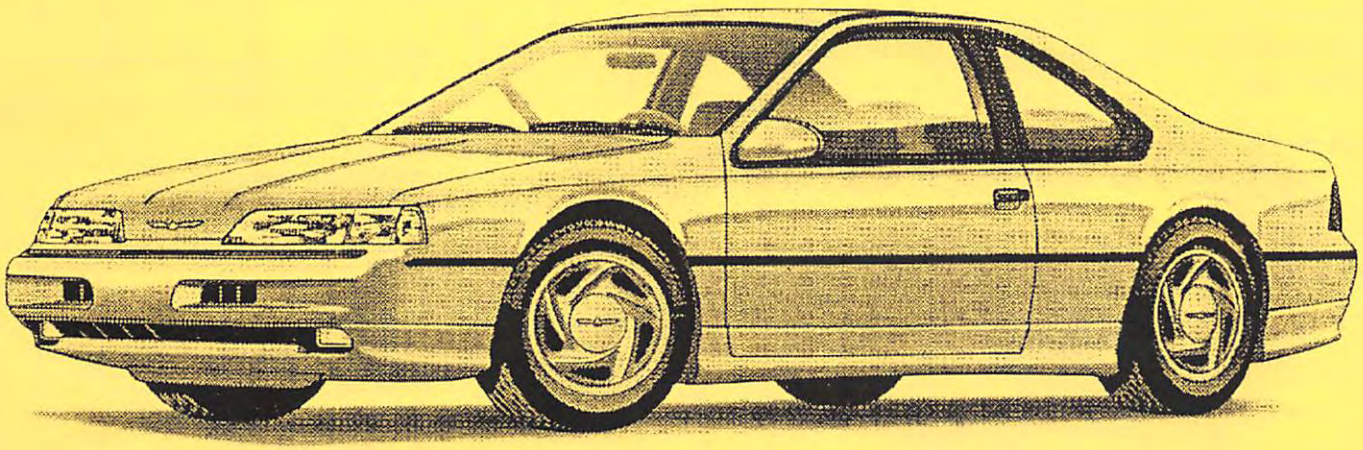
CHARGIN' THUNDER

VOLUME II (DATE: TOO LATE IN '98) SEPT. 1997

THE OFFICIAL NEWSLETTER OF THE SUPER COUPE CLUB OF AMERICA



Dedicated to the Preservation and Performance of the Thunderbird Super Coupe 1989 - 1995

Bill Hull
President & Editor

"S" MODEL SUPERCHARGERS

FOR THE PERFORMANCE MINDED ENTHUSIAST

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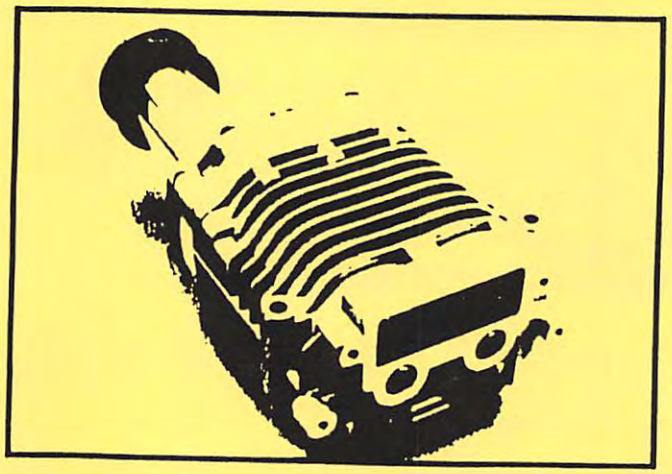
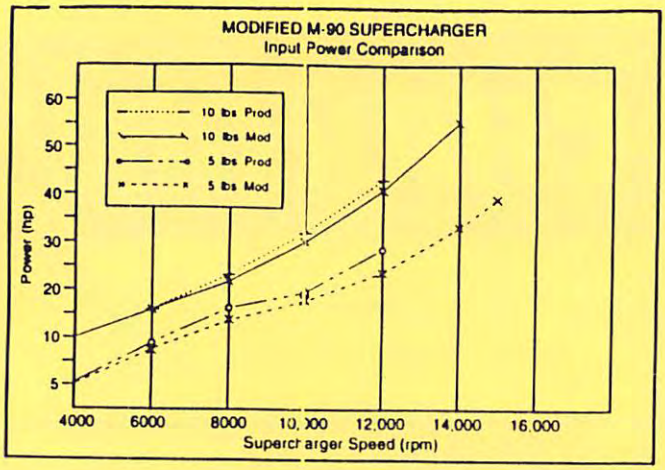
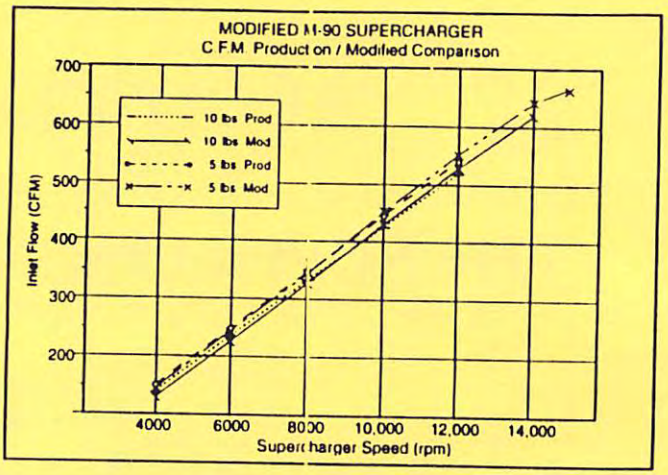
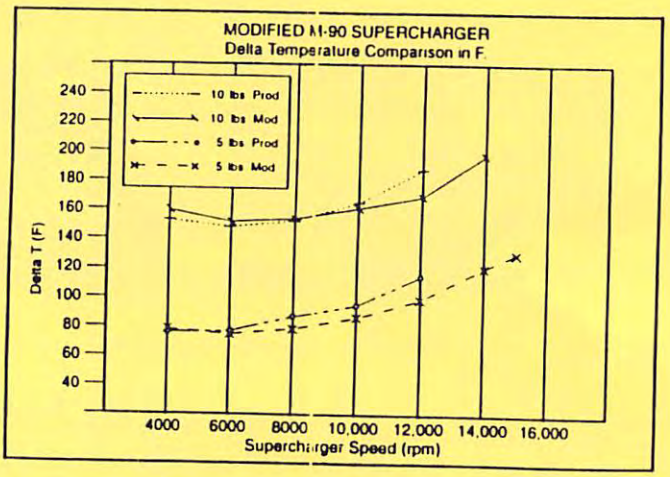
"S" modifications may be made to all Eaton Superchargers on the outlet side. Intake modifications are selected as to "type" on all others. Call for pricing on this super improvement.









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FROM THE BIRD'S NEST By Bill Hull

Hello Super-Coupers!

Well, I've always heard that time flys by when your're having fun! It must be true, because here it is 1998 already and I've been having so much fun I forgot to do a September newsletter! If you all believe that, I have some good Bowtie parts for sale, cheap - heck, I'll even throw in the ocean-front property in Arizona for nothing!

I know, I know, I've been negligent, irresponsible, and according to one want-to-be Club member, even arrogant! Many members have called, E-mailed, snail-mailed, and posted on the SCCoA web-site, wondering what happened to their Sept. issue of Chargin' Thunder. Some have even wondered if I was still alive and well. Well, as I have posted on the BBS, and borrowing from Mark Twain, the rumors of my demise are premature. As for the SCCoA - things are going "too well". That is, as of today the membership count is up to 663, still averaging one new member per day! Since the web site has been up and operating, my correspondance (phone calls, e-mail,etc) has more than doubled - to the point where no one person, much less myself, can keep up with it all! There are not enough hours in a day! Those of you who were members last year remember my mentioning that with 400 members, I was already in over my head! So much more now! Any suggestions on how to handle this load would be much appreciated!
I remember talking to the president of the SHO Registry almost two years ago - he told me that I would soon have to decide if I was going to be president & editor of our newsletter, or, if I was going to be a parts distributor - that I would not have time to do both! He was right! Somehow, though, I am going to persevere!

Anyway, time constraints are only one of the reasons I am so far behind. I have been promising some dyno results from the Coy Miller 3.8L SC engine program since last June. They have been slow in coming - (computer/wiring harness difficulties on the dyno, UPS strike, waiting 3 months for APR main studs, etc.) as a matter of fact, only last week did I finally receive some computer print-outs from the first dyno engine. It was worth the wait! 425hp @ 5800 rpm - 478lb/ft of torque @ 3800rpm at only 12 lbs of boost! Volumetric efficiency ratings were way up - from 160 to 175% from 4500 rpm thru 6000 rpm! - more than double the VE of a stock, normally aspirated 3.8L. The high-lift cam, big valve, ported heads, with all the other SCCoA & Coy Miller bolt-ons offered very little resistance to air flow thru the entire engine system. The S-model Magnuson blower can provide up to 700cfm of airflow (enough to support 500 hp). Coy Miller's (actually Club member Walter Nile's) 3.8L was using 640 cfm of that at 6000rpm (see enclosed print-out). This with a severe belt slipping problem above 5000rpm. This engine flowed so freely that even the S-model could not maintain but 12 lbs of boost - although a large volume of air was difinitely moving thru the system as evidenced by the impressive VE figures.

The beauty of this beast is the fact it will still be perfectly streetable. At idle, this engine held 17.5 in. of vacuum, and while it had a slight lope, the average person would never suspect what lay under the hood! Making this kind of power at reasonable rpm levels means these engines will be very dependable and long-lived. In addition, Coy has strengthened all suspected weak points in these 3.8L's. The forged pistons and billet rods, while weighing much less than the factory pieces, are much, much stronger. The lighter weight and computer balancing of the reciprocating components means less stress on the cross-drilled crankshaft and bottom-end. The billet main support girdle with ARP main studs is added insurance against the stress of 425+ hp - even with a good dose of nitros added! The thermal barrier coatings on the piston tops, the combustion chambers, valves, and exhaust ports will give added insurance against detonation damage in case something should happen to the fuel delivery system, etc.
There is much, much more to a Coy Miller super-street engine build than I can go into here. Which brings me to my next topic of discussion.

Because less than 1/3 of those members who have joined since Mar 97 have opted to purchase the 96 issues of C.T., and because we do not do a lot of repetition, many members do not have all the information that those of you have who have been members since 1996. Beginning in March 1998, the problem will be compounded, because members joining after this date, unless they want to purchase two years' worth of

back newsletters, will be missing out on everything that has been published up to that point. Therefore, I have started working on a book, that's right, a book, on the Super Coupe. As the Mar 97 issue of C.T. was by itself 130 pages, I expect this all encompassing manual could well surpass 200 pages. I plan to use the "Power Pack" books published by Muscle Mustang & Fast Ford as a rough guide, and include all of the "meat" from the first two years of C.T. as well as a lot of specific technical info from the Coy Miller engine building program. Also to be included will be many bolt-on tips, including illustrations, Stage 1 thru Stage 4 engine build ups, and chassis and suspension tips for both drag-strip and road course handling (thanks to the Bob Bondurant driving school & Kenny Brown Performance). I hope to have this book completed by Mar 1998, and available for the price of one years' back newsletters, or $40. This way, old & new SCCoA members can have a readily available technical manual for their beloved SC's, and everyone can be on the same page! This manual will be optional, of course, and not included with membership dues, which will remain at $40 per year. However, because we plan on holding at least one SCCoA club event per month in 1998, starting in April, I plan on going bi-monthly with Chargin' Thunder in 1998 in order to keep up with current events. I know you are thinking - this guy can't even keep up with 4 issues per year, much less 6. Aahhh.....but with the availability of all the technical info neatly wrapped up in one manual, periodically up-dated, these newsletters can then become just a newsletter (like all the other car clubs have) of maybe 25-30 pages (with picture coverage of our competition events), and therefore much easier to produce! Voila!!

NEW PRODUCTS -

As many of you know (especially those of you who had to wait 4 months), Watson Engineering, without warning, quit making headers for the SC back in June, 1997. Although continuously promising to resume production, they have decided not to do so. This was the second time they have lied to me about supplying headers for the SCCoA, and as headers and a free-flowing exhaust are critical to the performance & durablity of these blown monsters, I went ahead and took matters into my own hands. No, I am not making them myself, but with the help of Coy Miller, found an exhaust shop which is currently making them for the SCCoA. I am purchasing the the 304 stainless-steel mandrel-bent components from a supplier in California, and can now guarantee a steady supply of quality headers for the SCCoA. The cost of the 304 stainless components is high, and the hand fabrication & welding is very labor intensive. The price of the headers has had to be increased by $50, to $695, to reflect this cost increase. Although expensive, this is still less than one-half of what JBA (the only other manufacturer of headers for SC's) charges for their headers, and these new headers are even better than what Watson was producing (bigger collectors).

After searching for months, I have finally found a source for the ideal catalytic converters for our down-tubes. They are identical to the ones sold by Random Technology for $159 - SCCoA price, $119, in either 2-1/2 or 2-1/4. These round, high-flow cats fit much easier with-in the tight confines of the SC chassis, & are are now automatically included when SCCoA down-tubes w/cats are purchased. These cats are also both EPA & CARB approved as replacement cats.

