I attribute this more to the track (75 & 80 Dragway) than I do the tires. My usual track, Capitol Raceway, has really good traction. I expect a much better time when I go to Capitol with the Nittos.

Dyno Results: When you look at the torque curve of the dyno chart, you can see the torque is falling off fast at 2800 rpm. I could

not coerce the Dyno owner to start at a lower rpm to find the actual torque peak. Since the torque is falling off so fast with rpm, the airflow to the engine must be restricted at higher rpm. I already have the raised blower top and the exhaust modified. I guess the next area to work on is the heads. I plan on picking up another set of heads and porting them to see if I can raise the high rpm torque.

As you have probably guessed, I have blown the budget of $2000 I originally set for this project. I will be closer to $3500 when finished, so I'd like to see low 13's. Part four of this series should see 13's. I will continue to document the changes to the SC and report the results here. Since I recently purchase a daily driver ('89 SHO), I can get much more radical with the SC and not worry about the ride to work Monday morning. Finally, I'll be attending the Carlisle show again this year and I'm looking forward to putting faces together with all the names I've seen here in the CT newsletters and on the SCCoA BBS.

(**) I would like to thank Jerry from the TCCoA board for the explanation on IC and spark advance.



Steering the Way

Leather wrapped steering wheel from Ford Racing Performance Parts for your MN12

By Scott Shockley

In the world of hot rodding there are all types of enthusiasts. Some have an easier time in their efforts to personalize their vehicles than others. Those interested in Ford Motor Company's first fully independently suspended chassis, the MN12, are not part of that group. When something comes along that can ease the efforts to add performance or style to your favorite vehicle, it is big news.

Big news is the premise of this article, that is the introduction of a new leather wrapped steering wheel for the SN95 (which is the code name for the 1994+ Mustang) from Ford Racing Power Parts. I know what you are saying, "why should I be concerned with something developed for the Mustang"? The answer to that question is common engineering.

The SN95 and MN12 platform share more in common than the name on the trunk. Because of this fact the new wheel, M-3601-B, can be adapted to the MN12.

The first thing you notice is the overall quality of this new wheel, when removing it from the box. The leather is smooth along the top and bottom of the wheel, with perforated leather along each side. It includes more padding to bolster its approximate 45mm grip diameter, verses the original units 30mm.

A little information can go a long way to insure that this modification goes as planned, and the hidden pitfalls are avoided. Some items you should know before this operation is performed will save you time and trouble. The first of these is that the wheel needs some SN95 items to complete the transformation into an MN12 wheel. The most complex of these is that the rear shroud, the plastic cover that transitions the shape of the wheel to that of the column, is not included with the FRPP wheel. This shroud is supposed to be recovered from your original SN95 wheel, but the MN12 shroud has a different mounting and cannot be used. The trick here is that the shroud is

not a serviced part. The service steering wheels from Ford include this part, and it cannot be purchased separately. One solution to this problem is to try to secure one from a body shop that is replacing a damaged wheel, as the replacement includes the new shroud, and sometimes the old shroud is not damaged. You will need to compare the shroud to what you are looking for, as the SN95 may not be the only shroud that will suffice. Two other SN95 items that are needed are the horn and cruise control buttons. These items are both serviced and can be purchased from your local Ford dealer. You will need to obtain both F5ZZ-13A875-BB, and F5ZZ-9C888-AA. They bolt directly to the new wheel and integrate nicely.

An easier solution to this dilemma is to find an SN95 wheel and pirate all the parts. This may not be as easy as it sounds, as most recycling yards want to sell the entire column, remember you do not need an air bag as the MN12 bag assembly will be reused. Check your local papers for someone parting a Mustang, as this may be the best solution when time is not a constraint.

One last piece you will need before beginning is a new steering wheel retaining bolt, N807493-S100; it must be replaced when servicing the wheel.

