



# CHARGIN' THUNDER

Volume IV

June 1999

## Carlisle ALL FORD Nationals Full Reports Mobil 1 World FORD Challenge

Dedicated to the preservation and performance of the  
Thunderbird Super Coupe – 1989 to 1995

**President: Bill Hull**

**Editor: Bill Evanoff**


*"Jesus saith unto him, I am the way, the truth, and the life: no man cometh unto the Father, but by me" - John 14:6*

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of America***

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Bill Evanoff

# ***From The Birds Nest***

**S**uper Coupes are generally considered a vehicle that is desired and sought after by the male population. From my experience, I've only known a few female SC owners and they typically are not the type that would actually be interested in their car enough to join a club like the SCCoA. This is not to say of course, that there are no women SC owners in the SCCoA, but they are definitely in the minority. With this bit of information given, Bill Hull and I were shocked recently when an 82-year-old grandmother called to join the SCCoA. Mary Margaret Runkel, a retired school superintendent from Independence WI, is now member #963 and she loves driving her Super Coupe. She wanted to let everyone know that SC's were not just for young males! We welcome you Mary, and hope to have many more members just like yourself in the future.

This issue of Chargin' Thunder continues to report on the activities of SCCoA chapters and a few of the large national events that drew many Super Coupes on to the show field. The Mobil One World Ford Challenge was attended by Ron DiPaola (the clubs own certified ... or is that "certifiable"... Internet guru/webmaster). If there is a show worth attending that will have at least one other SC present, Ron will likely be there and he shares with us what went on at the WFC. I attended my third Carlisle All-Ford Nationals event a month ago and will share what took place at this fabulous show.

Club membership has now topped 1015 individuals. Not too shabby for an organization that just celebrated its third anniversary! The

web site has shown phenomenal growth with over 122,000 hits to the site's front page. There is also now over 70 members' cars featured with numerous photographs and text of each vehicle. Check the SCCoA web site out at "<http://www.scco.com>". The top 25 fastest SC list has continued to grow. The 1/4 mile times have continued to drop as well. However I have been very disappointed there has not been more non-Internet users from the club participating in this list. I can only think of one individual who has mailed in a slip. That's SAD! It seems that no one is willing to mail in his or her time slips. Virtually everyone on the list has come from those individuals who participate regularly in the SCCoA web site BBS or who have sent in time slips via e-mail. PLEASE, PLEASE, if you want this list to develop into something truly meaningful, we must get more people who want to participate in it. I KNOW that there are MANY SCs' running in the 14's and even the 13's yet they are not represented on this list. Get involved members and mail us, or email us your time slips! I plan to publish an updated "Top 25" list in the next issue and hope that participation improves.

As I mentioned in the previous newsletter, I was in the process of improving my personal car with a few choice bolt-ons. I am glad to say that I finally finished that job with not much time to spare prior to the Carlisle PA show. Frankly, it was finished the weekend prior to the show. I only had a chance to drive the car about fifty miles before I hopped into it and drove the 500 miles to Carlisle. I was a little nervous on the way there that something would go wrong, but thankfully nothing did and I can proclaim to the world that "I are an excellent mechanic"!

Seriously, I was a little nervous as I turned the key after taking everything off the top of the engine, plus removing the exhaust manifolds. After only a few turns of the starter, the engine roared (and I do mean "roared" as I had yet to get my exhaust system welded on and only had some short

down tubes) to life. A big sigh of relief overcame me and I would have heard the exhale of my breath if it were not for my virtually open exhaust system's din.

I had installed a number of parts that were sorely needed on my car. Notice how I said, "needed"? This is a great way to justify go-fast parts to yourself or your better half. You can say, "but honey, I *need* these parts or my car simply won't run right". I've heard variations to this excuse and typically they are followed up with a statement like, "you're right, I *need* a new pair of shoes (or a mink coat, or a convertible) too"! So, you see its all give and take. You *take* some money and get the parts you want and she *gives* you a hard time about it.

Anyway, the parts consisted of a "S" model supercharger, a set of 36# injectors, underdrive accessory pulleys, shorty headers, and a 2-1-2 (3" center section) SCCoA exhaust system. With the addition of all these necessary (see how I slip in the "needed" word again) parts, I now officially have what has been referred to as the "350 Horsepower" kit. Bill Hull has written about this kit in the past inside these pages several times and I'm here to tell you as someone who has now owns this package, **IT WORKS!**

I stuck with my factory original supercharger pulley because I was a little nervous about creating too much boost with the "S" model if I were to use a 5% or 10% overdrive pulley. As it is currently, upon full throttle the boost raises almost immediately to 10 pounds and then creeps slowly to 12 psi. Once the tach reaches past 4000 rpm, I finally top out at 14 psi or slightly below that figure. I'll likely keep this pulley as it is not pegging the boost, but I'll have to keep the best fuel I can find in the tank or I may be joining the "head gasket" club sometime soon.

I have yet to take my car to the track but fully expect that the car will turn 14.2 or better. I know of several others who have equivalent

bolt-ons and they are running similar times. The car is now so much more fun to drive though. I honestly can't say that I've lost or gained any low end torque, but frankly I didn't need any more than what I had prior to the changes. Where the major difference occurs is in throttle response. I can barely touch the gas and the car simply jumps. If I'm rolling along at 15 or 20 mph in first gear, a quick stab at the gas sends the tires spinning. The car now pulls much harder at any rpm and in any gear. Simply put, after a few seconds of full throttle, I find myself going way too fast and I definitely become a candidate for a sit-down meeting with someone driving a car with a blue/red light on top.

I was fortunate to have access to a portable Dynojet Dynamoter at the Carlisle show and sprung for the \$75 fee to get my car tested. I was curious to see if our Mr. Hull's claims of 350 HP were true or simply bunk. Frankly, Hull is the one who asked me to get the car tested as he was just as curious as I was.

To make a long story short, the results were 263 HP and 345 ft.-lbs. of torque at the rear wheels. Steve, the Dynojet operator, stated that a figure of 18% drivetrain loss is typical for a manual transmission. So if you do the math, the engine power comes out to 310 HP and 407 ft.-lbs. of torque. Now Hull and I analyzed these figures and we are not going to make any excuses for them, but there are a couple of things that are worth mentioning. First of all, I think these figures are FANTASTIC! My little 3.8L is making as much power as a 4 valve/cylinder V8 Mustang Cobra. Secondly, there are a couple reasons why we think the figures can actually be higher.

The portable dyno normally has a very high flow fan that they point at the car's front end and radiator to keep things cool during testing, but the fan had been dropped and broken the previous day. We believe that if this fan had been working, it would have

meant a few extra ponies for my engine. Additionally, I have mounted, but not wired my intercooler fan. Personally, I feel there is likely another 10 HP to be gained by cooling of the intercooler during a dyno run. Also, the day I tested was VERY humid, which the dyno operator admitted is a HP/Torque killer. Finally, as I've already mentioned, I am using my stock supercharger pulley, which can be considered the third largest of all the SC pulleys available. This is the same pulley that was stock on all '89 to '93 SCs. If one were to use even a 5% pulley, this would likely also give you an additional 10 HP with the minor increased risk of possible head gasket failure (hey, I'm being completely honest and practical here).

If one considers all these points, the 350 HP figure may not be wholly true, but also not that far off either. Is 335 horsepower at the engine a logical figure to expect from the "350 HP" kit? I would have to say that from the data I've seen, "Without a doubt"! I don't think that Hull will be changing the kits name any time soon as advertising a "335 HP" kit just doesn't sound as catchy, nor as impressive to your Mustang drivin' buddies.

Before I leave the analysis of the dyno run, I think its worthy to mention the shapes of the HP and Torque curves from my engine, which are shown on the next page. I have seen many of these curves from SC engines and this is one of the few that I've seen that has such desirable characteristics. Many curves are "peaky" and don't show a nice smooth rise and fall of the useable power. Although the actual peak numbers are respectable, the curves don't usually look like the one created with the "350 HP" kit. I saw another set of dyno curves at Carlisle from a car that had been run that had virtually identical bolt-ons, but the car was running a 2.5" center section Dynomax exhaust. It had headers, and possibly even a few more go-fast goodies, but our exhaust systems were quite different. The actual peak numbers of his dyno results, though not as high, were similar to mine. Further

examination of the dyno printout showed that the usable power shown by the HP and torque curves across the entire rpm band was much less. The curves were extremely peaky and the power over 4000 rpm was dramatically less than the curves shown on the next page. It was immediately apparent that something was choking the high rpm power and I had to suspect the obvious...the 2.5" center section Walker exhaust. It had given up at high rpm and the engine was not up to its expected potential.

The "350 HP" kit with its 3" center section exhaust (or the Big Dawg 3.5" is even available) shows over 300 ft-lbs of torque from 1800 to 4500 rpm. *Now that is a smooth and sustained torque curve that shows no signs of any restrictions in the engine's intake and exhaust flows at higher rpm.* The HP curve also shows a smooth and rapid rise with power peaking at approx. 4700 rpm.... again, showing NO sign of restriction. The other car with the 2.5" center pipe showed a curve that had already fallen way off by this point. Its obvious to me and hopefully anyone who can read a dyno chart that any serious exhaust system **MUST BE LARGER THAN 2.5"** if you are going to use a single pipe at any point in the entire exhaust system.

My point here is to not just look at the peak values of HP and Torque, but to look at their entire curves across the rpm range. A broad torque curve is what will make your SC fly and the "350 HP" kit, or "335 HP" kit or the "Monster TORK" kit (*WHATEVER YOU WANT TO CALL IT*) offers that in abundance.