Kenny Brown has developed a front chassis support, a rear sub-frame connector, a strut tower brace, and a 6-point roll cage for the late model T-bird. The chassis pieces will fit all 89-97 'Birds, the strut tower brace will not work on the SC, because of the blower, and the roll cage is pricey at $600. Kenny Brown would like to know what demand there is for these pieces - if sufficient, he will make these parts available on a continuous basis, and perhaps can lower the prices.

I have developed a fresh-air induction system for the SC, based on the article by Charles Warner back in June C.T. As stated in previous newsletters, I don't buy into the term "ram-air" for these cars. Furthermore, several people have locked up their engines by sucking water into low mounted air scoops. The system I have come up with uses a 9" K&N cone filter which fits air-tight into a black, plastic March Products air-box mounted in the stock location. It requires a custom 3" tube between the mass-air body & the throttle-body, double clamped with Spearco high-temp silicone hoses, as well as slight modifications to the oval opening in the fender-well. Price, $199.

The Competition Limited High-Performance headlite kits have been selling like Hot-Cakes! Everyone who has purchased these easy-to-install kits (about 1 hour) love them. Just recently, the halogen bulbs

(available in white, gold, or the best-selling, blue ionized) have been increased in power by 25%, with no increased current drain.

I highly recommend the use of FOMOCO's supercharger re-seal kit (part# E9PZ-6F091-A) when removing/installing intercooler tubes. This kit includes a tube of Loctite sealant, a tube of anti-seize, directions/instructions, gaskets, and most importantly, the special self-adhesive sealing tape. I have found this tape much more reliable and easier to use than the Loctite #518 gasket eliminator. A leaky inter-cooler connection can create havoc (both a vacuum & boost leak), and is often hard to locate. Ford sells these kits for around $30 (when they can order them), SCCoA club member price, $25.

In conjunction with Coy Miller, we now have 4 different choices for roller-rockers - 1. Bolt-down non-adjustable for stock replacement, 2. Bolt-down adjustable, when valves have been changed or valve-seats have been modified, 3. Extruded aluminum, stud-mounted adjustable, which require milling the pedestal seats, drilling & re-tapping for 3/8"-7/16" ARP studs, plus custom Coy Miller guide-plates and hardened push-rods, and 4. Comp Cams chrome-moly steel , otherwise same as #3. Although roller-rockers are primarily a reliablilty/durablity item, all manufacturers of these products claim 10-25 hp increases due to friction reduction, lighter weight, and increased valve-train accuracy. In addition, they look great! Too bad we don't have clear, see-thru valve covers!

ARP main studs are now available! They will work with or without the SCCoA windage tray. They come with 12 point nuts and HD washers. The ARP head studs also now come with 12 point nuts - these nuts cost 4 times the price of the regular hex-nuts, almost as must as the studs themselves, but offer more clearance for header bolts & rocker arms. The Coy Miller main-support girdle will be available in the near future. At present he has hand fabricated 3 units for his dyno engines. He is going to have them re-produced on a CNC machine as hand-fabrication requires approximately 20 hours per. A must-have item for those of you contemplating 400+hp, as these thin-cast, skirt-less blocks need all of the help they can get! For those of you who cannot afford the expected $300+ cost of the main-support girdle, the SCCoA windage tray is quite rigid, actually ties numbers 2, 3, & 4 main caps together, (a poor-man's stud-girdle?), plus acts as a oil scraper for the crankshaft and oil baffle for the crankcase (keeping the oil away from the windage of the crank at high rpm's.

Many of you have opted for the Extrude-Hone power flow process for you I/C tubes, inlet-plenum, and manifold adapter. This modification is very effective, especially on the plenum & adapter, although I can't say what hp increases can be expected. It is definitely not the biggest bang for the buck, but probably very beneficial for over 350hp applications.

Other popular items have been the cross-drilled rotors and carbon-fiber brake pads. Although not as effective as the Baer brake packages or Cobra retro-fits, the price is right! The Addco 1-1/8" rear sway bar is a real performer. Almost too pretty to install on a car (with the gold cadmium plating & red poly bushings), everyone who has purchased this killer piece has remarked how it has "tightened" up the rear of their SC's (no more floating sensation during hard cornering), & makes the over-all handlling more "neutral", all this with no sacrifice in ride quality! I have one of these sway bars on both of my SC's, and, especially combined with the Eibach's and after-market Tokico shocks (assuming up-graded rubber), really turns these SC's into world-class handlers - especially considering their 4000lb weight (w/driver)!

Several of the 2-into-1-into-2 exhaust systems are now installed on members' SC's. In addition to being more effective than the Tru-Duals, they are somewhat lighter, and especially on 89-91 gas tanks (which require heat-shield modifications), are easier to install than the Tru-Duals, due to the single, mandrel-bent section thru the gas tanks. With the 3" system, a hi-flow Magneflo resonator-muffler can be used (recommended where sound is a consideration). The 3-1/2 " system, recommended for over 350hp applications w/headers, or when doing head & cam work, does not come with a resonator as I have been unable to find a source for a 3-1/2" resonator. The price of the Tru-Duals remains at $495, however, mufflers are now optional. The recommended muffler is the Dynomax Super Turbo, FACTORY REPLACEMENT, which is considerably more expensive than the universal-fit Super Turbo which I have been including with the Tru-Dual system. The price of the 2-1-2 system has been dropped to $599, less mufflers, as the R&D has been paid for. There has been much chatter on the SCCoA web site about exhaust systems & mufflers - Flowmaster vs. Dynamax vs. Borla vs. SCCoA Tru-Duals. The three "name-brand" systems retain 2" exhaust pipes and a single 2-1/2" tail-pipe (same sizes as factory), too small for even stock SC's The Dynamax cat-back system even retains the stock resonator - an extremely restrictive piece (6 lbs back pressure alone!) with only a single 2" out-let (internally). The SCCoA Tru-

Dual system blows away the competition, hands down, with dual 2-1/4 pipes all the way from behind the cats to the tail-pipe tip, including the h-pipe (balance-tube).!

For those of you using nitrous-oxide (a growing trend, so it seems) and for other high hp applications, you might want to try using a colder range spark plug than the stock replacement Bosch or Motorcraft. Autolite makes a single-platinum plug which is one heat range colder than stock, part # AP2543. If you need a set and cannot locate them locally, I sell them for $7 a-piece, plus shipping, or course.

Two new "killer" items which are now available and selling very well are the black anodized license plate brackets, and the 24k gold plated pen & pencil holders. Both items have the T-bird "wing insigna" and "SCCoA" engraved in them and are truly awesome! Color pictures of both of these SCCoA specialty items are on the SCCoA web site. Check it out!

SCCoA CLUB EVENTS -

Ford Expo 1997 over Labor Day was a great success. (see following article written by Bill Evanoff). The high-lite of the meet was "Nitrous Neal" Frisbee's record setting 12.4 ET @ 112.5mph pass down the 1/4 mile. This was done on a hot day - 85+ degrees air temperature - track conditons were lousy, making good traction an impossibility. Everyone who ran complained about the slick track, and even though Neal was running slicks, there was no way he could "hook" his 450hp+ nitrous-fed monster. Neal had previously run 114mph+ at his local track on a cooler day - I'm sure his "bad-boy" is capable of low, low 12's @ 115+ mph under ideal conditions! Needless to say, he is still the reigning, undefeated, and undisputed "KING OF THE SUPERCOUPES". He claims to be retired from competition (see enclosed interview by Rich Thomson), but I know Neal - as soon as some of these Coy Miller beasts are turned loose on the unsuspecting public, and Neal's records are challenged, he will resign from the AARP, throw away his Medicare card, eschew his Social Security check, jump up out of his rocking chair, and rise to the occasion!! LONG LIVE THE SPIRIT OF FRIENDLY?? COMPETITION!!

As mentioned previously, 1998 promises to be a banner year for the SCCoA. As I will once again have a fire-breathing ride under my fat, little derriere, we plan on holding an event at least once a month, starting with the Kenny Holcomb 1998 5.0 Civil Wars - the 3rd annual "Battle of Rockingham" North vs. South 5.0 Shootout, April 18-19 at Rockingham Dragway, Rockingham, NC. Kenny Holcomb, of Holcomb Motorsports, Inc. (inside front cover of both Super Ford & MM&FF magazines) has invited the SCCoA to participate in this earth-shattering event! Check out his add on page 2 of MM&FF magazine - there it is, listed with all of the other events, SUPER COUPE CLUB SHOOTOUT! HEY! HEY!, SCCoA!

An even bigger bash promises to be "The Ford Event of the Century", The Mobil 1 sponsored "WORLD FORD CHALLENGE" held May 15,16,&17 1998 at Beech Bend Raceway, in Bowling Green, Kentucky. Co-sponsored by Super Ford Magazine & the Performance Ford Club of America, it will reportedly be covered live by ESPN2! In addition to all-Ford drag racing, there will be a Super Ford Auto Show Spectacular, a manufacturers' midway, swap meet, and several cruise-ins, all the way from Ontario, Canada, California, Texas, Florida, & New York City..... NEW YORK CITY!!.... Yes, sports fans, THEY need to play too! They have all promised to behave....not try to fight when they lose....and, especially, not to say "YO!".....or "HEY, JOEY!" around us southeners! Ear-rings will be allowed, however!! (It is rumored that Hank Williams, Jr. will supervise the Yankee contingent from NY, due to his "fondness" for the "Big Apple"!).

The first week-end in June brings us to our 3rd annual SCCoA convention in Carlisle, PA! For those of us fortunate enough to survive the two above-mentioned events, this years' Carlisle meet should be bigger & better than ever - more than 50 SC's will be in attendance! Soon, the SCCoA will take over the show-field!

Other events will be up-coming in July (maybe Milan, MI), and August. Columbus, OH over Labor Day, again? Throw in some Car-Guys road racing events during your spare time, and, hey, no-one can complain about not having a proper venue to show off their new SCCoA parts and resulting awesome performance!!

Wayne Ing, an SCCoA member from Ontario, Canada has decided to start up a SCCoA chapter in his area. I think it is a great idea, as individuals is his locale can get together and compete and otherwise compare notes on their beloved SC's. I have mentioned this idea before, as we have many members who cannot make the long treks to our mostly east coast & mid-America club meets. Anyone who wishes to

start up local or area chapters of the SCCoA will certainly have my blessing; as a matter of fact, I would be willing to help sponsor such persons by letting them purchase SCCoA parts at cost, or close to cost! Let me know!

Last but not least - there WILL be a fourth annual newsletter in about month - as soon as Coy Miller dyno's the next 3.8L. The 2nd dyno engine belongs to Joe Sarcona, from Staten Island, NY. His engine will have a little more cam than Walt Nile's engine, PLUS, a 100hp nitrous kit!! My engine is 3rd in line - Coy has promised it will be ready by early March, in time to have my AOD up-dated with the SVO wide-ratio kit & all the Art Carr goodies (10" converter, 1-piece billet input shaft, 8-clutch pack, etc.), plus the Trans-Go shift kit featuring the full-throttle up-shift into over-drive! After my engine is finished, Coy has at least 3 more 3.8L SC's to do, plus several sets of heads. As all of the R&D is complete, and parts are available, the long waits should be over.

Well, it's time to shift gears.....

FORD EXPO 1997 by Bill Evanoff

Thunderbird Supercoupes descended upon Columbus, Ohio over the Labor Day holiday. The Supercoupe Club of America participated in the Performance Ford Club of America "Expo '97" by holding their second mini-meet at the end of summer event. Expo '97 caters to a wide range of interest by offering quarter mile drag racing, a large swap meet, a car corral, judged showing, non-judged showing, and car club mini-meets.

The show started at 9.00a.m. on Friday, Aug 29'th. Club members from as far away as North Carolina, New York, Missouri, and Virginia who had already been on the road since Thursday afternoon slowly started arriving by mid-morning. Several members took advantage of the easy drag strip access by running their cars down the quarter mile. It seemed unanimous that the track wasn't offering much in the way of traction that day for the street tired SC's. Times ranged between mid 14s to mid 15s with everyone complaining about too much wheel spin. At the end of the day we broke up into small groups and hit a few of the finer steak houses around the small town of Reynoldsburg. Upon retuning to the Lenox Inn late Friday, it was immediately apparent that Saturday would be a big day. The parking lot was FULL of classic Ford street and drag cars.

As I entered the gates of the National Trails facility on Saturday morning, I was amazed at the crowd. The visitor and show car parking was filling up fast, the swap meet area was bustling, and the tire smoke and screaming engine noises coming from the drag strip was non-stop. I was the tenth SC to pull into our groups' line of parked cars. I laughed when I noticed that the lineup of cars went ...red /black /red /black/ red..and so on. This happened by accident - those already there told me - it wasn't planned. The morning was mainly spent meeting and greeting the many new SCCoA members who had shown up since Friday. Everyone loved talking shop and learning about the numerous new speed parts that were actually installed on many of the SCs in attendance. Headers, Tru-duals, and raised/enlarged outlet adapters (SC tops), and lowering springs were very popular modifications. The next most popular items were larger intake pieces such as mass air meters & throttle bodies. Several member had installed SCCoA (or Spearco) intercoolers and Griffin radiators. They made the front of the engine compartment spectacular looking with their buffed aluminum appearance. Custom stereos, custom intake ducting, altered interior and exterior appearances, and aftermarket wheels were also popular. Although customizing was evident, numerous SCs remained in their factory fresh, and beautiful stock appearance. It was amazing how many new looking, high mile, early model SCs were in attendance. A total of eighteen SCs finally arrived Saturday alone. The vast majority were painted either Bright Red or Black. Only one Titanium and two Oxford White cars broke the color barrier, plus one 35th Anniversary Edition. That evening a pizza party was held at the Lenox Inn pool for all the members, and many attended a cruise night nearby after the pizza was polished off.