The adaptation of this new wheel is relatively straightforward, begin by disconnecting the battery, as you will be removing the air bag. When dealing with any air bag, all precautionary measures should be headed with great care. Consult the shop manual for more information. Removing the battery cables will disable the back up power supply for the air bag, however it will take a minute to discharge. To remove the air bag, begin by locating the two cover plugs in the side of the steering wheel and gently prying them out with a small flat bladed screwdriver. Behind the cover you will find two bolts that secure the air bag in place. After the bolts are removed the air bag wiring can be unplugged. Once the air bag is safely set aside with the “SC” emblem cover (which Ford calls the trip cover) facing away from anyone, the electrical connections for the horn and cruise control can be disconnected. Next loosen the center attaching bolt with the appropriate torx socket bit. The wheel can then be removed with a steering wheel puller. Be forewarned the wheel is tapped with metric threads, you may need to find some appropriate bolts if you do not have the right size. Once the wheel is loosened the center bolt can then be removed and the wheel disconnected from the steering column.

When installing the new wheel, once it is assembled, be sure to maintain alignment. This is very simple to do as the wheel and shaft has only two flats on either side for indexing. Note: If the wheel does not index straight up when on the test drive, a toe adjustment can take care of this.

This wheel can be purchased from any Ford Racing outlet for less than $200, which makes it a reasonable and beneficial modification.

Once you have experienced the feel of this modification, you’ll thank the SN95 crowd for their common engineering.

The SC Motor - From Sea Level to Mile High

By Fred Holzhauer - fredholz@concentric.net

The SC Engine is a different critter at higher elevation. I've had the opportunity to drive my '90 SC in several engine trims all around the country. The nature of the engine seems to change - from a torque monster that packs up around 4700 rpm - to a higher winding motor, beginning around 3500 ft. Now that I am involved in yet another engine incarnation, I've had the chance to calculate many of the engine parameters with the change in elevation in mind. Here are some of my findings, without too much of the tedious math . . .

Fred's '90 SC

Air Pressure is the key to the difference. At 75 °F, sea level pressure is around 14.3 psi and at a mile high you have only 11.3 psi.

Blower Intake efficiency is dramatically affected in a positive way at elevation. Blower pressure at WOT is 3 to 5 psi less. There are big implications. Even though total available oxygen is down 21% due to air density, the blower is operating about 30 or so horsepower more efficiently at speeds over 4500 engine rpm. For a stock machine, this is not quite a wash. On a highly modified engine, like Coy's Stage 2, we've lost about 50 horses overall. This effect tends to shift the powerband up in rpm's. The door is wide open for 10% supercharger overdrive here. The worry is no longer headgaskets, it is overwinding the blower or engine. The good news is there is less stress on the blower.

Fuel Requirement is no longer 93 octane. At higher elevation the apparent **effective compression ratio** (from the time your intake valve closes to TDC) goes down by, you guessed it, 21%. High test gas here is only 91 octane, and midgrade is 87. Midgrade runs fine in the Coy Stage 1 mill, but the stock one needed high test. The reason is the long intake duration of the modded cam cuts effective compression. All this on top of the elevation effect. Lower compression means less torque, but also enhances the engine's ability to wind up.

Exhaust flows more freely at the mile high elevation. It has 3 psi less backpressure to fight. This is another help to higher rpms. The faster the engine turns the more power it saves compared to sea level. Think of the engine as an exhaust gas pump. It has to push gas through the exhaust system's restrictions and then against outside air pressure. Tally the cost in horses. For a given exhaust system, moved to mile high elevation, we have 21% less exhaust at any given rpm and 3 psi less head pressure to push against. Guess what? 10 to 12 more horses for a stock engine, which now is a wash vs. sea level in horses, but not torque, and 22 or more for a big exhaust on a high rpm engine. I should mention here that headers are an important tuning device for your car. The recommendations for the 300 - 375 horse set of shorty headers plus a 3" exhaust with a resonator are fine at sea level. That exhaust will tune up (for peak torque) at WOT to about 2700 rpm on a 10% od motor. Under normally aspirated conditions it tunes around 4700, sea level. What? You say you lost some part throttle bottom end and driveability? Listen to the FAQ's! You start by dropping gear ratio,

which works well for either stock or modified motors, but prepares you for the less torquey aspect of the exhaust you need to support all out blown operation. The same 3" exhaust system we are talking about is more profound at elevation. It tunes at 3450 WOT and 5900 in the NA condition with a fullout Stage 2 motor. Another nod to higher powerbands at mile high.