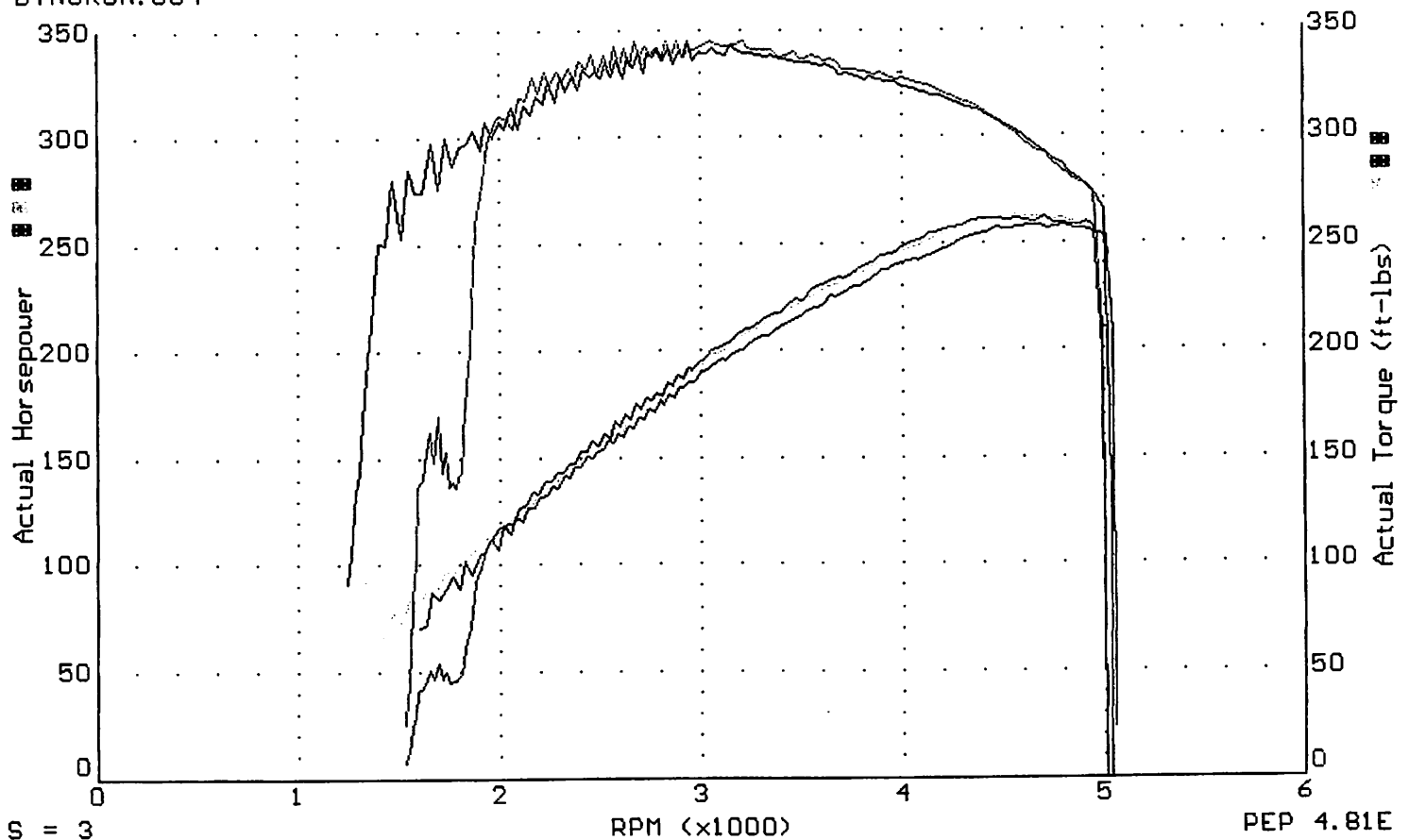
Sincerely,  
Bill Evanoff

Mail in copies of your ¼ mile time slips to:

Ron DiPaola  
519 June St.  
Endicott, NY 13760

DYNORUN.001 -  
 DYNORUN.003  
 DYNORUN.004 -

RO  
 RO  
 RO



As measured on DYNOJET'S MODEL 248E DYNAMOMETER

DYNORUN.001 69.3 °F 29.92-0.46 in.Hg. 587 ft. RPM/MPH=43  
 Max POWER = 262.1 Max TORQUE = 345.0

DYNORUN.003 69.3 °F 29.92-0.46 in.Hg. 587 ft. RPM/MPH=43  
 Max POWER = 263.2 Max TORQUE = 343.1

DYNORUN.004 70.0 °F 29.92-0.46 in.Hg. 587 ft. RPM/MPH=43  
 Max POWER = 258.4 Max TORQUE = 333.9

Dynotec Motor Sports inc. Mobile Chassis Dynamometers

BILL EVANOFF  
 1990 SC TBIRD

6-6-99

# **World Ford Challenge '99**

## **Thunderbird owners from across North America flock to the Biggest All-Ford Racing Event, May 13-16, 1999**

Super Coupe owners from Canada and the US journeyed to Joliet, IL for the biggest and best World Ford Challenge yet. For Dick and Judy Adams, the journey began at their home in Roanoke Rapids, North Carolina early in the week. They drove up to Niagara Falls, Canada where they were given a grandiose welcome at the U.S./Canadian border. Since these two Southerners might have appeared a bit shady, they were detained and forced to display the contents of their suitcases. Luckily, border agents were unable to find anything incriminating and they were allowed to proceed. The guns and drugs were obviously well hidden in his black '95 SC (*kidding of course*).

Late Tuesday night Ron DiPaola and Marisa Burns of Endicott, NY met up with the Adams at their hotel in Niagara Falls. Early Wednesday morning the two SCs drove to Mike and Lisa Maroschak's home in Oakville, Ontario. All three then cruised to a spot on the 401 where they met the rest of the Super Coupe Club of Ontario (SCCoO) crew: Wayne Ing, Norman Tsai, Bill Gowland, and token "4.6er": Michael Varrik.

The cruise went well, with the caravan keeping together for the most part and stopping for regular pitstops and fuel-ups. We arrived late Wednesday night at the Days Inn in Joliet, checked in, had dinner and retired for the evening.

Thursday morning we decided to meet up with the official WFC cruise at Rod Baker Ford in Plainfield, IL for free t-shirts, and to cruise directly into the Route 66 raceway. Our crew was one of the first to arrive and later approximately 100+ cars eventually showed up. We were treated to a free lunch and give-aways of hats, t-shirts, etc. Everyone in our cruise won something and Ron DiPaola won the grand prize: a Roush Trunk Tool Kit for a 94 - 98 Mustang, luckily his girlfriend, Marisa Burns owns a 1998 Mustang GT and the kit was put to good use.

From Rod Baker Ford we cruised 15 miles to the Route 66 Raceway, where the Northern Cruise was the first official WFC cruise to arrive. We were welcomed by WFC organizers, given welcome packets and photographed by Super Ford. We used the overcast and slightly drizzling weather to register for the Auto Show, secure spots together and check out where everything was located. Later Thursday other SCCoA members starting showing up and again we dined together and later hit the streets looking for some action.

Much of Friday and Saturday were spent checking out the Manufacturer's Midway, purchasing parts, watching the superb racing action, and perusing the 750+ cars in the Auto Show. We saw one SC run against a Mark VII and the SC was running 15.6s.



On Sunday the final races were held and prizes for the auto show were presented. See the results below.

Special Mention: Ryan Riggin; Red 1987 Mustang with an SC engine! The car isn't quite finished, but he did have a picture to show the installation. He said that he has driven it for a short time without a radiator and it was surprisingly quick. He hopes to have it finished before the end of the year.

Check the official World Ford Challenge web site for more information:  
<http://www.worldfordchallenge.com/>

### **Auto Show Winners:**

#### 1989-1997 Stock Thunderbird/Cougar/Mark VIII

1st Place - Andy Erickson - 1992 SC  
2nd Place – Steve Watson – 1997 LX  
3rd Place – Joe Baldazzi – 1989 SC

#### 1989-1997 Modified Thunderbird/Cougar/Mark VIII

1st Place - Ron DiPaola - 1993 SC  
2nd Place - Dick Adams - 1995 SC  
3rd Place - Kurt Kreisz - 1992 SC

### **List of Attendees:**

<u>Name:</u>	<u>Car:</u>	<u>From:</u>	<u>Member of:</u>
Kurt Kreisz	Black 1992 SC	St. Louis, Missouri	SCCoA & GSCC
Steve Boehm	35th Anniv. 1990 SC	St. Louis, Missouri	GSCC
Wayne Ing	White 1992 SC	Markham, Ontario, CAN	SCCoO
Lisa & Mike Maroschak	Titanium 1990 SC	Oakville, Ontario, CAN	SCCoO
Norman Tsai	Pearl White 1995 SC	North York, Ontario, CAN	SCCoO
Bill Gowland	Titanium 1990 SC	Mississauga, Ontario, CAN	SCCoO & TCCoA
Dick & Judy Adams	Black 1995 SC	Roanoke Rapids, NC	SCCoA & TCCoA
Ron DiPaola & Marisa Burns	Black 1993 SC	Endicott, New York	SCCoA & SCC of Central NY
Doug Williams	Blue 1989 SC	Dearborn Heights, MI	SCCoA & TCCoA
Joe Baldazzi	Black 1989 SC	Brodhead, Wisconsin	SCCoA & SCCOW
Andy Erickson	Red 1992 SC	Janesville, Wisconsin	SCCoA & SCCOW
Steven Watson	Pearl White 1997 LX	Tulsa, Oklahoma	TCCoA & SCCoA
Michael Varrik	Titanium 1996 LX	Willowdale, Ontario, CAN	SCCoO

# Carlisle All-Ford Nationals '99

By Bill Evanoff

Kurt Sunday from the great state of New Mexico typifies the type of enthusiastic person who attends the Carlisle All-Ford Nationals every year. Kurt had read my past reports on this outing and decided he didn't want to miss another year...despite the fact he lives **A LONG** way from Pennsylvania. He came for all three days this year and in his words he proclaims, "I'll be back"! I've said it before, and as Kurt found out, the show is NOT TO BE MISSED. If it is at all feasible for you to attend, begin thinking about going to next years show.

This year there was a record 43 Super Coupes present and we easily over ran our allotted parking, so we had SCs parked in between the rows and on both sides of our aisle. It was a truly awesome sight to see that many SCs in one spot.