Sunday was similiar to Saturday in attendance and enthusiasm. About the same number of cars were present but several new cars were there while several others dropped out. The highlight of the day was Neal Frisbee's quarter mile run. Neal knocked of a 13.1 second run last year at Columbus and wanted to retain his crown as the fastest SC in America. One could easily tell that Neal was serious about his car. Virtually every component known to exist in the SCCoA parts list was present on his car and many items that he dreamed up by himself. One of the most ingenious and obvious items was his dual-tank intercooler with a dry ice reservoir attached to it. Prior to his run, Neal loaded up the reservoir with dry ice and supercooled his intercooler. The smoke rolling off it looked impressive and the intercooler slowly developed a mild frost from the ice. (Side Note: Another member had been amazed on Saturday, that just cooling down his stock intercooler with a bag of ice had resulted in a .7 second drop in his ET (15.6 to 14.9 seconds). Obviously any method of reducing the charge temperature on your SC will make alot of power. That's why an intercooler fan is an inexpensive power adder). Neal prepped his car meticulously. He ran a set of Mickey Thomson DOT slicks, 60hp shot of nitrous and prayed nothing broke. He made a

flawless run of 12.4 seconds @ 112 mph! Neal retains his crown for another year. I have heard of club members saying they have seen other SCs run faster, but nobody has yet to verify any of these claims. Neal welcomes all challengers. Unfortunately, Bill Hull, the SCCoA president, was planning on being present with one the Coy Miller prepared engines but it didn't happen. Coy is approx. 85% complete with Bill's engine and they still want to perform dyno testing and tuning before it is installed in Bill's '91 SC. If you remember, Bill's previous best was a 13.5 before he decided to let Coy improve it.

Everyone agreed they had a great time in Columbus and were looking forward to meeting again next spring in Carlisle, PA. The SCCoA welcomes and encourages everyone to organize an outing elsewhere in the country. So far, I have seen a possible outing in Dearborn, MI at the Henry Ford Museum. Lets start more opportunities for SCCoA members to gather throughout the country.

Interview with "Nitrous" Neal Frisbie

For thoes of you who haven't had the pleasure of attending the last two **PFCA Ford National Drags** just outside Columbus, OH. Let me tell you about one individual who's need for speed is big. Neal Frisbie is what I call a true "car crafter" one that finds a new way of doing things that no one else has done. Neal Friebie who is called by many as "Nitrous Neal " is the current SCCoA record holder for the "Fastest SC in the Quarter Mile". I met Neal last year at the Ford National Drags and I thought an interview with him would be more informative than an article would be. The interview that follows was conducted September 28, 1997.

Q: Did you buy your car new or used? When, where, and why did you buy a SC?

A: I bought my 1990 SC in 1993 used from a local dealership in Elyria, OH. It was red with black cloth interior, JBL stereo system, and had the AOD transmission. I was looking for a Mustang 5.0 when I stumbled across the SC sitting in the lot. I had read an article about the SC two months eariler and decided to take it for a test drive. I decided that day after test driving the SC that it was going to be my next car.

Q: What were some of the first modifications you made to you 1990 SC? What did you learn?

A: My first modifications were removal of the stock air box, & installation of a K&N filter. Then after a couple months I took the car back to the dealership where I bought the car and had 3.73 gears installed along with the SC Borla exhaust system installed. I then installed a B&M shift kit and an overdrive pulley myself. After having the Borla exhaust installed I will say that it helped reduce backpressure and really helped the top end speed, while the biggest seat of the pants gain was the 3.73 gear swap.

Q: In 1996 at the PFCA Ford National Drags you ran 13.0 @106 mph. What had you done to the car?

A:

- 73mm MAF with the 19lb tube(C&L)
- 70mm TB with a ported inlet plenum(BBK)
- 1994 Supercharger with S-modification(Magnuson)
- Mild cam with 450 lift @.050, 210 duration exhaust, 197 duration intake(Compition Cams)
- Cylinder heads with oversized valves 1.94 intake, 1.60 exhaust & mild porting
- ARP head studs, roller rockers, O-ringed heads
- 10% overdrive supercharger pulley

I had a stock bottom end, stock intercooler, stock 30lb injectors and a 190 lph fuel pump. I was also using the stock exhaust manifolds that had been mildly ported and removed the stock catilitic converts when I installed the Borla cat-back exhaust system. I had the AOD rebuilt with the wide ratio gear kit, Transgo shift kit, & a 9" 2800rpm lockup torque converter from PCI. The engine fan was wired to come on via a switch & a 180 degree thermostart was installed. I then installed a 60hp nitrous kit (dry manifold system for the SC) which installs before the TB. I was running 13.3 @102mph without nitrous and 13.0 @105 with it in the quarter mile.

Q: Do you recommend using any nitrous on a stock block?

A: You won't have any problems with pistons, crank, or rods but head gasket failure is a major problem with the stock heads. Oversized valves and porting are a must to run nitous safely with a better flowing exhaust being at the top of the list.

Q: In 1997 at the PFCA Ford National Drags you beat your 1996 run with a 12.4 @112mph. What had you done to the car?

A: Maximized cylinder head flow using a Superflow 600 flow bench, Custom designed intercooler, SCCoA headers, complete bottom end rebuild using Eagle connecting rods, and 36lbs injectors. The interesting thing I realized when testing the flow rate of the intercoolers was that the stock unit flowed 232cfm @28in water & Spearco 252cfm @28in water which prompted me to design my own intercooler from two stock units that was able to flow 360cfm @28in water on the flow bench. I added a side pocket which allowed me to use dry ice before runs and increased my air density. I am now running 12.4 @112mph with nitrous and 12.8 @109 without it in the quarter mile.

Q: What plans do you have for next year?

A: Retirement with current title of the "Fastest Super Coupe in America".

If you are interested in any of the information Neal Frisbie has discussed you can reach him at (440) 366 -5979 after 6:00pm EST.

COY MILLER RACE ENGINES
DYNO SERVICE / COMPETITION MACHINE SHOP
1046 MOORE STREET
HARRISONBURG VA, 22802
(540) 433-0545

Listing of C:\WINDYN\901\DATA\DATA9998.SFD
Printed on Jan 7, 1998 at 11:50:34 Stored on Dec 21, 1997
Calibrated on ----------
Configuration name: SF901

Test Description:
Test Type:||Baseline
Job No.:||10444
Test Operator:Coy

Engine Owner:Walter Niles
Engine:||232 SC Ford
Induction System:Magnuson S model S.C. EFI.42 lb. inj. .500 ST

300 RPM Accel.

Cylinder Head: CMRE S.C.

Intake Valve:1.85

Exhaust Valve: 1.625

Cam: Ultra Dyne Cam Timing: 105 degree ICL

Oiling System:Factory SC

Test Fuel Cam 2 & 93 pump gas

Oil: 15w40

Valve Lash: Int. .000 Exh. .000 Ignition timing:10 deg. spout ou
t

EngBor	3.841	inches	EngStr	3.390	inches
EngCyl	6	Number	CorTmp	60	Deg F
CorPrs	29.92	InHg	EngCyc	4	Cycles
SpdRat	1.00	Ratio	CorVap	0.0	InHg
FuelSG	0.750	Ratio	FuelHV	21000	BTU/lb
FuelLV	18000	BTU/lb	PmpRat	1.00	Ratio
VapPrs	0.6	InHg	WetBul	70	Deg F
DryBul	88	Deg F	ConRod	5.956	inches
InValD	1.850	In.Dia	ExValD	1.625	In.Dia
ExPipe	2.00	In.Dia	ExLong	36.0	Inches
IntLng	9.7	Inches	IntMCd	0.350	Ratio
StrTst	557	second			

Listing of C:\WINDYN\901\DATA\DATA9997.SFD
Channel Group: Corrected Power Page 1
Printed on Jan 7, 1998 at 11:46:09

EngSpd RPM	STPTrq Clb-ft	STPPwr CHp	BSAC lb/hph	FulA+B lb/hr	A/F Ratio	Air 1 scfm	BSFC lb/hph	VolEff %
2200	119.8	50.2	21.61	57.9	19.31	229	1.194	156.2
2300	116.5	51.0	21.37	59.2	18.95	230	1.201	150.1
2400	118.3	54.1	20.30	59.9	18.83	232	1.147	144.8
2500	118.3	56.3	19.49	59.9	18.83	232	1.101	139.0
2600	127.1	62.9	17.74	60.3	19.02	236	0.992	135.9
2700	135.9	69.9	16.11	60.4	19.16	238	0.894	132.1
2800	148.2	79.0	14.53	60.5	19.50	242	0.792	129.9
2900	164.8	91.0	12.88	60.5	19.94	248	0.687	128.2
3000	185.9	106.2	11.34	60.0	20.70	255	0.583	127.3
3100	211.8	125.0	10.09	59.7	21.81	267	0.492	129.1
3200	211.8	129.0	9.78	59.7	21.81	267	0.477	125.1
3300	240.4	151.0	8.72	59.6	22.83	279	0.406	126.5
3400	274.9	178.0	7.70	59.5	23.83	291	0.344	127.9
3500	275.0	183.2	7.48	59.5	23.83	291	0.334	124.3
3600	275.0	188.5	7.27	59.5	23.83	291	0.325	120.8
3700	342.2	241.1	6.00	59.8	25.02	307	0.255	124.3
3800	461.0	333.6	6.12	122.1	16.66	435	0.376	170.6
3900	473.0	351.3	5.99	124.1	16.50	447	0.363	171.4
4000	471.3	358.9	6.05	125.2	16.86	461	0.359	172.6
4100	471.1	367.8	6.07	129.5	16.78	475	0.362	173.0
4200	469.6	375.5	6.10	134.9	16.51	486	0.369	173.1
4300	465.8	381.4	6.07	140.6	16.25	492	0.379	171.1
4400	463.6	388.4	6.10	144.0	16.32	503	0.381	171.0
4500	465.4	398.7	6.11	160.9	14.98	517	0.415	171.9
4600	460.0	402.8	6.18	167.3	14.71	529	0.427	171.7
4700	455.2	407.3	6.27	176.5	14.30	543	0.446	172.5
4800	449.4	410.7	6.33	186.0	13.81	553	0.466	172.1
4900	446.7	416.7	6.38	185.9	14.13	565	0.459	172.4
5000	436.2	415.3	6.50	190.2	14.00	573	0.471	171.3
5100	431.7	419.2	6.50	185.3	14.28	578	0.455	169.7
5200	423.7	419.5	6.59	187.8	14.30	587	0.461	168.9
5300	413.5	417.2	6.71	187.9	14.47	594	0.464	167.8
5400	403.4	414.8	6.85	185.3	14.90	603	0.460	167.2
5500	387.6	405.9	7.11	189.7	14.82	614	0.480	166.2
5600	380.6	405.8	7.22	188.4	15.12	622	0.477	165.7
5700	386.7	419.6	7.05	193.6	14.94	629	0.474	164.5
5800	385.8	426.0	7.00	195.9	14.95	633	0.473	163.1
5900	372.9	418.9	7.19	201.3	14.68	639	0.495	161.8
6000	348.7	398.4	7.63	207.0	14.41	645	0.535	160.4