Injector Sizing - At elevation, less air means either smaller injectors, or a motor that can go to a higher rpm on the same injector. Less intake pressure means that there is less trouble with fuel pumps and injectors leaning out at top end. Did you know that there are different timing maps in the chip for higher elevation operation? Ford recognized this effect, and complicated my future tuning life by adding this feature

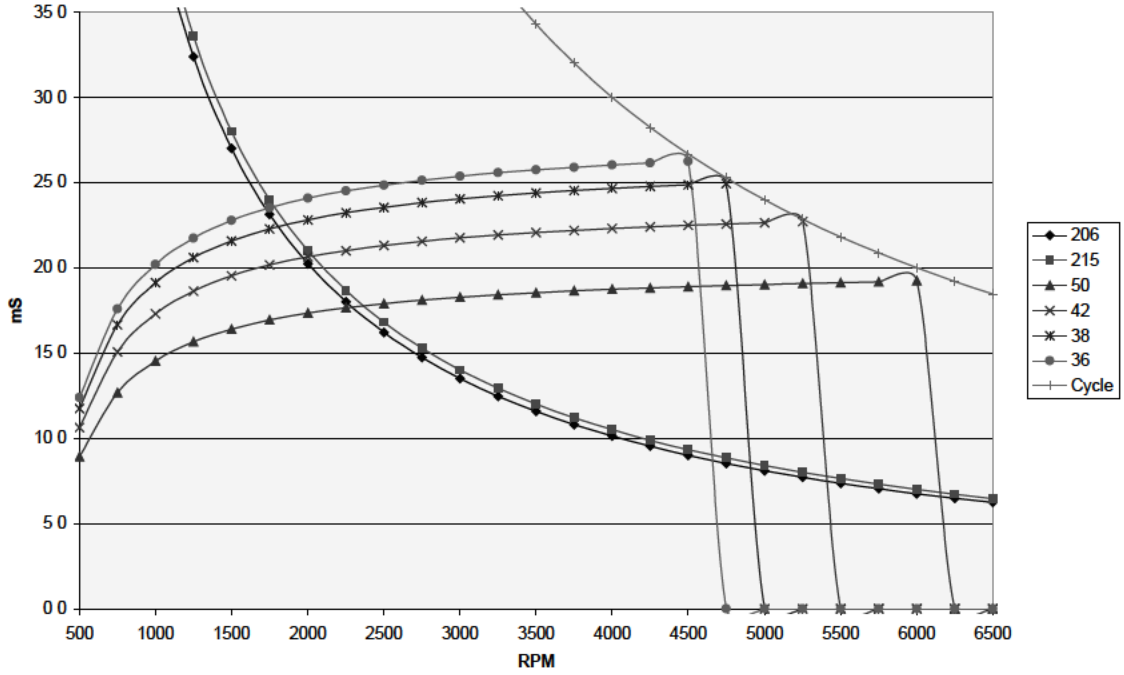
Camshaft Selection / Installation is your best opportunity to tune your engine for your expected operating conditions. We see most supercharged engine performance camshafts with a longer exhaust duration than intake - or the same, on an advanced cam. Fine at sea level. We have prodigious torque at sea level, so we can afford to open the exhaust valve a little earlier. We do need good exhaust gas scavenging at sea level to keep combustion chamber temperatures down. Remember that we have 21% more gas to get rid of against higher air pressure. The intake side is the reverse. At sea level, we can get air into the engine in a more concentrated form, so we need less intake valve duration to get the job done. At elevation we can get away with shorter exhaust valve duration - more torque!! (but we still need scavenging to keep our mountain motor from blowing up at sea level). Mile high requires longer intake duration to help make up for the lost air density and impulse. With less dense air the intake's impulse function takes higher rpm to develop. Is this starting to sound familiar?