The show winners for the '89 to '90 class were:

- 1'st place – Bill Evanoff
- 2'nd place – David Glista
- 3'rd place – Mark Sayers

The winners in the '91 to '95 class were:

- 1'st place – Brad Klein
- 2'nd place – John Palmer
- 3'rd place – Richard Sigethy

How they split up the classes is a little mystery to me. I can only assume that they know that there were certainly a lot of '89 and '90 SCs produced and then the volumes tapered off for the '91 to '95 model years. So the number of cars in each class turned out to be fairly equal. It actually worked out well, but some people thought the '94/95 cars should be separated which would have only been a class of about eight cars.

Our group was tight knit and we all went out to supper on Friday and Saturday evenings. Friday we practically filled the private back room of a local steak house and on Saturday we went out to a casual family-style place where we took up about 1/3 of all the tables available. After supper each evening our group filled the parking lot of the Super 8 Motel and we all talked about SCs until past midnight. Our president Mr. Bill Hull even supervised the activities this year, but kept his near perfect record of attendance each year at Carlisle WITHOUT either one of his two Super Coupes.

Numerous SC owners took advantage this year of the chassis dyno that was present again at the show. I believe four or five were flogged on the dyno with rear wheel horsepower and torque numbers ranging from 210 hp/335 torque on Mark Sayers's remarkably bone-stock '89 SC with 138K on it, to 263 hp/345 torque for my own car which has numerous bolt-on items. Everyone was flabbergasted at Sayers's figures because of its completely stock condition and



the number of miles on it. All I can figure is Mark got a "Good One" from the factory. I've seen several other stock SCs which only put out approx. 190 hp at the rear wheels.

I was extremely happy with my own figures as this would put my car's hp/torque figures "at the engine" at approx. 310 and 407. This is using an 18% correction factor for losses through a manual transmission, which is what Steve from DynoJet said is the universally agreed upon factor. My SC wears a license plate that reads "XS TORK", so now I can jokingly feel comfortable with the fact that my Super Coupe is in fact putting out some serious "Excess Torque"!

The weekend wrapped up on Sunday, but not before Kurt Sunday got the bug to bolt on some HORSEPOWER for his long ride home. He had asked me on Saturday if I would help him put on a new cast SCCoA raised/enlarged supercharger top and I said, "Oh, that's so easy, why not wait until you get home"...well Kurt couldn't wait and he approached me on Sunday with a request to borrow a few tools. I knew immediately what he was up to and I grabbed my tool box and we both went over to perform surgery on his car. The word quickly spread, and Bob Moore and Dick Adams offered to help also. Bill Hull also joined in as the "Supervisin' Boss" and between the five of us, we had Kurt's new Big Dog Top installed in approx. 35 minutes. That was really with only one person working on the car at any one time, but it just goes to show you how quick and easy it is to perform this modification.

**Those attending were:**

Bill Hull	Kurt Kreis	Rick Hubbs
Joe Santillo	Sherry Christensen	Michele Morgan
Al Bailey	Richard Digethy	Kelly Meeker
Keith King	Paul Stoll	Carol Stoll
Barry Kulan	Paul Keats	Derek Holland
Dick Adams	Judy Adams	Dave Glista
Traci Kuhn	Bill Ball	Ernest Posey
Bill Schlaubach	Joseph Kupiszewski	Joe Baldazzi
Sarah Baldazzi	Mike Maroschak	Lisa Maroschak
Ron Wiemer	Brad Klein	Andrew Mulligan
Jeff Teats	Chuck Carroll	Kit Duty
John Palmer	Kurt Sunday	Ron DiPaola
Marissa Burns	Bob Moore/son Bob	Ken Seegers
Duffy Floyd	Mark Sayers	Teresa Sayers
Art Dunlap	Alan Macrae	Amy Macrae
Rich Thomson	Nicky Thomson	Roger Kraft
Pat DiPersia	Mike Filby	Mike Jones
Georgette Reid	Lisa Leatherly	Tom Roney
Wayne Ing	Jason Renze	Bill Evanoff

The SCCoA has already reserved rooms for Carlisle '00 at the Super 8 Motel again, as their hospitality was superior. If you wish to reserve a room, call them at 717-245-9898 and our room reservations are held under the name "SCCoA". **See you next year.**

# Upcoming Events

## **National Events:**

**Ford Expo '99** at the National Trails Raceway east of Columbus Ohio. 740-928-5706

**Date: September 3, 4, & 5**

To Do: Drag Racing, Car Show, and Swap Meet

Directions to National Trails: Approx. 20 miles east of downtown Columbus OH, take I70 to exit 126. Go north to the first stop light and go left on Rt. 40. The racetrack will be approx. 1 mile on your right

**The SCCoA is stay at either:**

- Hampton Inn (Columbus East) 614-864-8383, \$79 + tax

This hotel is only one year old, has an indoor pool/sauna and includes a very good complimentary breakfast. *I'm staying here because my twins love the warm indoor pool...Editor*

At exit 112 on I70

- Lennox Inn 614-861-7800, \$58 + tax (which is a special rate under group booking #2182)

This is a nice older hotel and the club has stayed here before. The price is right if you don't require a warm pool and breakfast.

Also at exit 112 on I70

**Everyone must make their own hotel reservations and we have no group booking under the SCCoA name.**

## **Local Events:**

### **JULY**

Midwest SCCoA:

Drag racing/car show/swap meet

Milan Michigan at the Milan Dragway

July 10-11, 1999

Super Coupe Club of Central New York:

12th Annual Fords at Englishtown, New Jersey at Old Bridge Township Raceway Park. Giant car shows, classes both days. Drag racing classes are muffled Heads-up and Bracket classes. July 16 - 18

Super Coupe Club of the Carolinas Meet:

Local meet at the North Carolina Motor Speedway in Rockingham, NC

July 17, 1999

## **AUGUST**

Midwest SCCoA:

Tri-State Mustangs Club All-Ford Show on August 1, 1999 at Eastgate Mall

This is on the south east side of Cincinnati and draws over two-hundred cars. There were five SCs present last year. If you would like a sign up sheet, email Bill Evanoff at "xs\_tork@usa.net" or call at 513-697-6501 (6 – 9 p.m. only) ASAP and he can mail or fax you the form. There is a \$5 discount if you sign up prior to July 10, 1999, so DON'T DELAY. The entrance fee is \$15 the day of the show.

1999 SAE Foundation Antique & Custom Car Show

Held at: SAE World HQ on August ? (I guess call the hotline to find out)

Thornhill Industrial Park, 400 Commonwealth Drive, Warrendale, PA 15086

Car Show Hotline for information 724-772-4044 , 11:00AM to 3:30 PM

Registration fee \$10.00 , Preregistration until July 19, 1999 registration after that first come first serve. Approximately 30 different classes plus motorcycles. Trophies for 1st, 2nd & 3rd place.

Contact Mark C. Floyd at "FloydMC@ch.etn.com" for more info.

Super Coupe Club of Central New York:

15th Annual Spiedie Fest and Balloon Rally on August 8, 1999

Car, Truck & Motorcycle Show

Tri-Cities Airport-Endicott, New York

More info available here: <http://www.tier.net/balloonfest/index.htm> in the months to come.

Super Coupe Club of Central New York/Super Coupe Club of New England:

Fun Ford Weekend at New England Dragway

August 21 & 22, 1999

Epping, New Hampshire

SCCo Ontario:

Montreal Mustang Car Show. Held at Ford of Canada.

August 22, 1999

Adirondack Shelby Mustang Club Show. Held at Jack Burne Ford, Mechanicville, NY.

August 28, 1999

## **SEPTEMBER:**

Super Coupe Club of Central New York:

5th Annual All Ford Show Hosted by the North Country Mustang Club in Plattsburgh, New York

September 12, 1999

*Anyone wishing to get their events listed here must send them to me approx. two months in advance.*

*Call me at 513-697-6501 or email me at "xs\_tork@usa.net". Editor*

# **Midwest Chapter Spring '99 Fling**

By Bill Evanoff

As a chapter organizer, you are always looking for help to get things done for the club. At the Midwest chapter's outing in the fall of '98, Keith King of Xenia, Ohio approached me and expressed what a great time he was having and said to me, "We should have an outing like this at my house next year". Well, as I have already said, a good organizer does not forget comments like that, so that is exactly what we did this year....We went to Keith's house!

Keith may have been surprised when I called him to ask if his "offer" still stood, but he graciously said "Of Course!", and we set a date of May 22nd for our chapter's first outing of the year. I knew that my own car would not be ready by then, as I still had the top half of my engine in pieces from numerous modifications I was in-progress on. But I hoped it would be a good date for others since it was sandwiched between the Mobil One World Ford Challenge and the Carlisle All-Ford Nationals.

The day arrived and it was raining off and on...more "on" actually, but Mark Sayers, from Lexington KY and I made the sixty-mile trip to Xenia from Cincinnati. Mark has offered to take me to Xenia, so at least I arrived in a SC instead of an Escort (or much worse yet, my daily beater... a Buick Regal). He didn't want his Chapter Prez. embarrassed, and I thank him for that. Mark even let me drive his SC on the trip. The day would continue to be breezy, but the rain subsided after 2:00 p.m.

Super Coupes kept trickling in for over an hour and a final total of ten cars were present. The SCs were joined with a few other cool rides brought in by some of Keith King's friends in the area. One guy brought in two...yes TWO brand new '99 Lightning pickups AND a supercharged Saleen SR351. I personally drove one of the Lightenings and everything you will likely read about them in a magazine is TRUE! They are quite an awesome machine. They both stop and go with AUTHORITY. You had better have a stout SC if you ever hope to challenge one of these big beasts to a race. I have no doubt they can turn a 14.0 in the qtr. mile. One of the younger guys got a ride in the Saleen and came excitedly back jumping up and down and drooling and saying something to himself like, "I've got to get one of those, I've GOT to get one of those"...over and over. Another friend brought a new V10 Triton powered F550 dually that had custom paint/graphics, a Paxton supercharger, custom air ride/lowering suspension and a custom interior. All in all, it was the ultimate tow vehicle.