13 LBS Boost

9.5 Boost

Boost

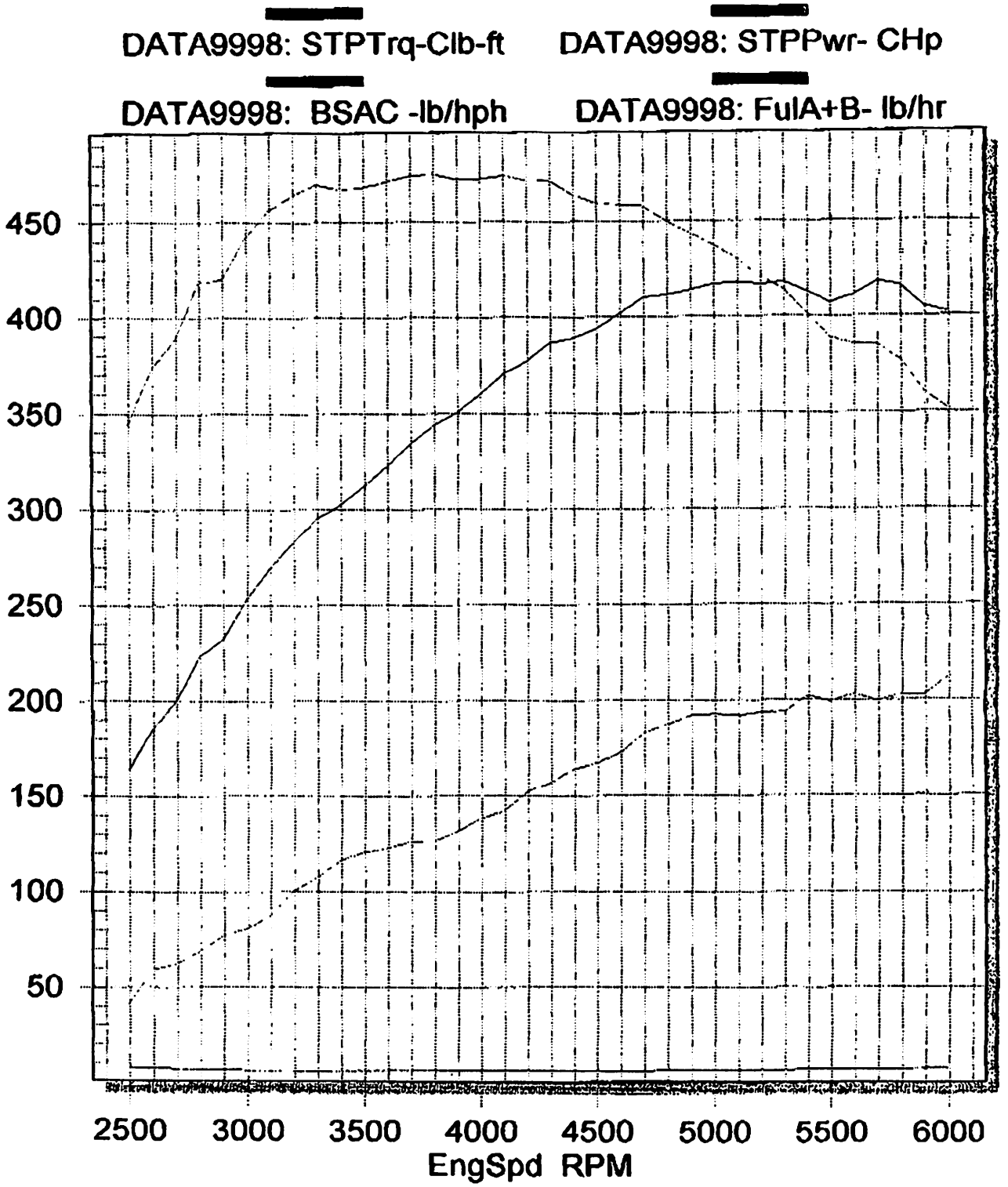
Balls

Listing of C:\WINDYN\901\DATA\DATA9997.SFD
Channel Group: Exhaust Temperatures Page 1
Printed on Jan 7, 1998 at 11:46:09

EngSpd RPM	Exh1 degF	Exh2 degF	Exh3 degF	Exh4 degF	Exh5 degF	Exh6 degF	Exh7 degF	Exh8 degF
2200	1154	1189	1152	1116	1210	1166	72	70
2300	1155	1189	1152	1116	1210	1166	72	70
2400	1156	1184	1153	1116	1210	1167	72	70
2500	1156	1184	1153	1116	1210	1167	72	70
2600	1157	1183	1153	1120	1211	1167	72	70
2700	1157	1182	1153	1121	1212	1169	72	70
2800	1157	1182	1153	1122	1212	1170	72	70
2900	1157	1182	1153	1123	1212	1170	72	70
3000	1160	1182	1153	1123	1212	1170	72	70
3100	1162	1182	1153	1123	1212	1171	72	70
3200	1162	1182	1153	1123	1212	1171	72	70
3300	1162	1182	1156	1123	1212	1171	72	70
3400	1163	1182	1157	1128	1212	1171	72	70
3500	1163	1182	1157	1128	1212	1171	72	70
3600	1163	1182	1157	1128	1212	1171	72	70
3700	1163	1182	1158	1130	1213	1171	72	70
3800	1258	1286	1213	1226	1276	1267	71	70
3900	1268	1298	1221	1236	1284	1277	70	69
4000	1279	1312	1227	1245	1289	1285	70	69
4100	1288	1323	1238	1254	1295	1295	70	67
4200	1295	1330	1248	1267	1303	1304	70	68
4300	1299	1331	1250	1271	1309	1310	70	69
4400	1303	1339	1255	1280	1309	1317	71	70
4500	1311	1346	1257	1289	1314	1323	71	70
4600	1318	1352	1259	1295	1319	1327	71	69
4700	1324	1360	1266	1306	1329	1342	71	69
4800	1330	1366	1270	1313	1335	1348	72	69
4900	1337	1372	1277	1320	1338	1358	71	69
5000	1344	1379	1283	1329	1345	1366	72	70
5100	1352	1384	1288	1333	1349	1368	72	70
5200	1356	1389	1294	1337	1352	1376	73	68
5300	1358	1390	1296	1340	1360	1384	73	69
5400	1361	1396	1303	1345	1365	1390	73	69
5500	1364	1399	1303	1345	1367	1395	73	69
5600	1371	1406	1310	1352	1376	1404	72	70
5700	1376	1415	1316	1359	1383	1416	73	70
5800	1378	1420	1324	1366	1390	1424	71	70
5900	1385	1430	1328	1375	1401	1435	71	70
6000	1393	1439	1336	1382	1408	1441	71	70

Corrected Power

DATA9998,



Coy Miller Race Engines

Date: 01/15/98 WinDyn™ - SuperFlow Corp. © 1996 Time: 17:53:54

Un-plugged and *Flying!*

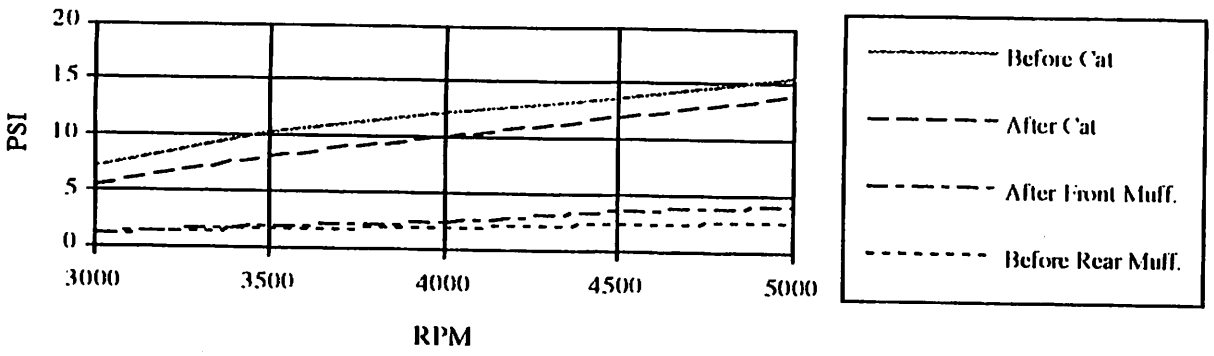
by Charles Warner

Having gone the way of overdrive pulleys, cracked heads and blown head gaskets the assertion by Bill that the stock SC exhaust system causes cracked heads and blown head gaskets caught my attention. Tending not to believe everything I hear I decided to do the research required to understand the problem and let physics provide the facts. So, armed with a great deal of motivation (my cracked head episode set me back two grand) I set out to determine if the SC's exhaust system is really as bad as Bill claims.

The test platform was my modified 91 SC which sports ported and chambered heads, high lift cam, overdrive pulley, ported stock exhaust manifolds, large fuel injectors and a few other goodies. I figure the car is a good test platform to determine if a better exhaust system is useful for Super Coupes on their way to making big time horsepower.

I started out by tapping into the stock exhaust system at several points and measured the back pressure at wide-open-throttle (WOT) over a RPM range from 3000 RPM to 5000 RPM. The results are a real eye opener, see the plot below. I had a hard time believing what I saw, 15.5 PSI back pressure at 5000 RPM's!! The pressure readings were so off-the-wall I doubled checked the readings with another gage, same results.

SC Stock Exhaust Back Pressure @ WOT



Some problems caused by this high back pressure situation include:

1.) During the overlap period (the time when the piston is at or near top-dead-center and both the intake and exhaust valves are open) there is more pressure at the exhaust valve then at the intake valve. Which way will air move? Humm, exhaust gases are flowing into the intake manifold! Race engines with long tube headers create a vacuum at the exhaust valve during this period to purge the combustion chamber of exhaust gases. Exhaust pressures so high that exhaust gas wants to flow into the intake manifold is obscured.

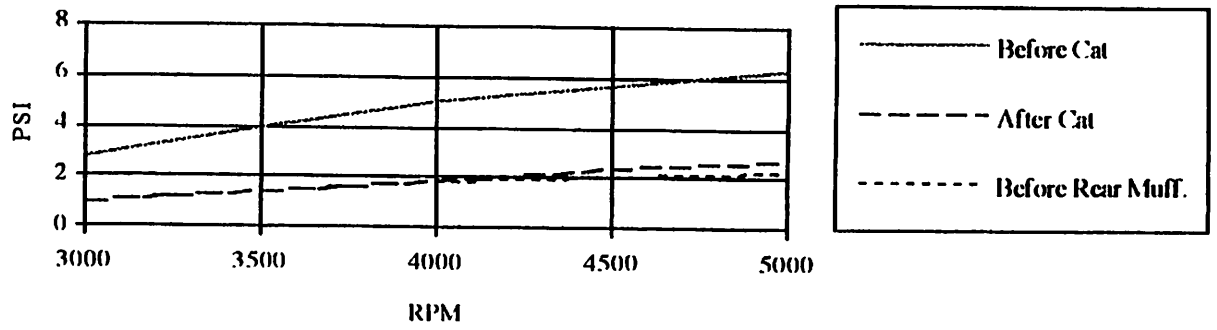
2.) After the exhaust stroke the combustion chamber is still charged with hot exhaust gases at 15 PSI. Assuming exhaust gas temperatures are 1500 degrees and accounting for the cylinder to combustion chamber volume ratio the intake air temperature is raised by over 150 degrees! The tendency of a fuel/air mixture to detonate has been studied for decades, the primary factors are: 1.) Pressure (compression ratio), 2.) Temperature of the mixture, 3.) Time (the duration the gas mixture is held at the first two conditions) and 4.) Fuel chemistry (octane rating). There are other factors such as combustion chamber shape, flame pattern, etc. however, temperature is one of the significant factor. In fact, some of the Buick Grand National racers run 160 degree thermostats to reduce engine temperatures 30 degrees in an attempt to reduce detonation while running high boost pressures.

3.) When the piston is moving up on the exhaust stroke it is doing work (pumping air) against high pressure. To move enough air to produce 350 HP (about 600 CFM) at 15 PSI requires around 30 horsepower. I can think of better uses for this energy, like turning wheels.

I'm convinced it was designed that way to make the Super Coupe just a tab bit slower then Ford's dear little pony car.

Considering the above I set out to build the lowest back pressure exhaust system possible. I calculated that two 2 1/2 exhaust pipes would have about 1/2 PSI back pressure, but upon inspection of the SC under carriage I could see it was next to impossible to route two 2 1/2 inch pipe through the channel provided for the exhaust pipe. After pondering the situation I soon realized that one 3 1/2 inch pipe has the same cross sectional area as two 2 1/2 inch pipes and would fit the routing channel nicely. It would also have the same back pressure. Well, several weekends and several hundred dollars later I had built a 3 1/2 inch system from mandrel bends that fit like a glove and even used that original mounting brackets. The design is the same as the original except the pipe sizes were increased. The 2 inch pipes were replace with 2 1/2 inch and the 2 1/2 inch pipe and front muffler were replace with 3 1/2 inch. The system was aluminumized and fitted with pressure measurement fitting at the same points as the stock system. The same series of pressure measurements were ran on this system, the graph below tells the story.

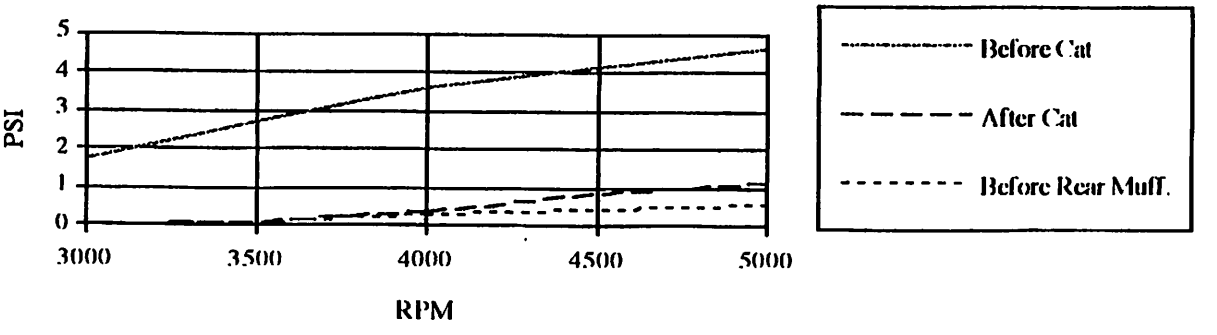
Back Pressure with 3.5 inch Exhaust & Turbo Mufflers @ WOT



The back pressure at the manifold (Before Cat) was reduced from 15.5 PSI to 6.3 PSI, a big improvement. Notice there is only .6 PSI drop between the rear muffler (Before Rear Muff.) and the catalytic converter (After Cat). Things are getting better, but the system still has 6.3 PSI back pressure.