Cooling is a problem at elevation. There is less material in the air that passes through a radiator, so the heat transfer suffers. At mile high, you need 50% more radiator than you did at sea level for the same motor.

Summary

The SC motor tries to be all things. It runs normally aspirated at a decreased compression for economical and environmental reasons. Floor it, and you have a high compression motor that thinks it's 350 CID. It's actually not a "square" configuration. It has a bigger bore than stroke, predisposing it to higher rpm performance. The only thing holding it back is everything else. Exhaust tuning, cam tuning, intake restrictions, injector size, etc. all were chosen to support the life Ford intended for our vehicles. I find out now, that the overall tuning of the stock engine left very little to be desired at mile high, especially when it came to WOT performance. If you were used to shifting at 4800, sea level, just hang on until about 5300 up here, and the Z-28 that could whoop you at sea level is now so much toast !! They suffer worse than we do up here! Funny how things turn out. I've done everything I can on my new engine project can take advantage of the aspects of higher elevation, with a nod towards proper operation at Carlisle, PA. SC Ya !

Cam - Injector Pulses M90s at 110% Sealevel



Cam - Injector Pulses M90s at 110% Milehigh

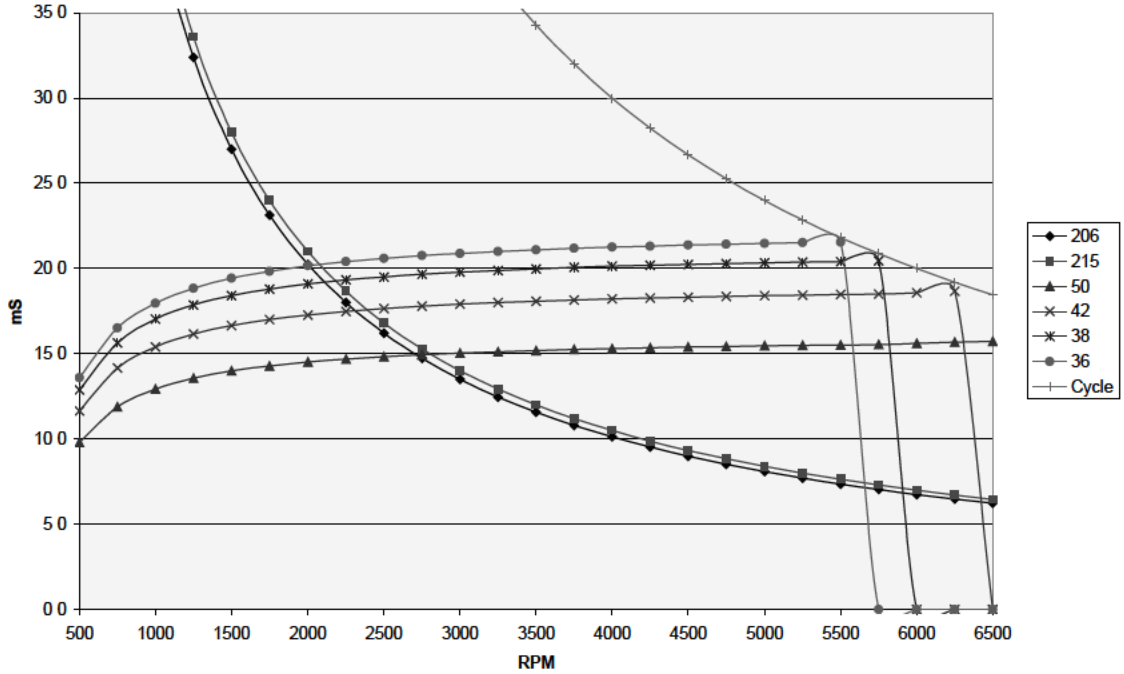


Illustration: One of the considerations to any SC enthusiast building a motor is the selection of injectors. The charts included in this article detail injector response in the wide open throttle condition for a Magnuson S-ported M90 blower. The curve to the far right shows the time it takes, in milliseconds, for the engine to go through its 4 cycles (intake, compression. power, and exhaust) at the given rpm. The cam window curves are a fraction of that time. A cycle is 720°. Two popular cam grinds are shown, 206° and 222°, the effective cam window being about 37° longer. Cam window is the time of the cycle that the air column is moving.