As Keith lives quite far out on a country road, it wasn't long after our delicious steaks-on-the-grill supper that someone mentioned drag racing. Well, there was another friend of Keith's who had a new Pontiac Grand Prix GTP with the GTS package. This is supposed to be their "hot ticket" car for '99. He bragged how fast it was and it wasn't long before one of our younger and hot-blooded SC owners said "Show Me"! Off they went to strut their stuff. I knew for a fact that the 5-speed SC about to race had a broken motor mounts, very high miles and only LX style 15" wheels on it because the guy had sold his SC wheels to be able to afford some 17" SVT style wheels. So obviously I wasn't expecting a real close race, but

suprisingly as they flew by, the old SC was only one car length behind the Pontiac. Not bad, but the Pontiac DID win.

Next, another SC owner with a super clean, 80K mile, bone stock '90 model felt the need for speed and jumped into his slush box AOD car for round two. Again, the Pontiac won, but only by a nose this time. The AOD owner said it was a dead even run until his car shifted into third at way too low RPM and the car just bogged and allowed the GTP to pull ahead. He said a shift kit is on its way into his car very soon to tighten up the shifts.

I looked around and generally knowing the mods. of every car present, I taped Bill Schlaubach on the shoulder and said he ought to get out there and show that GTP what a good SC can run like. Without nary a word or two of acknowledgment, off he went towards his car and round three was set with the GTP owner feeling pretty confident by then. They went down the road and all we heard for about four seconds was Bill's tires screaming for relief from the tire spin. He was using a hard, all season tire that was horrible for getting his modified car moving, but move it eventually did. He said he was approx. three car lengths behind the GTP after several seconds, but once he gained traction, he was literally on sling shot ride past the GTP about midway through the race. He said he passed that guy so easily he chuckled as he eventually beat him by over three car lengths. Upon returning to the driveway at the house, the GTP owner rolled his window down, stuck his head out and yelled, "I was set up"!

There were several other "displays of power" and miscellaneous mischief, but it was all in good fun and fun it was. We wrapped up the day with a group picture around the edge of Keith's pond and a promise that we would definitely be doing this again in the fall at a yet to be determined location...any volunteers?

***Thanks to Keith and Moana for their hospitality!***

**List of attendees:**

Keith and Moana King  
Mark Sayers  
Matt Boggs  
George O'Neill  
Bill Schlaubach  
Bob and June Langhirt  
Tom Latrella  
Curt Hungerford  
John Filarski  
Mark Floyd  
Bill and Patty Evanoff, daughters Jessica and Julia

If you would be interested in joining the seventy other members of the Midwest chapter of the SCCoA and live in Ohio, Michigan, Indiana, and Kentucky contact me at 513-697-6501 (6 – 9 p.m. only please) or via email at "xs\_tork@usa.net". Membership is free.

# **FUN FORD WEEKEND ATLANTA 1999**

By Mike Puckett

It's been 30 years since I was last involved in any kind of real drag racing. It's always been for the fun of it though and never real serious. Last year I took my SC to Fun Ford Weekend and got the bug again. So, I decided to build up my SC to run faster and have a little fun at it. After all, I don't have a whole lot of years left to do this in as I have been middle aged for some years now.

I have found that I still have a lot to learn about drag racing though, as I eagerly look forward to my next race. I plan on visiting the strip again this summer as well as Fun Ford Weekend for as many years as I can. And, Fun Ford Weekend was just that. No disasters occurred and it was thoroughly enjoyable two days.

Friday morning of April 16th dawned cool and windy. With temps in the high 50's to low 60's and a 20-25mph headwind, the weather made for very good but not perfect conditions. Saturday morning was calm but my times were no better and I think that the wind was not much of a factor. Atlanta Dragway is about a 45 minute drive north up I-85 from my house in Norcross. I loaded up my 255/50/16 BFG Drag Radials into the trunk along with my floor jack, a few tools, and some spare belts and off I went.

Once at the track I registered and parked to change tires. One of the track's stewards on a motor scooter saw me and headed over to talk for awhile about the SC. It seems that he had just bought one and was interested in how they would run. After we talked awhile I went to tech inspection to get cleared to run and get my number assigned, #507. The next stop was the concession stand for lunch and a rather flat \$4 hamburger. Definitely not up to Ronald's mc'stantards.

Being rather windy and cool I went over to sit in the car and wait for Rick Cunningham to show up. Meanwhile, the fellow in the Mustang convertible parked next to me started up a conversation and I eventually talked him into giving the 1/4-mile a try. He was an experienced autocross racer so it was an easy sell. He also became my first victim. Rick showed up from tech inspection and went to make a couple runs on his second SC, a stock '90 with 235,000 mi. and flowmaster mufflers as the only mod. He made 3 passes on Friday first posting a 16.715 @ 84.75mph. On his next pass he chiseled it down to 16.677 and wound up the day with a 16.366 @ 85.88mph. Not too bad for a practically stock '90 with that kind of mileage.

We then unloaded the stuff in my trunk into Rick's and I headed to the staging lanes just in time to catch the Mustang, a.k.a. victim #1. We both launched at the same time with identical reaction times of .770. That's as close as he got as I motored away to 14.330 @ 97.40mph to his 15.835. Just before I crossed the line I got a tinge of butterflies in my stomach when I realized that "Wow, This thing's really haulin' ass!"

Excited now, I go back around for another run. This is test and tune day so you can make as many passes as you want. This time I come up against an F-250 extended cab long bed with a big bolt in toolbox in the back. He ran pretty well for a humongous pickup but his 17.600 was no match for my 14.271 and the behemoth faded into the distance, easy pickens. It won't be like this tomorrow. I didn't want to overstress anything so I called it a day, changed my tires,

and headed home. On each of my launches, I tiptoed off the line, hooked it up, and then floored it and ran the rpm up to 5500 in each gear crossing the line in fourth at about 4500 rpm.

The next day during qualifications I tried more aggressive starts but I found that I got more wheel spin, which in turn slowed down my times. The weather was still cool Saturday morning and there was no wind until the afternoon. My wife came along for her first visit to the drag races to cheer me on. My son and a friend followed us down in his truck with the tires and tools to be my pit crew. We arrived around 8 am and had just a short wait in line to get checked in and we then headed to find a parking /pit spot. I spotted Ron Wiemer's pearlescent '95 as we pulled up and he followed us to open area.

We weren't there long when Rick Cunningham drove in, in his dark blue '90 and then Chuck Carroll pulled up in his 35th Anniv. Edition. A little later Chuck left to join Brad Klein in his beautiful flaming SC over in the classic show car section. After we put on my tires, Rick, Ron, and I went racin'. Rick kept working on his times in the qualifiers. Improving over Friday, his first posting was a 16.059@85.88mph with his second run coming in at a near identical 16.089. Rick slipped a little bit on his third run to a 16.356 but came right back to post his best time of the day at 16.051@85.55mph with a quick .513 r/t beating an F-150 Triton V8 which ran a 16.802. Unfortunately Rick wasn't able to stay for the elimination rounds due to an afternoon commitment. Rick's also got SC number one in the works that should show us a thing or two next year when his upgrade project is finished. Ron made two qualifying runs in his stock '95. His first was a 15.254 @ 90.36mph, which he then improved to a 15.212 @ 90.54mph. In his first elimination run Ron again improved his e.t. to 15.185 but was nipped by a mere .030 at the line by one of the faster pickups. Ron's r/t of .680 was a tad better than his opponent's .697 but he was a little further off his dial in time.

I decided to try more aggressive starts on my qualifiers and see if it would improve my times any. My first qualifying run was against an orange restored '50's pickup with a V8 and I recorded victory #3 with a 14.370 against his 16.955. I came right back around and lined up for my second run of the day. I matched up against a white '65 Mustang that badly needed a new paint job. My 14.289 to his 16.090 left him in the dust and I chalked up win #4 for the weekend. We both came back and got in line for the next go round. With a few minutes to kill until they called our class we all talked about how we were doing and what kind of equipment we had. The guy in the white Mustang said that he couldn't believe that a six-cylinder could go so fast. We were side by side in the lanes so he figured that we would pair up again because he wanted another shot. Well....., I smoked him again with a 14.436 to his 15.305. He did better but the ol' 289 hi-po just didn't have enough hoss.

I'm 5-0 in the win column now and feeling pretty good at this point. I've got one more qualifier to run and I come up against one of the ubiquitous early '90's Mustangs there in abundance. The win streak ends as he eeks out a 14.066 over my 14.441 as I get over anxious and blow my start and first two shift points. I'm only a car length back at the line so I know I've still got potential as I drop to 5-1. I noticed at this point that my times without the headwind were actually a little slower than on Friday. Clearly, the harder launch and higher rpm off of the line is not producing good elapsed times. My 14.289 was with an easier launch and it is quite obvious that the BFG's hook up much better with a controlled start.



Now it's on to the elimination rounds. Since I knew that my SC could do better than the 14.289 I dialed in at 14.1 and figured that this was enough leeway. My first matchup came against another pickup and what I thought it would be another easy one and, my 14.236 against his 17.448 with a 15.86 dial in should have been but, my .422 reaction time (yes the old man can still move fast) and resultant red light sort of negated all that. So I paid my 10 bucks to buy back in for another shot or two. The next time around I came up against another early 90's Mustang. He was dialed in at 14.41. This time it was my opponents turn to red light which caught my eye and caused me to hesitate just a tad to give me a 1.027 r/t but, it gave me a great launch and I only spun the tires slightly going to 2nd and I caught him just before the finish line. My win anyway, but my 14.135 @ 98.26mph was my best time ever, including my younger days back in the 1960's-70's. It also advanced me to the next round where I came up against an 85 T-Bird turbo coupe that was used only as a weekend drag racer. It was practically gutted and even sported a rollbar. However, his 16.30 dial in time showed that he really wasn't that fast. With 2.2 seconds as a head start though, I knew he'd be hard to catch. We both had great r/t's with mine a little better at .521. But, it resulted in spinning tires as I again got a little over anxious and I ran my worst time of the weekend with a 14.498 and I couldn't catch him with his 16.442 ending my weekend with 6 wins against 3 losses. I'd had to run better than 14.218 to beat him with our respective r/t's and dial ins. But, hey, at least he was another T-Bird.