The next two areas to improve are catalytic converters and mufflers. The mufflers I chose were inexpensive or I should say cheap Thrush California Boss Turbo Mufflers with 2 1/2 inch inlet and exit, about $20.00 each. These mufflers didn't improve the back pressure at all, they had the same pressure drop as the original rear mufflers, about 2 1/4 PSI. They were so loud that I could hardly hear the stereo over the roar. One good side effect was they were so loud I couldn't hear my wife saying, 'slow down!, slow down!, slow down!', , , just kidding. I shopped around a bit but couldn't convince myself the mufflers I looked at were both low back pressure and low noise, so I decided to design and build my own. I know I'm getting a little eccentric here, just ask my wife, but give me a break this is my Super Coupe I'm working on. The experimental mufflers I designed are nearly as quiet as the stock system and have a pressure drop of only .6 PSI. So I proved, if only to myself, it is possible to have both low noise and low back pressure at the same time. It would be interesting if someone made a side-by-side comparison of available mufflers to determine which ones really work on blower birds. In any case the back pressure is continuing to drop as can be see in the chart and the power levels are going up a bunch.

Back Pressure w/ 3.5 inch Exhaust & Experimental Mufflers @ WOT



My SC with the original exhaust system accelerated from 20 MPH to 55 MPH in 4.17 seconds. With the 3 1/2 inch exhaust system this time was reduced to 3.80 seconds, an improvement you can really feel. I made several 0 to 60 MPH attempts but wheel spin hampered performance, the 245/50 tires don't even come close to holding the power this motor is capable of producing. The best 0 to 60 time was 5.7 seconds, part throttle through most of first gear then nailing it after 40 MPH. On the exhaust side I still have high flow cats and headers to install. I am sure both will improve performance since the CAT back pressure is 3.5 PSI (I think this can be reduce to 1/2 PSI) and the exhaust manifold's ability to move air with its small 1 3/4 inch diameter is poor. It is interesting to note that the blower (even with an overdrive pulley) could only build 12 PSI boost after the heads were ported and now with the high flow exhaust the manifold pressure has dropped to 10 PSI. I think it is time for a modified blower cap, perhaps a S blower, larger throttle body, high flow intercooler and a pay raise. All kidding aside, the SC responds very well to an improved exhaust system and makes other modifications possible. Just think how high the back pressure must be if you have a S Blower, larger throttle body, etc. and a stock exhaust system.

ADDENDUM by Bill Hull

As many of the new members of the SCCoA have not read the above article, which was included in the Dec 97 issue of Chargin' Thunder, (also on the SCCoA web site), I decided to include it in this issue, as exhaust improvements seem to be the #1 topic of dicusssion on the web, as well it should be! Charles Warner's pressure tests were done with the stock, factory, cast iron manifolds, as he has yet to purchase the SCCoA short-tube, stainless-steel headers. As the factory manifolds are extremely restrictive (identical to the ones on a regular 3.8 making only 145hp) due to their very small 1-3/4" out-let collectors (compared the SCCoA collectors 2-1/2" I.D. collectors), they do not allow but a certain amount of exhaust gases to leave the combustion chambers. That is one reason why adding an OD pulley, while retaining the stock manifolds, creates excess heat build-up in the heads, causing the head gaskets to blow!

Curious to know how much back-pressure was present at the exhaust ports, THE critical area, and in the downtubes, Coy Miller and I hooked up a set of factory manifolds to the first dyno engine. As we had already drilled holes in all the SCCoA header primary tubes for the temperature probes (pyrometers) in order to be able to check exhaust gas temperatures, we decided to drill additional holes in the SCCoA headers and 2-1/2" downtubes w/high-flo cats, and also in the factory manifolds and stock downtubes with 2"cats in order to install pressure guages, to check the back pressure difference between the factory & SCCoA headers before the collector openings, & also before & after the converters.

As Charles Warner mentions in his article, there is more exhaust back-pressure at the exhaust valve than there is boost pressure at the intake valve, causing the residual exhaust gases to want to flow back into the intake tract. Were it not for the fact that the camshafts for the SC, even Coy Miller's high-lift cams, have essentially no valve overlap at .050 lift, the problem would be even more severe! As expected, the back-pressure at the collector on the stock manifolds was extremely high, 18 psi at 5000rpm! Even as low as 3500 rpm, on this big-dog 3.8L, the back pressure was already up to 12 psi! The back pressure before the stock cats was 8 psi, after the cats it dropped to less than 1 psi, as we had no mufflers, only straight pipes, the rest of the way on the dyno exhaust system. The SCCoA headers showed only 2 psi back pressure at the collectors, 2.0 psi backpressure before the hi-flo converters, and virtually 0 psi behind the cats.

The frightening thing about this test was the elevated exhaust gas temperatures with the factory manifolds. Even at 6000rpm, with the SCCoA headers, the exhaust temperatures averaged only about 1400 degrees (see enclosed dyno print-out). This was at the 425 hp level. With the factory manifolds hooked up to this beast, the exhaust gas temperatures averaged 1550 degrees, an increase of 150 degrees, and the engine only made 300 hp at 5000 rpm - a drop of 115 hp - while moving only 410 cfm of air - a drop of over 150 cfm compared to the SCCoA headers at this rpm level. We did not see the need to go any higher as the engine was audiably "loading up" - it definitely did not like the elevated back pressure levels!

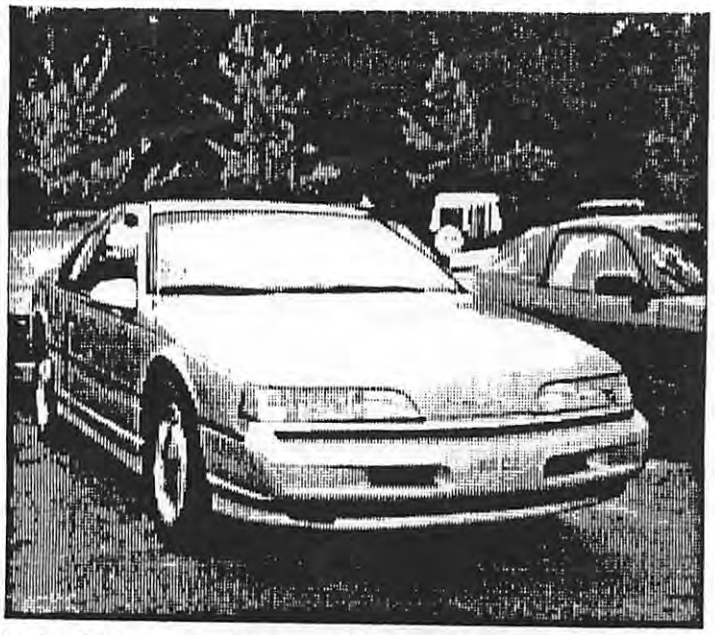
These figures back up Charles Warner's test results concerning backpressure, and also backs up some reported exhaust gas tempertures. Neal Frisbee checked his exhaust gas temperture last year before purchasing SCCoA headers and reported over 1600 degrees at full boost - even without the nitrous ozide turned on. Another SCCoA club member reported to me that he measured 1450 degrees exhaust gas temperture on his STOCK SC at 5000rpm, more than the Coy Miller dyno beast had at even the 425 hp level @ 6000rpm! Obviously, elevated exhaust gas tempertures mean hot combustion chambers - the #1 cause of blown head gaskets! These test results also reinforce my long held contention that headers and improved exhaust systems are not just a performance, but also a durability, improvement.

As mentioned before, the SCCoA headers are not inexpensive. However, improving the exhaust flow is much cheaper than replacing head gaskets or cracked heads. Just as important, free flowing exhaust systems on these "bad birds" allows all other bolt ons to "do their thing". I just makes no sense to try to force more air into cylinders that are already "backed up". Larger mass air meters, throttle bodies, ported plenums, modified SC tops, are very effective, but everything really "comes to together" when the exhaust is opened up! As mentioned in previous newsletters, one needs to study the entire SC engine system, from the air box to the exhaust tips - the old saying "a chain is only as strong as it's weakest link" - certainly applies to the SC. A good example of what I'm talking about - Rich Thomson, an SCCoA member and our "WEBMEISTER EXTRAODINAIRE", recently had his late model 95 blower "S'd", plus added a ported inlet plenum with a 70mm throttle body. Rich already had all of the other bolt-ons, including headers,etc. Ordinarily, S-porting , w/70mm T.B. w/ port matched plenum alone would be worth maybe 30 hp - but because his engine was ready for some big time air-flow, except for his "log-jam" at the plenum, Rich said it felt more like a 100 hp increase! Realistically, his engine probably picked up an additional 50 hp, partly from his new modifications, but equally, from his earlier bolt-ons all coming together!

Bill Hull

FORD THUNDERBIRD SUPER COUPE

This car has the 3.8 litre supercharged engine developing 210 HP in stock trim. The car is powerful but heavy and this spoils the performance and takes the edge from the driving pleasure.



As with all pressure fed engines increasing the power output is easy. Simply increase the pressure! This is achieved by fitting a smaller pulley to the supercharger which increases the pressure to 15 PSI. This combined with significant fuelling and timing tuning to take full advantage of 92 octane gas gives an increase in power of 35 HP to 245 HP.

The comparatively small increase in HP belies a massive increase in torque at the lower end. This is because horsepower is developed at higher RPMs and in supercharged cars the boost pressure is tailing off at high RPMs. This does work to our advantage because when the engine is turning fast, there is little time to inject the fuel into the cylinder between piston strokes. But, because the boost pressure is higher in the 3000 to 4000 RPM reange, there is more time to inject the fuel and so a higher boost pressure can be used. This means that although the power developed at 5250 RPM is only 16% over stock, the increase in torque at 3000 RPM is nearer 35% and it is over 25% from 1500 RPM to 4500 RPM.

This suddenly livens up this heavy car and makes it into a very quick car. 0-60 times will drop by around a second and the quarter miles times will drop by nearly that much as well. The top speed will only increase by 5 MPH due to the drop off in boost at high RPMs. The car feels as if it wants to go and it makes passing other vehicles so much easier and safer. There is no down side, the slow running and cold starting remain exactly the same as stock. Gas mileage will suffer by about 1 MPG but it depends upon how hard you drive the car.

The kit consists of a new pulley and a chip which plugs into the back of the computer. We need to know the computer number when you order. The kit can be fitted in about 1 hour and a new belt is not needed for the supercharger. This kit is available from us or through any of our local dealers who will be pleased to fit it for you as well.

SUPERCHIPS Inc
1958 North County Road 427
Longwood
Fl 32750
Phone (407) 260 0838 Fax (407) 260 9106

Superchips

Superchips are distributed nationally by **Performance Products**, a company that specializes in high performance computer enhancements for the automotive industry. Superchips LTD, located in Bletchley, England, was founded in 1993, and serves our European and Eastern customers, while Superchips Inc., the US operation, is located just outside of Orlando, Florida.

Superchips offers computer enhancements for virtually every computer-controlled Ford vehicle ever made, as well as many other makes. In fact, we offer in excess of 2500 different applications, for vehicles of every kind. There is a Superchip available for almost every version of the beloved Thunderbird, from the Turbo Coupe to the Super Coupe, and everything in between. This includes all of the normally-aspirated engines as well, from the 3.8 V-6 to the 4.6 and 5.0 V-8 models, all of which benefit greatly from the installation of the Superchip.

Superchips has always focused primarily on driveability, and to that end, there is a very important difference between the quality of our modification versus those of our competition. Other chip makers only modify what happens at full throttle (**WOT**), because there are no emissions standards to be met at WOT, thereby ensuring automatic emissions compliance. This means they don't have to spend much money in R&D (Research and development) to get their products to the retail marketplace. We, on the other hand, modify part throttle as well as full throttle parameters, which yields an increase in power at all throttle positions, regardless of vehicle speed, altitude, load, etc. You will feel this increased power in the improved throttle response every time you touch the gas pedal. Since most of us don't spend even 5% of our driving at full-throttle, these part-throttle modification are of extreme importance to the enjoyment of your vehicle.

The specific modifications performed depend upon the exact vehicle & powertrain combination. For normally-aspirated engines, (3.8, 4.6, 5.0) both spark advance and fueling are closely analyzed for any areas of potential improvements, as well as any other operational aspects that are under the control of your EEC-IV or EEC-V powertrain control computer. These modifications are developed while each vehicle is on a chassis dyno, with real-time data acquisition gear in place, monitoring, emissions, A/F ratios, etc., to insure that the engine is in it's optimal state of tune for the use of 92 octane fuel. As a general rule, most normally-aspirated Ford gasoline engines will see a 10 % increase in peak horsepower, and a 15 % increase in peak torque.

The gains from the Superchips 'Super Coupe Performance Kit' are 35 more horsepower, with a, corresponding increase in torque. Each Super Coupe can vary a little, as we program according to the software revision that your Super Coupe was delivered with from the factory. This is another very importance difference between Superchips and our competitors, is that we are what are referred to as "codespecific" programmers. That means that before we can burn a chip with your replacement program, we need to know your software revision code. This information is printed on a white sticker, that is placed on your computer. If you are lucky, the factory did what they were supposed to, and placed a white sticker with this code in the passenger's side door frame, very close to the door hinges. Otherwise, the information must be obtained from the computer's sticker. These codes are usually 3 or 4 digits, a combination of letters and numbers. Some examples are: 0M0, W4D1, W1M, X1A1,

A9U2, C0S, L0E1, U2Y, Z1Z2, M2Y, (where the "0" are zeros). There are dozens of different software revisions for the Super Coupe, and yours might not be any one of the examples above. Even for the exact same year, make, model, and options, there are almost always more than one software revision for that one model year. The automakers are constantly doing running updates throughout the model year, based on warranty claims from their dealerships, driveability problems, and emissions issues. All the automakers do this, and it is very important to program exactly according to each revision, in order to properly maximize power improvements while insuring improved driveability, and ensuring complete emissions compliance.