If your injector reaches the cycle curve, you are at 100% duty cycle, and run the risks of leaning out the motor or burning up your injectors. If your injector is operating below and to the left of your cam curve, you are firing fuel into the moving column of air, which is efficient. Above that point your fuel maps must be artificially rich to compensate for the inefficiency of firing into a static air column.

The point of the illustration is to show the dramatic effect elevation has on fuel requirement and injector size. A given injector will respond up to a much higher rpm at elevation.

Used Car Classifieds Translations

***If the ad says… . it really means…* .**

MUST SELL... before it blows up.
RUNS FINE... I was going to say "runs excellent" but I had a last minute attack of conscience.
NEEDS SOME BODY WORK... was side-swiped by a Winnebago.
WELL-MAINTAINED... I occasionally changed the oil.
LOOKS LIKE NEW... just don't try to drive it anywhere.
ALL ORIGINAL... I never had anything fixed, adjusted, or replaced.
LOADED WITH OPTIONS... each one more troublesome than the last.
NEVER SMOKED IN... unfortunately, that's the best thing I can say about it.
PROJECT CAR... I can't figure out how to finish it and I doubt you will either.
LOTS OF POTENTIAL... to drive you insane.
NEEDS MINOR REPAIR... doesn't run.
ENGINE QUIET... uses 90-weight oil
PARTS CAR... beyond repair.
ROUGH CONDITION... too bad to lie about.
IMMACULATE... recently washed.
CONCOURS... recently waxed.
NEEDS MINOR OVERHAUL... needs engine.
NEEDS MAJOR OVERHAUL... phone the junkyard.
BURNS NO OIL... (it all leaks out).
REBUILT ENGINE... cleaned the spark plugs.
DRIVE IT AWAY... I live on a hill.
DRIVE IT ANYWHERE... (Within 10 miles).
DESIRABLE CLASSIC... no one wants it.
RARE CLASSIC... no one wanted it even when it was new.
STORED 20 YEARS... (in a farmer's field).
RAN WHEN STORED... won't start.
NEVER APART... bolts too rounded to loosen.
SOLID AS A ROCK... rusted solid
RESTORED, WITH 0 MILES... won't start.
RESTORED, WITH 2 MILES... won't stay running.
OLDER RESTORATION... first owner washed it.
GOOD INVESTMENT... can't be worth much less.
NO TIME TO RESTORE IT... can't obtain parts.
95% COMPLETE... other 5% doesn't exist.
CLEAN... homeless dude at 5th and Main did the windows.
GOOD TRANSPORTATION... It's ugly as sin.
ENGINE BLUEPRINTED... I don't know what it means either.
EXCELLENT GAS MILEAGE... It's slow.
LOW MILES... the odometer was turned back.
ONE OWNER... can't give it away.
SURE TO APPRECIATE... that's why I'm selling it.
. . .OR BEST OFFER... I'm guessing here.
FASTER THAN A 'VETTE... A Chevette.
OTHER INTERESTS CONFLICT... spouse's ultimatum: "Either that #!!@&## thing goes or I do!"

Rich Knott gives the thumbs up from inside his targa top '94 SC. Rich and his stepfather, George O'Neill, are using parts from this rolled-over SC in his late model V6 Mustang. It will soon receive a horsepower injection via a 3.8L SC engine! Believe it or not, but this car was driveable after it's accident...a testament to the strength and safety of the MN12 chassis.