I still feel that my SC could do a 13.9 something with a perfect run. I'll probably get my heads ported and polished along with getting my now broken motor mounts replaced before I run again though, and I plan on bettering 13.9 by a bit at that point. I also want to get it dyno'ed and see just how much horsepower and torque it's really developing. After my last run we all got together at Ryan's Steak House for dinner and discussions of our SC's and experiences. We all had had an enjoyable time. Brad and Chuck stayed over for Sunday's classic car show but the racers called it a weekend. I'm looking forward to my next race already and a chance to hone my skills and improve my times. As long as I don't break anything serious this drag racing can be a lot of fun. Even though I've been absent from racing, I've never lost the thrill. So, I'll be back again.

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## **Miscellaneous "Ford" News**

- Ford CEO Jac Nasser wants his execs to "get down" with GenX and Y. So Ford managers' now carry a little wallet-size card with hip-hop terminology. The card, developed by a California marketing group called Fusion 5, is described as "Echo Boomers: The Non-Definitive Street Guide." Here is a quick review: "Whip" is a nice car, and "hooptie" is a broken-down car and "dope" means cool. Is this guy groovy, or what?
- Ford says it's in the junkyard business now. The automaker will dismantle scrapped vehicles and sell the undamaged parts to mechanics over the Internet and the rest to foundries for recasting into new parts. The as yet un-named venture could produce \$1 billion in annual sales revenue within five years, says Bill Li, Ford's COO for the new business. In addition, the

recycling business could push Ford into related business such as a re-manufacturing venture that repairs and replaces worn parts in components that otherwise work. Some 11 million vehicles a year are scrapped and 75% of the parts are recycled. Ford says it aims to bring that recycle rate up to 90% on the vehicles going through its yards.

- Ford's 2000 SVT Mustang Cobra R will be the fastest production Mustang in the model's 35-year history. It's expected to get a modified version of the 4.6L V-8. One exterior highlight is a functional and high profile rear deck spoiler. Expect a limited production run of 300.

- Under the "now you tell me after the snow is gone" category, officials of Centaur Thermal Systems say they've invented an "instant heat" system. It stores heat from the last time you drove your car, keeps the coolant warm overnight and puts it back into the engine the next time you start your car. Its like a thermos bottle, says Marketing Manager Fred Nader. Heat-up time: a mere six to ten seconds. It'll be on some Ford production trucks with this year's first snow. It's a dealer-installed option on Ford F-150 trucks, as well as the Expedition and Lincoln Navigator.

- Last winter's explosion and fire at Ford's Rouge complex in Detroit could be one of the costliest single-site insurance losses in U.S. history. A combined loss of \$1 billion or more is possible, and certainly the insured loss will exceed \$500 million, says Anthony Taylor, an underwriter at Lloyd's of London. The costliest man made insurance loss in U.S. history was \$1.7 billion from a 1989 explosion at a Phillips Petroleum plant in Texas.

- While DaimlerChrysler-Canada continues to phase out the Plymouth name and company officials make no secret of the fact that they're considering dropping the brand in the U.S. after 2001, Ford says Mercury, which dates to 1939, will stay around at least a few more years. In fact, Ford's Group Vice-President of Marketing, Bob Rewey, says there are several new models in the pipeline for Mercury. Speculation red-lined when Ford announced that it was phasing out the Sable and Mystique in Canada.

- Unexpected high demand for Ford's 5.4L V-8 and 6.8L V-10 Triton engines has resulted in Ford adding a second shift at its Windsor engine plant. The move creates 300 new jobs and adds output of 100,000 engines. Runaway sales of Ford's F-Series and SUVs are behind the increase.

- Wolfgang Reitzle, the new head of Ford's new luxury car group and former BMW engineering chief, has set an annual sales target of one million Ford luxury cars worldwide, although he gives no specified timescale. "I can't be nailed down on a certain year right now", he asserts. Reitzle plans to turn Ford's Premier Automotive Group, which includes Aston-Martin, Jaguar, Lincoln and Volvo, into the world's fastest-growing auto company. He expects Jaguar sales to quadruple over the next few years to 200,000 cars from 50,000 cars currently. However, to reach this ambitious goal, "Jaguar has to be on the shopping list of average people," he stress.

- Say good-bye to the Ford oval – at least as the corporate logo. Very soon, the traditional blue oval will only appear on Ford-branded products. The corporate logo will be "Ford Motor Company" in cursive type. The move is to emphasize the brand image of Ford and the heritage image of the almost century-old company. The change will take place over the next four years.

# **"The Hunt for the Blue SC"**

By Pat DiPersia, SCCoA Mid-Atlantic Chapter President

When Bill Evanoff asked me to write an article for "Charging Thunder," I must admit, I was somewhat honored. Then reality quickly hit and I was lost for what to write about. I could go for technical, as I feel I can hold my own ground, but most technical information has been written and re-written plenty of times between here and any bulletin boards that exist. I can't even write about the great times I've had between Carlisle or our local chapter meets, because, as I write this, they have yet to happen!

So, I decided to go for a story. Ok, I know, now you're groaning; but I get great enjoyment out of seeing people's faces as they curiously wonder if I'm certifiable. And now, without much further adieu, I'd like to tell you my story of "The Hunt for the Blue SC."

My story begins about 5 years ago when my neighbor brought home his used 1991 or 1992 Thunderbird LX. The car was immaculate, full loaded, with all the bells and whistles. It even had the coveted digital dash, which I've always wanted. I'll admit, I wasn't much into Thunderbirds or even cars at that time, but I couldn't help but notice that car driving around (At the time, all I had was an '88 Escort; it's hard not to notice any car driving around!)

About two years ago, a friend decided she needed a bigger car for her teenager and two children. She had a 1989 Thunderbird V6 NA. Mind you, the car had seen better days. It needed some minor bodywork but little to no mechanical work. I'll swear to you that I found at least two Happy Meal's worth of fries in the car, along with the melted Crayon on the back seat. I sold my Escort for about \$2200 and purchased the T-Bird with only 64k miles on it for \$3200. I just could not pass up this offer, even though it wasn't my SC.

At the time I purchased the car, among other nice amenities, it had the nice white-wall tires with wire-rimmed hubcaps. Eventually, a friend found me four alloy wheels in great shape at a junkyard for about \$50 a piece. I also swapped out my front bumper cover for the newer 1993 "SC-type" version, even though many said it couldn't be done. And once it was done, it really "made" the car. After turning about 80k miles on the T-bird, repainting the entire car as well as the other work that was performed, I was ready to sell it. My biggest complaint was the lack of speed and the automatic transmission just didn't shift when I wanted it to.

For about two years, I watched the SCCoA's classifieds as well as the AutoTrader and any other used car papers/websites I could find. I made sure everyone knew that I was looking for a '94 or '95 SC with a 5-speed. But I just couldn't find what I was looking for. I was either finding SC's on the West Coast, or with 100k miles, or for \$20k. I began to give up, until one day early last summer, I saw an ad on the SCCoA for a '94 SC, 5-speed, moonlight blue exterior, mocha leather interior, loaded! And the car only had 24k miles on it, was located in Ohio, and the owner was looking for a price in my ballpark.

I immediately got in touch with the owner and setup a date to meet. A friend and myself hopped in the car and drove to Columbus, Ohio that was about an eight-hour drive from Philadelphia. Saturday afternoon, about 4pm, I rolled up to the perfect SC. After taking it for a spin, my first time ever being in a SC, let alone driving one, I fell in love. I gave the owner a deposit on the spot to hold it and told him I'd return in two weeks. After driving through floods, tornadoes and major highway closing in Ohio, I made it back to Philly after about ten long hours.

I made arrangements to fly out to Ohio July 13th. After being stuck on the plane for two hours, the owner picked me up at the airport and we headed back to his house. I jumped in my new car and I followed him in his truck to Akron, Ohio, which was about two hours north of Columbus. This was due to the fact that he still owed on the car and did not have the title in hand. We arrived at his bank, I handed over the largest check of my life to pay off his loan, and I was handed the title to my new Blue SC.

I hopped back in my baby and prepared for another eight-hour drive, which, luckily, was much more uneventful than my original trip home from Ohio. After arriving home and giving the customary first rides to friends and families, I flopped in bed and had to wake up the next morning at 6am for work. What a bummer, not even a day to play!

Since then, I've racked up only about 12k as I've gone easy on the car. I've haven't performed many modifications yet, other than a new set of Michelin Pilot's, KVR cross-drilled rotors and carbon-fiber pads. I've removed the air box, and next on the agenda will be Jacobs wires and K&N Filter. Further down the road, I plan on doing a custom exhaust with a 5% overdrive pulley.

Well, as I've said, at this point in the story, I have often received many puzzled looks, which spell "crazy". I'll admit it, I'm crazy about these cars! Why Ford ever decided to do away with the SC, let alone the Thunderbird, is beyond myself and many others. Luckily, through the Internet, Thunderbird and SC owners alike have been able to band together and keep the tradition going. Let's make sure to keep the tradition going and I look forward to sharing many more stories! And stop groaning.

*Pat lives in Newtown Square, PA and is the organizer for the Mid-Atlantic chapter of the SCCoA, which serves SC enthusiasts living in Southeastern Pennsylvania, Southern New Jersey, Delaware and Maryland.*

*You can contact Pat DiPersia to join up at (610) 356-8453 or email him at "pat@techie.com".*  
*Editor*

# **The Ultimate Vacation**

By Lisa Leathery

**V**acation—for me it's normally taken in the winter months. There are two reasons for this: by the time February rolls around the weather in Pennsylvania has exceeded my tolerance level. Rain one day, snow the next, everything is brown, the trees, the ground, and the roads. Some days you get an occasional teaser day with temperatures in the high 50s and you start thinking about getting out the convertible. But then reality smacks you in the face as freezing rain makes the next day's drive to work a 4x4 adventure. The second reason is my job. I work at Carlisle (Productions), you know that place that puts on the car shows. We open in April and run through the summer months concluding our schedule in October. There's really not much time for vacation.

## **Car Nut In A Convertible**

While it is not a requirement to be a car nut in order to be employed by Carlisle Productions, in my case it turns out to be true. I have always had an appreciation for all types of vehicles. My early interest started with the muscle cars. When I turned 16 my cousin had a 1966 Fairlane GTA convertible for sale. Despite my father's reluctance for me to be driving a convertible with a 345 hp engine, my persistence, or should I say my whining, payed off—it was mine. Yes, I still own it, and yes I still get a kick out of driving it. I continued to drive 1960s muscle cars up until 1989. It was then that I first tasted the combination sport and luxury. I purchased an '89 Thunderbird Super Coupe.