The Ford Thunderbird Super Coupe is far different from any other Thunderbird, in that it's powertrain consists of a supercharged 3.8 liter V-6, with either automatic or manual transmissions. The factory powertrain programming is much more aggressive for this engine, as there is no potential for power increases thru increased ignition spark advance. As is the case with most forced-induction motors, this engine makes it's power through the use of boost pressure. The first step to increase power then comes from increasing the boost level and reprogramming for the increased level of boost. Superchips has developed a kit for the Super Coupe, that consists of a 10 % overdrive pulley for the Eaton M90 supercharger, and a module containing the chip with the replacement program to compensate for the increased boost level. The replacement program is necessary due to the fact that when the 10 % overdrive pulley is used, this causes a lean condition at WOT (wide-open throttle) at certain rpm ranges, and this must be compensated for. The most common problem resulting from using one of the many aftermarket 10 % overdrive pulley's alone, without a compensated program, is blown head gaskets, which is about an $1,100 repair bill at your local Ford dealer. This is why Superchips has never sold either our chip module or the 10 % overdrive pulley's separately, but rather we require the purchaser to buy the kit complete, thus ensuring that we supplying a safe and reasonable modification kit for your Super Coupe.

SPECIAL NOTICE TO SUPER COUPE OWNERS

As a very special benefit for those visiting the SCCoA Web site Superchips is now offering EEC-IV computer chips separately for any Super Coupe. We can do any kind of custom programming you may require, such as the removal of top speed limiters, (approximately half of all Super Coupes have a top speed limiter) adjustment of rev limiters, compensation for any type of mechanical modification which you may have done, or may be contemplating in the future. We have taken this step of selling chips by themselves for the Super Coupe as a result of many discussions with the SCCoA President, Bill Hull, who, requested we do this in order to provide these needed custom programming services. Superchips would like to invite owners of stock or close to stock Super Coupes for a complete before and after chassis dyno workup, at ***Superchips*** expense. Complete results, and the whole story, will appear in an upcoming issue of the Club Newsletter "Chargin Thunder" and here on the site, for all to see. This will include a complete chassis dyno run, before and after, with plots to show the results. Superchips facilities here in the USA is located just outside of Orlando, Florida. If any SC owners live in Florida or plan on being in the Orlando area give some serious thought to letting us upgrade your Super Coupe, have it appear in print, and all at no charge to the vehicle owner!! For anyone interested, please contact Mike Troyer at Performance Products

mtroyer@compuserve.com . The number is (540) 997-1306, and he will make all the arrangements.

ADDENDUM - by Bill Hull

Aftermarket computer chips have been researched,reported on & otherwise discussed in at least 4 previous issues of Chargin' Thunder, as far back as Sept '96. As Superchips, Inc. (because of their very mis-leading sales brochure on the SC- which was re-printed in Sept 96 C.T)received the majority of the "bashing" (from both myself, & several SCCoA members who had bad experiences with S-chips) we have decided to allow S-chips to not only give their side of the story, but also, to let them try to make amends for their previous erroneous advertising by offering a free, updated dyno test on one or more SCs'.

Mike Troyer, National Marketing Director for S-chips, lives just a short distance from me. After finding out about our "chip-bashing",(after joining the SCCoA-Mike says he owns a 95 SC) Mike called me, very concerned about the "bad press" we had been giving their products. He even told me that the S-chips legal department was considering a law-suit against me for my "un-substantiated" claims against them. Mike said they even had Jamie Turvey (the alleged author of their sales brochure)sign a legal deposition denying any responsibility for certain comments attributed to him (jokingly) in the SCCoA newsletters. My response to all this was basically "I'll stand on my comments, and let S-chips' own sales brochure condemn themselves!

Mike suggested we get together for a "pow-wow" at SCCoA headquarters - I agreed! During our "truce" (and "off-the-record", of course),Mike made several acknowledments to me. He admitted: 1. the S-chips sales brochure on the SC was inaccurate and misleading, was not sure where their hp & especially, torque figures, came from (maybe a Mustang/SC hybrid dyno session, he wasn't sure!)and dis-avowed any evil intent on the part of S-chips. 2. that the S-chip/pulley combo was ONLY for stock or near-stock SCs (not mentioned in their brochure), 3. That (as I had claimed previously in C.T.) the power was produced by the pulley alone - that the chip was included to enrich fuel delivery under boost to prevent head gasket problems due to a lean condition, and 4. that basically S-chips had "dropped the ball" on there SC evaluation. (Fact is, the stock SC fuel delivery (under boost)is already very rich from the factory -approx. 11.5-1 fuel/air ratio, and as we all know, the problem with the O/D pulleys is the extremely restrictive exhaust on the SC!)

However, Mike went on to say that, even though S-chips was considering a law-suit against me, they were serious about re-testing several SCs (in various states of tune) & correcting their sales literature. I agreed - hey!... everyone deserves a second chance - besides, I really am curious about what the results will be!

Not being very computer-compatible myself, and therefore having an inherent dis-trust of all things that are "chip" controlled and derived from silicone, (remember the breast im-plant fiasco?!) (Like where exactly is this place called "cyber-space"??...Has NASA ever sent a space-probe or "lunar-lander" there?? If not, then let's send Al Gore there ASAP to check for EPA violations!), I have never seen the need for an after-market chip for the SC. Further, after doing much research, (including extensive dyno testing with Coy Miller-remember, his first dyno engine with every conceivable modification, made 425 hp - all with a stock '89 EEC-IV box & wiring harness) am still not convinced of the need for any after-market chip -except for the removal of rpm & top-speed limiters, and cooling fan control. For these items, and these alone, (inspite of all of the above), I would still recommend Superchips, Inc. because, although I believe the rest of the after-market chip marketers use smoke & mirrors for their Ford products, Superchips, Inc. really is qualified, willing, and able to help us.

BIRDS OF A FEATHER....Letters to the Editor-

Dear Bill,

I have just received my membership and my 9-inch K&N. Ever since I have received the newsletters I have not put them down, including outlining every bit of it. I would like to know if you could answer some questions for me?

1. My 95 SC with AOD runs in the mid 15's bone stock with 1.1+ reaction times. Is it possible to run in the 13's by just getting bolt-ons and not going into the motor. (It only has 14,000 miles).
2. I am getting Tru-duals in the spring. Is there anything else I should do to my car before I get the 10% OD pulley?
3. Which SC's were quicker, 89-93's or 94-95's (stock)?
4. Last thing, I can not find out how many 95 SC's were made, could you help me out?

I will be waiting by my mailbox for the next newsletter, if it as good as these last two I will have many more things to think about for my car. Last thing, I'm proud to say that I own the world's best, big, bad sleeper. Thanks!

Tery Smith, mem#641
Tsmith@hto.net

Terry,

Glad you enjoy Chargin' Thunder! It is possible to run in the 13's with only bolt-on parts, as the SCCoA now has enough bolt-ons' to easily make 350hp, without removing a valve cover. However, at these power levels, traction will become a big problem, so you might as well make plans for a set of T/A drag radials. Reaction time is primarily a human variable (not really dependant on the car itself, although it does take into account how quickly the suspension/chassis reacts {(assuming good traction this should remain relatively constant)}, and does not affect your E.T, as the clocks do not start until your car actually begins moving, thus breaking the light beam. Reaction time is EVERYTHING in bracket racing, however, especially if you intend to win, as it is hard to make up even ½ second lost on the "tree" as you're going down the track!

Along with the Tru-Duals you should go ahead and install the SCCoA headers & 2-1/2" downtubes as most of the damaging backpressure is in front of the cats (see article in this issue "Unplugged & Flying"). Also the modified SC top is critical, especially with the '95 blower, as they are capable of moving alot of air. However, with the restrictive stock SC top, adding a 10% pulley just stresses your blower, super-heats the discharge air, and is really self-defeating. Once you have installed the modified SC top, and completely opened up your entire exhaust, then you will probably need a pulley to bring your boost back up to stock levels (most members have reported a 2-3psi drop on their BOOST GAUGES when installing both the headers & duals, as the back pressure is no longer present). At this point, you can SAFELY run an OD pulley, and benefit not only from the inceased power the pulley will allow you to make, but also from the vastly increased volume of cooler air your engine will be able to flow because of the free flowing exhaust & SC top.

Although the 94-95 SC's were rated at 20 more hp & 15lbs more torque, I cannot say if they are actually quicker than previous years due to the fact that they may be a slight bit heavier. However, the 94-95 AODE's, with the 2.84 1st gear are probably somewhat quicker than previous years' AOD's. There are so many variables between seemingly identical SCs' it is hard to generalize about which cars are quicker, but one thing we can all agree on - THE QUICKEST SCs' IN ALL THE LAND ARE THE ONES WHICH HAVE SCCoA PARTS ON 'EM!!

As previously listed in our Sept 96 newsletter, 5,741 SCs were produced in 1995, of which only 574 were 5-speeds.

Your editor...

Hey Bill,

First off, I will start by reminding you that you are The Man! As you well know you are somewhat of a DEMI-GOD to us SC owners. But to get to the point, I was taking a look at the recent additions to the SCCoA website and came across something that confused me. I first called you about 8 months ago to join the SCCoA and we had a brief discussion about what my options were for after-market parts for my SC. I joined the club that day but I do remember you specifically saying to me that I should not go with a chip or an ovedrive pulley for the supercharger. But now on your website there is a whole section about the Superchips chip & pully set., which to my knowledge has been out for sometime. I also remember several articles in Chargin' Thunder that talked of these chips in a negative aspect. Could you just give me a very brief reply as to what the deal is with these chips, it would help out a very confused member.
Thank you for your time.

Shawn Hayden

Shawn,

First of all, I want to thank you for your high praise, although I'm not sure what a DEMI-GOD is. If it is anything like a DEMI-MOORE I might be very interested! Secondly, I can understand your confusion about the website postings but remember, although I pay for the site, I have nothing to do with what is posted on it (except for my own, of course). Rich Thompon & Sir William run the website for me as I am computer-illiterate (not good qualifications for a demi-god). There is a dis-claimer at the beginning of the BBS stating that the SCCoA is not responsible for any technical advice posted there. A good thing too, judging from some of the stuff I've read! Anyway, all of your questions about chips & pulleys (I've never said pulleys shouldn't be used, just do exhaust mods first) should be answered in this newsletter - check Charles Warner's article "Unplugged & Flying" (re-printed from Dec '96 C.T. w/addendum by me. Also the article by Superchip, Inc with my addendum. If you want more chips info, order the Sept & Dec '96 issues of C.T. or wait for my book on the SC where chips will be discussed at length (by then we may have new dyno results from Superchips, Inc. to add to the mix!
Thanks again!

editor

July 14, 1997

Hi Bill,

This is an update on the TransGo shift kit, now that I have had it installed in the AOD transmission of my '92 SC.

As you may recall, I ran the car at the East Coast Timing Association meet in May. About halfway down the one-mile course, I had to ease off on the throttle to engage OD, and spent the remainder of each run trying to accelerate ever-so-gently to avoid kicking down into 3rd. While I managed one near-perfect pass with a trap speed of 123.97 mph, most of the time I failed to prevent the transmission from downshifting at about 115 mph, and I was more or less stuck at that speed for the rest of the run.

I had the TransGo kit installed in late June, and attended the Car Guys school at Summit Point Raceway on July 5 & 6. The TransGo kit works as advertised; I have to place a call to a certain shop owner in Springfield, VA who told me the only way to get a WOT upshift into overdrive was to put in a Chevy transmission. The AOD will now upshift and hold 4th gear; no more will I have to listen to that @!#$%&* "upshift indicator" beeping at me on the straights! I am a bit conservative on the track (unlike the guy in the RX-7 who spun off into the dirt right in front of me, for example) in part because I don't ever want to have to explain the "high performance driving school" concept to my insurance company! I did pass a couple of Mustang GTs, however. ☺

When I first considered taking my SC to track events, I thought I might end up trading it for a car with a manual transmission. Now it looks like I will be able to have more fun on these occasions, and still have a car that my wife can drive.

I'm really looking forward to the October ECTA meet. I fully expect that their 130 mph limit for stock-equipped vehicles (OEM seat belts and no roll cage) will be attainable this time around.

Steve

Steve McCollom
Member #234

Saturday, September 13, 1997

Bill Hull - President
Super Coupe Club of America
2239 Banbury Street
Charlottesville, VA 22901

Dear Bill,

Thought I'd drop you a line on my recent AOD Transmission rebuild. At 120,000 miles, my overdrive band gave up the ghost -- if you know what I mean. It started slipping going into 3rd. I contacted my good friends at FPS Ford Performance Specialists in Douglasville, GA (just west of Atlanta). Bob Long, Doug Lewis, and Tommy Higgins' expert performance work has attracted customers from all over the Southeast. Doug Lewis performed the rebuild on my tranny. This included SVO Wide-Ratio / Upgrade Kit (part # M-7398-D) with a one piece solid input shaft. Then he added a Transco Shift Kit (part # (AOD-HP). He topped this off with synthetic fluid.

Needless to say, Doug did an awesome job! It holds any RPM in any gear! It's like a totally different S.C.! The one piece solid input shaft really does its job. When shifting into 3rd the old tranny would drop close to 1000 RPMs. Now, it only drops 3 - 4 hundred RPMs, and man it's gone! See ya - GM boys in your slow toys!

I would like to thank you again, Bill, for starting the S.C. Club. Without it, I would have never been exposed to any performance parts for the S.C. I highly suggest that everyone who really wants performance out of their S.C. upgrade your tranny. It's fairly expensive, but well, well worth it! ! ! I recommend anyone wanting maintenance or high performance work to contact Bob, Tommy or Doug at FPS (770) 577-3005. The S.C., Mustang & SHO experts!

Hey, Bill, I'm sure looking forward to hearing about the Coy Miller S.C. motor tests and the S.C. results from Labor Day weekend. I hope you're planning a trip South real soon. We're looking forward to meeting you!

Sincerely,

Rick Cunningham
2495 Pasadena Place
Smyrna, GA 30080
(770) 436-6034

Rick,

Thanks for your letter! Everyone who has tried the SVO wide-ratio kit & the Trans-Go has raved about the increased reliability and performance! Hope you enjoy the Coy Miller dyno results - more soon to follow! We'll be in Rockingham, NC, in April, maybe Atlanta later on in the summer.

Editor

Dear Bill,

I'am member #560. I joined the club about three weeks ago but if knew about the club when you started it I would've been one of the first. I have a 92 AOD and since I owned it, the only aftermarket parts I been able to find was an underdrive SC pulley and a Flowmaster exhaust system. I bought the underdrive pulley last year and after installing it I drove down the road two miles, on the way back I had anti-freeze pouring out of my tail pipes. I did the head gaskets myself (yes, using Felpro gaskets). While the heads were off, I was looking for anything to upgrade the performance of the car (roller rockers, roller lifters, bigger injectors and especailly headers and a high performance cam) but couldn't find anything. Ofcourse now that I have the car back together I want to take it apart again. I never wanted a Hypertech chip because I knew Ford's stock computer works better. Plus a hypertech chip made my brother's Grand National run like crap..

Right now my car has the stock pulley back on it and will stay that way until I get headers on it.

I have a few questions about my car (nothing about the motor because you've answered everything needed to know in your news letters.)

1) *What are the things under the access panels under rear seat arm rests?*
2) *Can I change the axle ratio without dropping the axle? (I'm afraid I'll mess up the ABS)*
3) *Has anyone busted their front springs and didn't know how they did it?*

Thanks,

Robert L Hardegree (443)679-8503

Robert,

The things under the access panels are the seat belt retractors. In order to change the ring & pinion the half-shafts must be removed from the rear-end housing, & the housing removed from the car. However, even though the ABS must be disconnected, any good mechanic should be able to do the job without messing it up. To my knowledge, the only person who has busted his front springs and did not know how they did it is Bubba T. Leddbetter. However, Bubba thinks it happened while chasing after his best coon-hound, Jamie T!; but seeing as how he had just taken a few "TOTES" of "rope-tobakker", he can't say for sure!

Editor

September 10, 1997

Mr. Bill Hull, President
Super Coupe Club of America
2239 Banberry Street
Charlottesville, VA 22901

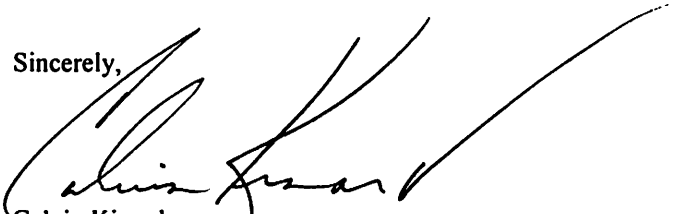
Dear Mr. Hull:

I recently ordered headers (jet hot coated), down tubes with high flow cats, a true dual exhaust system, and 4 new struts. I would like to order the SC adapter air outlet at this time. I enjoy being a member in this club and look forward to my newsletter (with new ideas and insights) every month. I recently had a tune-up performed on my SC and as part of this tune-up I requested the de-installation of the hyper-tech chip I had inherited when I purchased the automobile used last year. It caused the motor to run rough and the check engine light came on all the time. The card runs MUCH smoother now with a minimal (read barely noticeable) decrease in power—Many Thanks for your relentless bashing of this overrated chip !

I would like to have Coy Miller Race Engines rebuild my 3.8 when the time comes (probably in the next 30,000 miles). Is it possible to have the engine "Swain Tech" coated at the same time? The other question I have relates to body parts. I purchased my SC used and the car has suffered a minor traffic accident. No major damage but the front nacelle (nosepiece) was replaced with a LX nose. This piece is the same as the SC unit except it does not have the SC emblem pressed into the rubber. Ford does not license anyone to make this part for the SC; you can only replace this by buying a used front-end clip (hood, nosepiece, and two fenders), if you can find one. Is there any other option I have not found?

I am also extremely interested in the Mazda M5R2 5-speed replacement. The factory unit is not synchronized very well (especially between first and second). There was mention that this would be covered in the next issue of Chargin' Thunder.

Sincerely,



Calvin Kinard
Senior Network Systems Consultant
International Network Service
E_Mail Calvin@ins.com

Calvin,

The time to have the Swain thermal-barrier coatings done is, indeed, when you have your engine rebuilt, as these coatings are for the internal engine parts. I would not know where to find a front nosepiece for a SC except from Ford or a salvage yard.

I am 99% sure a HD Tremec 5-speed will bolt into a SC. SVO makes a blow-proof bell housing which will bolt up to a 3.8 block & also has the Tremec bolt pattern. I believe the transmission cross-member will work w/ no mods..... your driveshaft may need to be lengthened/shortened, and your clutch linkage may need to be modified. Also, your shift linkage will be in a slightly different location in your console, which may also need to modified, but the up-side of all of this is, you can then use an after-market shifter like a "Ripper" or a "Pro-Tower"! As no one to my knowledge has ever actually done this swap, I cannot give you any more specifics. Why don't you be the first one to do this, write an article for Chargin' Thunder about your adventure, and become an over-night SCCoA celebrity, as many 5-speed owners are dissatisfied with their Mazda's. Thanks!

Editor

Jon and Cindy Thibodeau

Friday, September 26, 1997

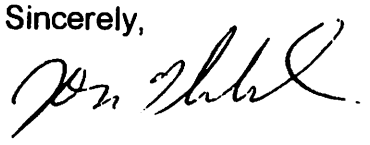
Bill Hull
President
Super Coupe Club of America
2239 Banbury Street
Charlottesville, VA 22901

Dear Bill,

Enclosed is my core for the raised blower outlet I purchased from SCCoA last winter. The installation went pretty smoothly. The improvement in performance, though not as drastic as when I installed the true dual exhaust, is significant. Thanks for being the source for high quality parts to upgrade our performance car of choice. Before you and SCCoA came along the usual question I got from the parts man was "A super what?". Thanks again for the hard work and quality products.

Please apply the core refund to my 1997 club dues, and we'll call it even. Have you had a chance to put out the next quarterly? The last one I received was the June '97 issue. Keep up the good work.

Sincerely,



Jon Thibodeau

Jon,

Thanks for the letter. The SC tops are truly awesome; still, as you did, the exhaust is the place to start!

Bill Hull, President
SCCoA

January 3, 1997

Dear Bill,

Enclosed is my $40.00 membership fee for the following year. I would first like to thank you for saving me at least $50.00 this year. I have cancelled my subscription to Super Ford as well as Muscle Mustangs and Fast Fords. No more waiting patiently for articles on Super Coupes (or any T-Birds for that matter) just to come up empty. Chargin' Thunder makes up for their neglect quite nicely.

I'd like to share a little story with you and all SCCoA members. This fall, following the Super Chevy event at Maple Grove, I went with a friend to a local sanctioned cruise night. On the way we stopped at his friend's garage to look into having my windows professionally tinted. This gentleman happened to be the proud (Ha) owner of a ligthly modified '87 GN. When I told him I owned a'94 SC, he told me he "was sorry to hear that" with a little chuckle.. After listening to a few more jokes, we headed to the cruise. After about half an hour of cruising, and toally by coincidence...NOT, I ended up on Mr. GN's bumper at a stop light. And that's were I stayed until the next light, and then the next. While I know my SC didn't have enough to pass him, she sure stuck to his tail like glue. I never saw Mr. GN again, but I'm sure he gained a little respect for the "underdog" SC.

Modifications to my baby include 3:55's (five speed car), ram air, custom insulated airbox with 9" cone K&N and custom inlet tube, Flowmasters with removed resonator, Auto Specailties pulleys, 160 Therm, and 255/50R16 Comp/TA's. I've had the boost pulley and Flowmasters since new and haven't had any problems (knock on wood.) I'd like to order a 3/4 blower top when I bring the car out of winter storage. With the '94 car, how much further can I go till I have to upgrade the fuel system? Also, I had a hurst shifter in my '88 Turbo Coupe and I loved it. Do you know of any short throw shifters for my lovely mazda tranny?

One more quick question. I joined the club last July and immediately received my membership package as well as the March and June issues of Chargin' Thunder. Since then I haven't received anything. Is this hopefully an oversight? If possible could you send me the issues I missed?

Well, keep up the good work. I hope I finally get to meet you at a show this year.

Dave Ward
RD#1 Box 1682
Barnesville, PA 18214.

Dave,

Love to hear about SCs putting the big hurt on the "GENERAL". The 94-95 SCs were upgraded to a 125lph fuel pump to accommodate the extra 20 hp (up from 110lph 89-93's), and are good to maybe 280 hp, at which time it is wise to go to at least the 155lph, which is good to 325 hp - the 190lph is good to 400hp. There is also available a 230lph fuel pump, which should be good to 450hp+, and highly recommended for Nitous applications. To my knowledge, no one makes an after-market shifter for the Mazda 5-speed.

Editor

Sept 3, 1997

Mr. Bill Hull
SCCOA
2239 Banbury Street
Charlottesville, VA 22901

Dear Bill:

I have been a member for two years now and have found the information in the quarterly "bible" to be very valuable. I own a stock 90 5-speed with only a blower pulley and K&N filter installed. Until it breaks or burns oil by the quart I guess it will stay the same. But when it dies the rebuild will be... well not inexpensive. Having lived with this car for 98K miles I do have a few comments that I think are worth passing on.

My first, second and third problems relate to cooling. The original radiator died after 5 years, plugged up even though I used name brand coolant and had it changed by the dealer. Not really sure why. No great loss other than the cost of a newer one. I replaced it with a three row aluminum model which works OK. One lesson I learned over the years is to be very careful since the radiators are really built from lots of very thin parts which are easily damaged or worse yet punched into.

Then the heater core failed while driving, one minute OK, the next lots of hot water on the passenger's side foot well. Cheap part ($78.00 I think, expensive to replace (6+ hours). When the time to pull the engine comes I think this part might be replaced as well Just In Case.

The electric fan is a good idea to save space, cut loading under full acceleration and provide air flow only when it is needed, at low speeds. However look out when it breaks. The fan alone is $286.00 plus the "Integrated Relay Control Module". I'm not sure about the cost but expect it to go for $150.00 or better. It contains four 40 Amp Relays to control the fan, among others. Those relays are soldered in and eventually will fail.

My solution was to replace the fan and control with a simpler electric fan from Flex-A-Lite, Model 150 for $200.00 complete. It takes a bit of fitting but goes in with no major problems. When looking at the original fan the blades cover 80% of the output space and become a very big restriction in the amount of air that is passed at higher speeds. The Flex-A-Lite fan covers 25% of the outlet space with the blades and should allow better air flow at high speeds.

I had a plug wire go bad following a tune-up at the dealer and the car misfired like crazy under boost. Prestige Ford in Bellevue, WA found the bad wire and replaced it gratis. They have done work for me before with good and honest results. Another dealer who isn't too familiar with the car but who gets highest marks for honesty and service is Bickford Motors in Snohomish, WA. Those guys do whatever it takes to make things right. And they provide free rental cars if the work takes more than one night (same shop rates as everyone else in the area.

While talking to a transmission rebuilder about my wife's Mark VII I mentioned the T-bird and asked his estimate to rebuild the 5-speed should it need to be done. After spitting on the floor he said it was a piece of crap which uses paper synchro rings. His estimate to rebuild was $1,500! He even mentioned that someone was considering a class-action suit against Ford because of this design. Know anything about that? So I looked in the Ford shop manual and sure enough

they mention that the tranny uses "fiber" lined rings. Oh good, just what II wanted. I just hope the termites don't get into it.

I am, well big, at 285 pounds and the seat back has begun to bend to one side. The cause (other than my weight) is the Ford design which uses a single seatback adjuster on the outside with nothing on the inside. Does anyone know of a solution? Has anyone tried Recaro or other after-market seats?

Lastly I bought the Ford JBL sound system with a CD player. The FM is OK, the CD is very good, the speakers fair but the AM radio and Cassette are pure trash. Any ideas on what to replace this with that works but won't bankrupt me?

Keep up the good work on the club newsletter

Very truly yours,

Mike Salish

Mike,

Thanks for your letter. I think we have finally found a source for brass synchronizer rings, which will be a vast improvement for the Mazda 5-speeds. I'll let you know when they are available, hopefully before you have to call Terminix! Also, while I have you on the phone, you are indeed paid up for '98. Thanks!