Up until that time my experience with speed was primarily going in a straight line. With the Super Coupe I came to realize just how much fun it was to put curves into the driving experience. When I made the purchase I knew this would not be a car that I would pamper. No sunny days only. No babying it. Break it in right. Over the next ten years I visited a few drag strips and attended two driving schools held at Watkins Glen. The Glen was an experience that ranks right up there on the top 10 list. Unfortunately, motorsports, as most of us know, can be an expensive hobby. With the Thunderbird reaching over 100,000 miles I started the rational approach of thinking that this car was my daily driver and it was probably not a good idea to continue using it as a weekend race car.

## **Plans for the Ultimate Vacation**

In order to satisfy the need for some real driving fun I set my sights on a driving school where they provided the cars. Now, this type of school doesn't come cheap. So it took me a few years to justify it in my mind. Let's call it the ultimate vacation. Hey, I work hard, put in lots of extra hours, set aside a little money every year, it won't be missed. I somehow justified in my mind that it was all right to spend money on three days of pure driving pleasure for me - ME ONLY! Well if you haven't guessed by now I booked the three-day high performance driving course at Bondurant in Phoenix, Ariz. Plans for the ultimate vacation were in place. February 28th... center seat, five-hour flight to Phoenix. Most of the flying

time (while I was awake) was spent thinking about how much money this three-day vacation for ME was costing.

What if it isn't all that I expected? What if I wreck the car and have to pay the first \$1,000 in damages? Am I crazy!?! What was I thinking? How could driving a Mustang real fast for three days not be all that I expected? I'm a cautious person, I'm not going to lose control and pay damages. I don't have a death wish. I allowed myself to relax and get excited again. Can't wait to crawl off the plane and hop into the driver's seat. Sunny, 80-degree weather greets me at the airport. After checking into the hotel I make a test run to the Bondurant facility at the Firebird International Motorsports Park. This is just to make sure I know where I am going—wouldn't want to be late on my first day.

### **No Feeling of Fear**

Monday morning I arrive at the facility twenty minutes 'till 8:00 a.m.. Entering at gate three, I view a road course to the right that was used late that week for Indy car testing; to the left is an NHRA drag strip. The approach to the main facility leads you past a large asphalt parking lot. But wait, that's not a parking lot, there are oval skid marks all over the place, there's plenty of tire rubber laying on the surface. I know they grow oranges in Arizona but the only orange that I see is a fleet of Mustangs setting between the Bondurant School and garage. Signage for corporate sponsors lined all the buildings.

Now I am nervous. A friendly Bondurant staffer greets me with a folder that has my name on it. Check in includes a course workbook and a really cool name tag. Five or six other students stand in the lobby waiting for the 8:00 a.m. start. We meet in classroom one, greeted by the head instructor. We receive an introduction to the school and a three-day schedule. Bob Bondurant drops in to say hello and get some feedback from the class as to who, what, why and how we ended up at his school. It's always good to evaluate the advertising, he says. The class is primarily males. The female presence includes myself and one other.

First on the agenda is a walking tour of the facility and then something about a van ride on the track. I have no feeling of fear at this point really. After the walking tour they load us into a nine-passenger van and tell us that our introduction to the track would be in a stock Ford van. It wasn't my lack of confidence in the driver that scared the beegeebers out of me. It was the idea of being in a nine-passenger van. Picture sitting in the middle of the third turn holding onto the seat in front of you just to keep from being thrown onto a fellow student driver sitting beside you. I can't believe that the big van, with its high center of gravity, can possibly take a corner at the speed it was being driven. Now that we have had a demonstration of just how skilled the instructors are we proceed to the classroom to learn practical application methods of driving.

We are split into three-person groups. We're all assigned one instructor per group and we get Randy. After some classroom instruction Randy takes us to a Ford Taurus SHO, the official four-door instructor vehicle. We climb in for a demonstration on the skid pad. The SHO is equipped with hydraulics. While going into a turn the instructor can cause the car to understeer or oversteer. It's your job at that point to determine what is happening and apply

the correct procedure. Needless to say, we are spinning around in circles. This demonstration is all about transferring weight to the proper set of tires.

### **First Solo Behind the Wheel**

We are introduced to our Mustangs. I was assigned number 15. After a brief review of proper seating and positioning we were ready for our first solo behind the wheel exercise. Each student would perform driving tasks while the instructors watched from a safe distance. Which, by the way, did not appear to be all that safe of a distance. After all, we were only student drivers. This exercise taught us how to avoid an accident. We quickly learned that applying the brakes was not the best option. Swerving to miss the obstacle in front of you will normally yield better results. This demonstration was conducted by having us drive towards a traffic signal light that would signal stop, right or left lane option. Each time we applied the brakes we ended up past the area that represented an obstacle in our lane.

Back to the classroom for some more instruction. It was evident from the very beginning that each and every instructor was dedicated to providing students with the best personal instruction possible. In the classroom, or in the car, they were attentive to the student. Paying special attention to both good and bad driving habits, always pointing out what was necessary to become a better driver. This was just too cool. Day one was off to a great start. After lunch we were back in our cars working on a slalom. This course was a line of six to ten cones, each set at a distance of 55 feet apart. It was designed to introduce the basic concepts of vehicle control such as smoothness and weight transfer. The afternoon seemed to fly by. One final session in the classroom and then day one is concluded.

### **The Best Way To Learn Is Through Experience**

Day two was even more exciting than day one. We were all looking forward to going onto the oval. We hit the classroom before we got into the cars. We drove our Mustangs to the track and parked, then back into the SHO for a little instructor-behind-the-wheel demonstration. Handling the oval was designed to teach the student all of the basic cornering techniques like taking the proper line through a corner and the best use of the accelerator, brakes and steering. Randy provided an excellent demonstration on the proper line as well as showing us what it felt like to loose control and go into the dirt. Obviously, the school believes that the best way to learn is through experience.

This was the best. We were driving fast and there was really little chance of doing anything that could cause damage. The track is set up so that if we ran off the course the car would get a little dirty, and we would experience the thrill of loosing control in a relatively safe environment. The bell rings and it's back to the class room. Up to this point everything is going well. Then came "Heel and Toe Downshifting" which was, by far, the most challenging part of the course. I will use the text book to explain: Heel and Toe: this is the technique of operating the brake and gas pedal simultaneously with the right foot while clutching with the left foot. Heel and toe downshifting allows you to brake and match the engine rpms with rear wheel rpms which allows for smooth downshifting. We practiced while sitting in the car. I was starting to worry. I can't do this sitting still let alone while driving. Finally the segment is over, and we go to the auto cross exercise.



### **I Will Never Get This Right**

The road course has been set up in the parking lot. Once again the instructor drives us through the course before we line up in our cars. For this exercise there is no restrictions—go as fast as you can. Oh yeah, yell if you knock down a cone because you have to buy a beer for the instructor. They are timing us. This is so much fun. Again, we return to the classroom. I have forgotten all about that heel and toe thing. “Not so fast, ma’am, we’re going back to the oval and this time we will be practicing heel and toe.” After several laps the instructor climbs in the passenger seat with me behind the wheel. OH, GREAT! I’m missing gears, over-revving the engine and driving way off line. Randy concludes that I really need some work, and I conclude that I will never get this right. I am really frustrated, I just want to go back to the auto cross. End of day two.

### **Just Go To It...Final day**

We are going to spend the morning on the auto cross and then we suit up for the afternoon road course. The course is a 1.6 mile, 15-turn road course. We go over each turn. The road course is laid out on a large board in the front of the classroom. The instructor discusses the apex and highlights and where each turn should take place. It’s time—helmet on, driving suit zipped, five-point harness locked into place—we’re off. We’re told about the areas we can really get into trouble; we can’t pass without getting a sign from the car in front of you, but there are no restrictions on speed. Just go to it. Nervous? Yes! Excited? Very! Worried? A little.

As I pull out onto the course and put my foot into the throttle a feeling of such excitement comes over me. This is such a rush. I build up my speed and I’m following the lines fairly well. With a couple of laps under my belt it’s time to try the heel and toe. Much to my surprise I was doing it. Randy flags me in to go along for a ride. It wasn’t just my imagination. Randy quickly comments that I am using the heel and toe much better. “I’m not saying that it’s good, just better.” I pull back into the pit after turns number 13 and 14 give me problems. Randy and I change positions and he shows me the lines once again at a much faster speed than what I was driving. Even with the five point harness I still get a little motion sickness.

It’s my turn, and I decide that I must go faster. Everything starts to come together and by the end of the day I feel that I have really improved my driving skills. Was the experience worth it? To me it was and so it seems for the other participants too. Everyone leaves with smiles on their faces. Now, back in Carlisle, we’re all looking forward to a long, hot, busy summer. Then there’s next winter... and vacation... let’s see... hummmm...

*Lisa Leathery is the Marketing Director at Carlisle Productions. This organization is responsible for the All-Ford Nationals show and Lisa is one of the reasons the SCCoA gets treated so well at the show each year.*

*Thanks Lisa, ....by the way, we are going to need approx. 50 to 60 spaces for the SCCoA at next year’s show!* Editor

# **What Makes A 35'Th Anniversary SC Unique?**

By Chuck Coryell

In March of 1990 Ford introduced a limited edition 35th Anniversary Thunderbird Super Coupe. As many people become the second or third owners of these distinctive SC's they may not realize just exactly what it is that they are driving. Along with owning two of these black beauties I have contacted numerous sources both inside and outside of the Ford Motor Company in search of some specific answers as to what makes up the 35th SC.

Planning for the 35th started well before the 1990 model year. In fact, before the 1989 SC was released a design specialist in Ford, Mr. Jerry Senior, was busy at work creating the 35th on paper. His early efforts are reflected in all 1989 through 1993 SC's in that the lower front fascia on all these cars has a distinct separation in the cladding to allow for a two-tone paint line. From start to finish Mr. Senior oversaw all aspects of the 35th SC's design and execution.

From the exterior ALL 35th SC's can be identified by the Black over Titanium color scheme. Brilliant Blue pinstripping runs along both sides of the car just above the trim. The taillights received Brilliant Blue trimmed T-bird inserts and the T-bird hood ornament also came trimmed in the same color. Only one type of wheel was available for this car and that was the five-spoke road wheel finished in black. The wheel used an experimental paint process performed in Italy. Unfortunately, it does not last but can be duplicated for about \$350-400 a set. 35th Anniversary badges on the front fenders complete the exterior detail.

The interior of the 35th SC is set apart from the pack by its color and materials. The seats are production SC seats with hides provided by Wolverine. The same guys that make Hushpuppy shoes. Seat inserts were made of gray suede bolstered by black leather and separated by Brilliant Blue piping. Anniversary badges are located above the armrests.

Under the hood you will find only one difference setting the 35th SC apart from all other SC's (probably the most important one also). The build tag on the passenger side of the radiator support will have the number/letter combination of 35TH stamped into it. I have come across no variations to this.

Along with a distinctive Super Coupe, the \$1863 Anniversary Option (Mr. Senior fought to keep the price down and attributes the lower than 5000 unit production to the pricey option) also gave the purchaser a gift package for their car. This include floor mats, car cover with storage bag, key fob, suede cleaning kit, black chrome keys, and a pen all with the Anniversary Script. Also included was a copy of Automobile Quarterly "Soaring Spirit" 35 years of the Ford Thunderbird. These items were sometimes sent directly to the purchaser but were also known to be sent to the dealer. Quite a few original owners never received the package.

35th SC trivia abounds and I've tried to run down as many pieces as possible. I talked with individuals in Ford marketing, research and development, advertising, and also Mr. Senior before he retired. I established a registry with Ford to help in identifying owners and still maintain it when I'm not at sea.

One of the major tragedies with this car was the aforementioned Anniversary gift package. Mr. Senior designed the package and Adistra Corporation was responsible for the production of the five thousand of these to be sent to original purchasers. Vehicle production was limited to three thousand one hundred and seventy one cars (disputable) so there were plenty of extra gift packages. Ford gave Adistra control over distribution and storage. End result was that not all owners received a package and all the extra packages were destroyed due to inadequate customer demand. It is too bad that the floor mats could be more rare than the car. When I contacted Ford concerning the destruction, I received a nice letter in reply stating that they were unaware that this had happened and were putting in place a system that would not allow it to happen to other special edition vehicles in the future.

There were six different iterations of the floor mats used in the 35th SC. Once Mr. Senior decided on the style and colors, production of the carpet was given to Nasland Carpet and the mats were in turn produced by Pretty Products. I have seen a set of mats go for between \$50-125 at some of the car shows. The dash plaque that was supposed to be issued with the vehicle never came about. Copies of the production version exist but Ford did not send them out and instead sent a letter apologizing for not doing so.

The steering wheel did not start out as the standard SC affair. Numerous designs were looked at and the one Mr. Senior backed was a wood and leather number with Anniversary badging. The safety mavens brought it to a screeching halt with concerns of liability if it shattered in an accident.

The advertising for this car was not overly exciting. Most buyers did not even know of the car until they saw it on the showroom floor. Ad packages were sent to Ford dealers and included posters, clip-art, calendars, patches and some factory hype for the car. Magazine articles were aplenty. Like or dislike of the car seemed to be random among the different magazines. Full-page ads were placed in numerous publications during the spring of 1990 and I am still finding them in odd locations.

This article really only scratches the surface of the data available for these beautiful cars. The research will probably never be complete for some people like myself but the chase is most of the fun anyway. Hopefully this will give others a place to start or just a new appreciation for the 35th Anniversary Thunderbird Super Coupe.

*Chuck Coryell is a full-time naval officer and wrote this article for CT on a break from his 12 to 16 hour days while aboard ship somewhere near Kosovo. He is currently at sea for six months stationed on the USS Leyte Gulf, which is a ship in the USS Roosevelt battle group. Although duty calls this summer, you'll see Chuck in one of his two (and maybe he'll bring both) 35'th Anniv. SCs at the shows in 2000 such as Carlisle/Columbus/others.*

*Thanks Buddy, Editor*

# **Ford Thunderbird SC Rear Half-Shaft Installation:**

By George Davenport

## **Removal:**

- 1.) Remove the rear wheel center cap to expose the half-shaft retaining nut. Loosen this nut with the proper sized socket (36mm). It is a right hand thread on each side and will be **TIGHT (250 ft/lbs)**. Ford recommends not re-using this locking nut. Loosen lug nuts.
- 2.) Jack-up car, remove lug nuts, wheel, caliper, rotor, and retaining nut. Tie caliper up out of the way. Support the car on good jackstands.
- 3.) Remove nut and bolt that hold upper control arm to aluminum knuckle and tie upper control arm out of the way.
- 4.) Using a large three-jaw puller attached to the hub, push the end of the half-shaft out of the hub, letting the knuckle swing forward. Pull half-shaft free of hub and knuckle.
- 5.) Using a suitable tool (like a large screwdriver) gently pry the half-shaft out of the differential. Be careful not to damage the ABS exciter ring. There are also seals in the differential where the half-shaft goes into the differential, take care not to put the screwdriver in too far as this could damage the seals. You want to pry the half-shaft straight out. Of course, it is highly recommended to replace the differential seals at this time to prevent future leaks from the gear housing. The half-shafts are held in the differential by ring clips that will pop out of the side gears as you pry on them. Ford has a special tool for this, but it is not required.

## **Installation:**

- 1.) Install new seals in differential (if necessary).
- 2.) Install new dust seals on the outboard CV joint (if necessary). This seal can be removed by tapping around it with a screwdriver. It should be installed with the flange part pointing toward the knuckle or outward. It can be driven on with a suitable diameter piece of pipe. (It is usually attached to the new half-shaft.)
- 3.) Insert one splined end of the half-shaft with the ring clip into the differential until it is firmly seated in the side gear.
- 4.) Clean and lightly lubricate splines on half-shaft and insert into splined hub. Install and tighten upper bolt. (Upper bolt 118-148 ft/lbs). Make sure coil spring is seated in the correct position.
- 5.) Hand tighten the retaining nut.
- 6.) Install rotor, caliper (23-26 ft/lbs), wheel and hand tighten lug nuts. Lower car back on to the ground. Torque new retaining nut to specifications (250 ft/lbs)
- 7.) Torque lug nuts to specifications (85-105 ft/lbs) and re-install center cap.

## **Notes:**

When you buy your new half-shafts and look at them closely, you should see the ring clip on the end that goes into the differential. There should also be a bearing seal on the end of the half-shaft that goes into the hub. It is just a metal ring with rubber and seals the back of the knuckle to keep water and dirt out of the bearings.

On most 5-speeds (and early automatics), the right side half-shaft was of larger diameter than the left side. These shafts are no longer available and you will probably get two of the smaller shafts when you purchase new ones. Unless you can still find some of Bill Hull's "BIG DAWG" half-shafts and put one of these larger shafts on each side.

# Oil Filters – In Depth

*I found this article by Russ W. Knize, who is a Chrysler Turbo nut, on the Internet and found it very interesting. He analyzed numerous oil filters and published a very detailed report on the popular brands available today. I read it and learned much about them. To read his full report, which includes numerous tables and pictures, go to <http://minimopar.simplenet.com/oilfilterstudy.html>.*

*Editor*

One weekend I set out to every auto parts store in my area and bought every brand of oil filter I could find. I chose to get the filter for the early Ford 5.0L V8 engine. The reason is that this is a popular filter, it is large so that I can unveil any fake miniature internal components, and it fits on most 2.2L and 2.5L engines. Design-wise it is fully compatible with our oil systems and is an excellent replacement for the pathetic filter that was designed for our engines. I was able to find 20 different filters spanning several brand names. They are (in alphabetical order):

AC Delco Duraguard PF2, AC Delco Duraguard PF2L, AMSOIL SDF15, Car And Driver SF-1A, Champion, Deutsch D539, Deutsch D545, Fram Extra Guard PH8A, Fram Tough Guard TG8A, Fram Double Guard DG8A, Hard Driver HD01, Mobil 1 M1-301, Motorcraft FL-1A, NAPA Gold 1515, Pennzoil PZ-1, PowerFlo SL30001, ProLine PPL-30001, Purolator Premium Plus L30001, Purolator Premium Plus L390001, Purolator Pure One PL30001, Quaker State Q58A, STP S-01, Wix 51515

## **ANALYSIS:**

### **Duraguard PF2**

Some years ago, a study was done on oil filters that uncovered the Fram filter farce. They named AC Delco's filter to be one of the better models. Later, AC Delco changed their design and went to a cheaper setup made by an offshore manufacturer. Even so, I definitely recommend this filter over the design of any Fram filter. In fact, I even recommend it over the Champion and I (personally) prefer it over the Purolators. However, the Wix filter is probably of a higher quality due to the AC Delco's mediocre anti-drainback valve. Since the Wix is twice the price, I still recommend the AC Delco.

The filter cartridge has a large outside diameter with deep pleats, which gives the filter element the maximum flow possible. At first glance, it appears to have little filter element media, but the surface area measure was surprising: 315 sqin. The unit had a solid top end cap because the bypass valve is at the bottom, which is a well constructed spring-loaded steel with a nitrile seal design. The nitrile rubber diaphragm-type anti-drainback valve doubles as the seal between the bypass valve and the cartridge. The only drawback to this design is that the bypass valve seats metal-to-metal against the backplate. This could allow oil from the clean side of the filter to seep back into the oil pan, but it won't allow the dirty oil in the filter to seep back. Oil that is in the main gallery usually leaks out through the main bearings anyway while the engine sits. This is probably a better alternative to the high-end Wix, which can allow oil to seep from the dirty side of the filter to the clean side. One disadvantage to the AC Delco is that the anti-drainback valve seals against a rough backplate. I noticed that if I blow air through the oil outlet, air slowly leaks past the valve. Even so, I have been getting testimonials that the AC Delco stops the valve train noise problems associated with the Fram filter, so it may seal fine once it has been exposed to oil. The Wix and Purolator filters seal perfectly.