Editor

SPEED COSTS MONEY - "HOW FAST CAN YOU AFFORD TO GO"?

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Competition Limited High Performance Headlights w/ 2 80w bulbs, 89-93 T-birds,
2 100w bulbs, wiring harness w/fuse link, complete w/instructions..... 139.00
94-95 T-birds, same except 2 80/100w 9007 bulbs..... 129.00
50w Halogen back-up light bulbs 16.95

ENGINE

K&N Lifetime Panel Air Filter..... 42.00
K&N Conical Filters - attach to Mass Air Meter ..... 7".... 34.00
9".... 38.00
C&L/Vortech 73mm Max-Flow Mass Air Meter ...30lb or 36lb tube..... 189.00
Replacement sampling tube..... 35.00
EATON-MAGNUSON PRODUCTS S-Model High Flow Supercharger -
complete with custom porting, matching inlet plenum,and pulley of
choice, SCCoA members only..... 1450.00
exchange
SCCoA Modified SC Adapter Air Outlet 3/4 inch raise including custom
porting & polishing, "Stealth" appearance.....(price minus $60 core)...450.00

Supercharger re-seal kit, incl. Tape, locktite 518, anti-seize, gaskets..... 25.00

OTC Spanner Nut wrench for modified SC top..... 49.00

Blower Pulleys .....Stock 89-93,94-95..... 50.00
SVO 5% overdrive..... 60.00
Auto Specialties 10% O/D..... 60.00

SCCoA fresh-air induction system, incl K&N 9" cone, March Ram-air box, 3" mandrel bent inlet tube w/pcv fitting, bolt-on 15hp..... 199.00

Auto Specialties 3-Piece Underdrive Pulley Set..... 179.00

Flex-A-Lite Intercooler Fan 10" Low-Profile..... 99.00

SCCoA High-Flow Intercooler, Custom (Spearco-type)..exchange basis only..... 749.00

Spearco Intercooler Optimizer - spray cooling system w/boost controlled switch, 1-gal reservoir..... 169.00

BBK Throttle Bodies - must switch throttle linkage w/stock.....65mm... 199.00
70mm.. 209.00
75mm.. 219.00
with throttle linkage already modified.....add 50.00

Griffin High Capacity all Aluminum Radiators, Race Quality, Direct Fit,
50% more capacity than stock, incl. pressure release cap, Manual or Auto tran.....695.00
Robert Shaw Hi Performance Thermostats.....180 or 192 degree.w/gasket..... 9.00
SCCoA Pressure-release radiator caps..fits all SC's..... 10.00

Crane or Comp Cams, SCCoA special re-grinds, new cores, call for specs..... 395.00

SCCoA Roller Rocker Set, 1.73, Race quality extruded aluminum, bolt-on, ...299.00
Roller Rocker Set,1.73, Race quality extruded aluminum, bolt-on, adj.....329.00
Roller Rocker Set,1.73, Stud mounted(ARP), w/guideplates, polylocks .. .449.00
Roller Rocker Set, 1173, Comp Cams same as above, but chrome-moly 499.00

Vortech boost-controlled FMU w/adjustable pressure gain control..... 299.00

SVO or BBK High capacity Fuel pumps w/screen, direct replacement, 155lph..... 99.00
190lph.....139.00
Hi-Flow fuel injectors, set of 6 .....Bosch/SVO.....30lb/hr..... 299.00
36lb/hr..... 379.00
Lucas 38lb/hr.... 429.00
42lb/hr.... 499.00

ARP Head Studs 190,000psi tensile strength,..11mm, w/ 12pt nuts..set.....119.00
ARP Rod Bolts, 190,000psi tensile strength..9mm.....set..... 79.00
ARP Rocker Studs, 170,000 tensile strength 3/8 -7/16.....set..... 79.00
ARP Main Studs, 190,000 tensile strength, 12mm, w/12pt nuts..set.....119.00
SCCoA Main Studs, 150,000 tensile strength, 11mm.....set..... 59.00

SCCoA/Coy Miller main stud girdle w/windage tray & studs , avail.soon,. call for price

SCCoA Crankcase Windage Tray, prevents oil captivation and foaming, aids oil drain-back..... 39.00

EXTRUDE-HONE Power Flow.....inlet plenum..... 130.00
upper I/C tube..... 130.00
lower I/C tube..... 190.00
manifold adapter..... 130.00
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intake manifold., inlet port & runners..... 95.00

Fel-Pro gasket sets, upper engine sets, w/ late design head gaskets, all years..... 150.00

Fel-Pro gasket sets, lower engine sets, all years..... 68.00
Fel-Pro gasket sets, complete engine, upper & lower, all years..... 195.00
Fel-Pro late design head gaskets only.....pair..... 48.00

EXHAUST

All Cat-back exhaust systems are street legal. SCCoA headers and downtubes are sold "Off-Road" only. (Too expensive to have EPA & CARB certified)

SCCoA stainless-steel short-tube headers for matching 2 1/2" OD downtubes.....2 1/4" collector..... 695.00
SCCoA 2 1/2" OD downtubes.....w/o cats..... 150.00
w/ hi-flo cats..... 350.00
SCCoA True-Dual aluminized cat-back exhaust system, follows factory routing, w/H-pipe, ...2 1/4" OD... 495.00
stainless-steel..... 745.00
SCCoA 2 1/4" into mandrel-bent 3" back into 2 1/4" cat-back exhaust, aluminized, ... factory fit. 210 - 325 hp... 595.00
SCCoA 2 1/2" into mandrel-bent 3 1/2" back into 2 1/2" cat-back exhaust, aluminized, ...factory fit. 325 - 450 hp...595.00

SCCoA Hi-Flo resonator for 21/4 dual systems..... 109.00
Dynamax Super Turbo mufflers, factory replacement, 2 1/4".....pr..... 149.00
Dynamax Ultra Flo stainless-steel mufflers 2 1/4" or 2 1/2"..... pair..... 280.00.
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JET-HOT Metallic-Ceramic Thermal Coating, 1200 degree.....headers..... .....180.00
down-tubes..... ...75.00
down-tubes w/cats..... 125.00
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downtubes, add... 75.00

TRANSMISSION/DRIVELINE

SVO Ring Gear & Pinion sets..3.08 - 4.10 includes shims 209.00

Centerforce Dual-Friction Clutch Kit - a racing clutch-pressure plate
for the street w/ release bearing, all years..... 449.00

Art Carr 10" Super-Torque street converter, 2500 rpm non-lockup... AOD..... 529.00
Art Carr high-tech valve body shift improver kit.....AOD or 4R70W..... 79.00
Art Carr AOD HD rebuild kit..... 190.00
Art Carr AOD or 4R70W Super Rebuild kit w/ 8 plate clutch set..... 260.00
Art Carr billet-steel 1-piece input shaft, non/LU..... 290.00
Art Carr HD Street-Strip AOD's with 1-piece input shaft.(special order)..... 2195.00
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Full throttle 3-4 upshifts, holds OD (AOD only) w/instructional video,
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Super Strength High Performance U-joints w/grease fittings..... 24.95
Lakewood High Performance U-joints w/o grease fittings..... 39.95

Speedometer gears for 3.55 5-speeds or 3.73 AOD's.....21T.....10.95
for above w/low profile tires or 4.10 AOD's.....23T..... 19.95

CHAISSIS/SUSPENSION

AIR-LIFT Air bag for right rear coil spring - cures wheel hop on 5-speed SC's one..55.00

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EIBACH Pro-Kit 1 1/2" lowering springs..... 279.00

TOKICO Illumina Electronic Adjustable Shocks..high performance
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2 rear..... 215.00

Performance-Friction brake pad sets, front only..... 49.00
KVR Carbon-Fiber Semi-Metallic brake pad.sets... front or rear, all years..... 69.00
High-Performance cross-drilled rotors, factory replacement, front or rear.....ea 99.00
black, gold, or silver cadmium plated ea 20.00

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32 oz bottle..... ..... 45.00
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ENTECH CORP Products

G-200 grease 14oz tube..... 9.00
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Hex-Sol brake cleaner 20oz spray can... 4.00
Aqua-Sol 400 cutting fluid concentrate 1 gal..... 23.00
Fuel Conditioner DC1280 (diesel) 32oz.... 19.00
GC1024 (gas) 8oz..... 5.00

AMSOIL High-Performance Synthetic Lubricants.....check catalog for prices

Clean&Cool (water-wetter), protect your cooling system, run cooler.....16oz..... 9.00
Eaton/Ford supercharger fluid 8oz..... 20.00
Haynes Thunderbird/Cougar shop manuals 1989 - 1996, all models, incl. 3.8L SC... 14.95.

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License plate bracket, black anodized aluminum. T-bird wing & SCCoA engraved. 40.00
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Stage 1 special - SCCoA headers w/downtubes and either exhaust system, & modified SC top - $100 off on total package

Stage 2 special - modified SC top, K&N, 155 or 190lph fuel pump, Magnacors wires, I/C fan, 36 or 38 lb/hr injectors, $100 off on total package

Stage 3 special - BBK 65, 70, or 75mm throttle body, C&L/Vortex MAF, Auto Specialities 3-piece underdrive pulley set, SVO roller rocker set - $50 off package

Magnuson S-model blower with SCCoA modified SC adapter top $100 off or no $100 core charge (your choice)

SUPER COUPE CLUB OF AMERICA
"RULES AND BY-LAWS"

IF YOU THINK YOU ARE BEATEN, YOU ARE;

IF YOU THINK YOU DARE NOT, YOU DON'T.

IF YOU'D LIKE TO WIN BUT THINK YOU CAN'T, IT IS ALMOST A CINCH YOU WON'T.

IF YOU THINK YOU WILL LOSE, YOU'RE LOST;

FOR OUT IN THE WORLD WE FIND SUCCESS BEGINS WITH A PERSON'S WILL!

THEREFORE,

IF YOU THINK YOU WILL OUT-LAST, YOU WILL;

YOU'VE GOT TO THINK HIGH TO RISE,

YOU'VE GOT TO BE SURE OF YOURSELF BEFORE YOU CAN EVER WIN A PRIZE.

LIFE'S BATTLES DON'T ALWAYS GO TO THE STRONGEST OR FASTEST;

BUT SOONER OR LATER THE PERSON WHO WINS, IS THE PERSON WHO THINKS THEY CAN!

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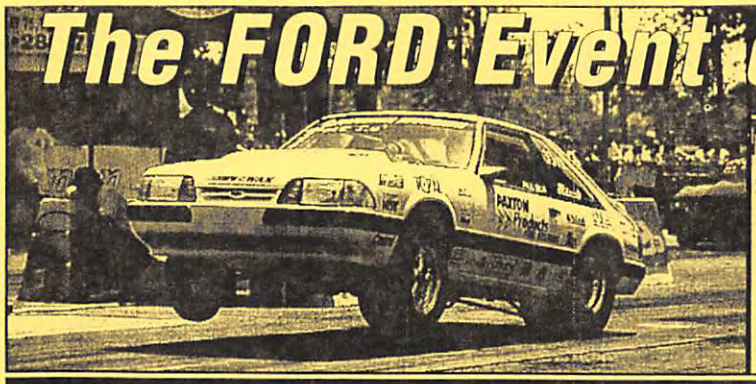

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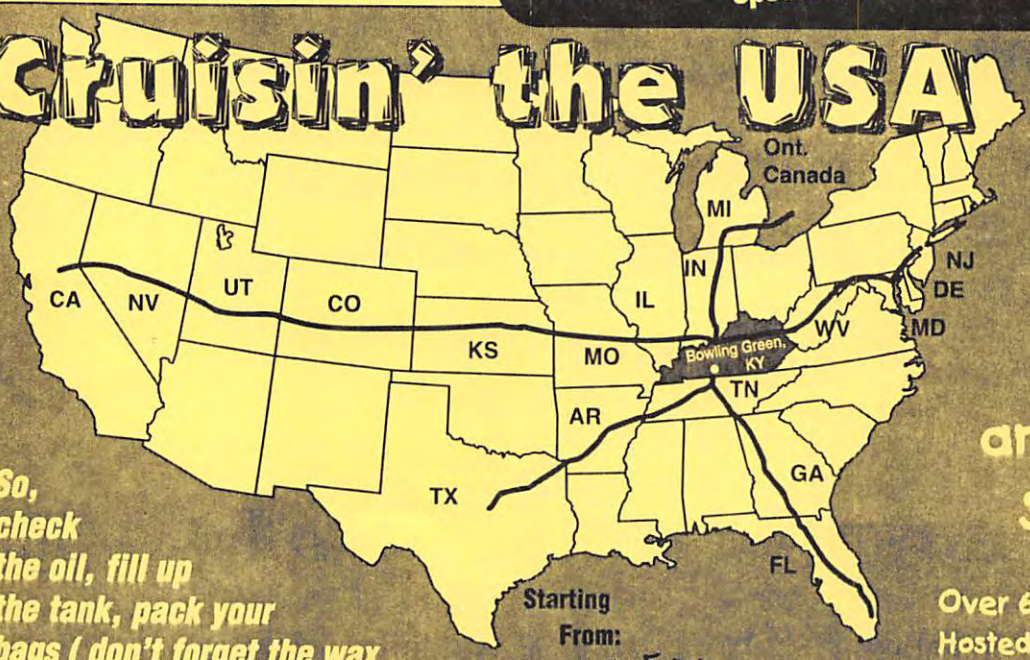

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