The telltale signs for an AC Delco filter are: Five large holes for the oil inlet and 6 spot welds on the rim surrounding them. There are no crimps holding the gasket in place. When you look through the inlet holes, you can see the metal bypass valve with its 12 small holes and the black anti-drainback valve diaphragm around it. Through the center outlet hole, you can see the spring for the bypass valve.

### **AMSOIL DF15**

This filter has been acquired and is awaiting disassembly.

### **Car And Driver SF-1A**

This filter is a Champion filter with the one-piece filter cartridge and the fragile paper filter element.

### **Champion ?**

This filter is manufactured by Champion Laboratories, Inc. (NOT the same guys who make the spark plugs), and is sold under several other brand names. Champion admits some of these outright, and they are: Lee, Lee Maxi, and STP. Though they claim the Lee Maxi is a higher quality filter, they make no claims as to why. It sounds more like a marketing scheme to me, but I have yet to prove it by buying the filter.

The Champion design has metal end caps on the filter cartridge, with the bypass valve stamped right into the bottom end cap like the Purolator. I refer to this as a one-piece filter cartridge. Though definitely not the same design as the Purolator, it does use the same type of leaf-spring-type spacer at the top of the cartridge and the nitrile anti-drainback valve, which doubles as the cartridge-to-backplate seal, at the bottom. The drawback to this one-piece cartridge is the rather fragile filter element paper media. It is a thin, brittle paper that rips fairly easily. It was difficult to disassemble these cartridges without destroying the filter element. One other issue is that I sometimes noticed was some rust on the backplate of these filters. Since the rust is usually around by the inlet holes, any loose rust would be caught by the filter.

The telltale signs for a Champion filter are: 6 large holes for the oil inlet, one of which is larger than the others. Only the black anti-drainback valve can be seen through the inlet holes. There are 6 large crimps holding the gasket in place. Through the center outlet hole, you can see the bypass valve spring. Usually, the backplate metal is dull, or even rusty.

### **Deutsch D539**

This filter is a Champion filter with the one-piece filter cartridge and the fragile paper filter element.

### **Fram**

Years ago Fram was a quality filter manufacturer. Now their standard filter (the radioactive orange cans) is one of the worst out there. These filters are manufactured by Allied Signal, Inc. **Please do not buy these filters. By boycotting it, we may be able to cause some change. I have personally had one if these filters fail and actually cause engine damage due to bits of paper and glue floating around in the engine.**

### **Fram Extra Guard PH8A**

This filter cartridge has a small outside diameter with a rather low filter element surface area (193 sqin), and features cardboard end caps that are glued in place. The rubber anti-drainback valve seals the rough metal backplate to the cardboard end cap and easily leaks, causing dirty oil to drain back into the pan. If you have a noisy valve train at startup, this filter is likely the cause. The bypass valves are plastic and are sometimes not molded correctly, which allows them to leak all the time, but they may leak anyway. The backplate has smaller and fewer oil inlet holes, which may restrict flow, and is made of thin material.

The telltale signs for a Fram Extra Guard are: It has 8 small holes for the oil inlet and a thin, cheap looking backplate, and is currently stamped with a "2Y". There are 5 very small crimps holding the gasket in place. If you look into the center hole all the way to the top of the filter, you will see a kind of "button" in the end cap of the cartridge (which looks like it's made of metal from there). This is the plastic bypass valve.

### **Fram Tough Guard TG8A**

Even with all the problems of the other Fram filters, this one is not too bad. Aside from the filter cartridge, it is a very good design. Too bad Fram can't get passed the cardboard end caps.

It has an improved filter element with more surface area (248 sqin), a heavy silicone anti-drainback valve with a good sealing surface, the same plastic pressure relief valve but with an integral screen to keep out large particles, and enough inlet holes for good flow. The only real drawback to this filter is that it is capped on each end with cardboard instead of metal.

The telltale signs for a Fram Tough Guard filter are: It has a better backplate that is usually shiny, with six larger holes for the inlet and 6 spot welds around the them. There are 6 large crimps holding the gasket in place. When you look through the inlet holes, you can see the orange anti-drainback valve. If you look

into the center hole all the way to the top of the filter, you will see a kind of "button" in the end cap of the cartridge (which looks like it's made of metal from there). This is the plastic bypass valve.

### **Fram Double Guard DG8A**

This is a frustrating filter. Please do not buy it. It is one of the most expensive filters you can buy and it is junk. Inside is a basic Fram Extra Guard (PH8A) filter element that has larger diameter holes at the end and has been pre-oiled. You can see this in the picture above (far left). I assume this is to hold the Teflon particles in the filter element before the unit is installed. Don't put Teflon in your engine. It does not belong there! DuPont does not recommend using their Teflon product in internal combustion engines. Although it has the worst filter element possible (193 sqin), it does have a clever spring-loaded nitrile rubber anti-drainback valve and bypass valve combination. Too bad the rest of the filter is worthless. Please don't buy this filter!

The telltale signs for a Fram Tough Guard filter are: It has a better backplate that is usually shiny, with six larger holes for the inlet and 6 spot welds around the them. The backplate should be stamped with a "1K". There are 6 large crimps holding the gasket in place. The anti-drainback valve diaphragm behind the inlet holes is black. If you look into the center hole all the way to the top of the filter, you will not see the "button" in the end cap of the cartridge (which looks like it's made of metal from there).

### **Mobil 1 M1-301**

Like the Champ filter, this filter is made by Champion Industries. However, it uses a unique end plate and a thicker can that make it the strongest filter available for wide distribution retail sale. It also does not use the fragile paper media of the Champion filter. I'm happy to say that this filter is NOT a fake. It is definitely a unique design.

It uses a synthetic fiber element that can filter out very small particles and is much stronger than the fragile, Champion paper media. It is rated just under the Purolator Pure One as far as filtering capability, but is still very much above conventional paper filters. It also has a very strong construction to withstand high pressure spikes during start-up. Given the choice between the Purolator Pure One and the Mobil 1 filters, I would choose the Mobil 1 because of the restriction concerns of the Pure One and that pesky assembly string. However, as with all Mobil 1 products, expect to pay 2 - 3 times as much for this filter.

### **Motorcraft Long Lasting FL-1A**

This is an interesting filter. Basically, it is a Purolator Pure One filter cartridge in a Purolator Premium Plus case. Don't be fooled by the differently shaped holes cut into the oil inlet. This is the only difference. This is a good filter design and if you want to get a Purolator Pure One filter, get this one instead: it is cheaper. Like the Purolator Pure One, this filter cartridge features a very large element surface area (400 sqin), but with many pleats (64). This packs the filter together rather tightly and may restrict flow somewhat. I could identify the Pure One element media by a purple dye they use at the seam. It also has the mysterious assembly string wrapped around the outside of the element. Like the Purolators, it features a spring-loaded metal bypass valve and a nitrile rubber diaphragm-type anti-drainback valve. The bypass valve is stamped right into the bottom end cap of the cartridge, so it is all one piece.

### **NAPA 1515 Gold**

This filter is a Wix filter with the two-piece filter cartridge. As with the Wix filter, the metal bypass valve seats on the metal cartridge end cap with no gasket of any kind. Some small amount of oil probably leaks through there. It also has the tougher paper filter media of the Wix.

### **51515 Silver**

This filter is a Champion filter with the one-piece filter cartridge. As with the other Champion filters, it has the fragile paper media for a filter element. This is based off of my observation of the filter's case. I did not purchase this filter to tear down, but may do so in the future.



### **Pennzoil PZ-1**

This filter was a big disappointment, but I knew what I was in for the moment I took it out of the box. It is a Fram Extra Guard (PH8A) in every way, shape, and form. The only difference is the yellow paint and Pennzoil logo. **As with the Fram, please do not buy this filter.**

### **PowerFlo SL30001**

As you may suspect by the part number, this filter is a Purolator Premium Plus. There were no manufacturing differences, but the cost was an average of \$2 instead of \$3.

### **ProLine PPL-30001**

Yet another Purolator Premium Plus. All measurements were the same. The cost was \$2. One thing I noticed with this particular example was that the mysterious assembly string was tied too tight and had damaged the filter element. Although only this one had the problem, I am suspicious of this filter design as a whole (including all of the Purolators).

### **Purolator Premium Plus L30001**

Here is a fairly well designed filter, especially for the price. One odd thing about Purolator's filters is a string that is always wrapped around the filter element. I assume that this is there to hold the element in place while the glue in the end caps cures. Of all the Purolator-based filter I tested, there was one (the ProLine) that had filter element damage from this string. Although it was one of five tested, I am weary of this design. Even though the element was crushed a bit, it was not ripped. I will take apart a used one at my next oil change.

The filter cartridge has an impressive surface area of 316 sqin, which is very close to the AC Delco Duraguard. The difference is that Purolator's filter element is compressed into more pleats (51) than the AC Delco. This may restrict flow somewhat, but not as much in this model than the Pure One. It features a spring-loaded metal bypass valve and a nitrile rubber diaphragm-type anti-drainback valve, which doubles as the seal between the backplate and the cartridge. Like the Champion, this bypass valve is stamped right into the bottom end cap of the cartridge, so it is all one piece.

The telltale sign for a Purolator filter are: 8 medium-sized holes for the oil inlet and nothing but a black (or orange for the Pure One) diaphragm to be seen through them. There are 6 large crimps holding the gasket in place. Through the center outlet hole, you can see the spring for the bypass valve.

### **Pure One PL30001**

This filter has a few improvements over the Premium Plus. It has a denser filter media to filter out smaller particles and more surface area to make up for the flow restriction. Aside from those the cartridge it is the same construction as the Premium Plus.

The filter cartridge has an even more impressive surface area of 400 sqin. The potential issue is that this filter element is compressed into even more pleats (64) than the Premium Plus. This may restrict flow more than it helps relieve it. It also features a spring-loaded metal bypass valve and a silicone rubber diaphragm-type anti-drainback valve, which doubles as the seal between the backplate and the cartridge. The bypass valve is located at the base of the cartridge, not at the top.

### **Quaker State QS8A**

Yet another Purolator Premium Plus. Who are these people fooling? Cost was a bit over \$2. If you like Purolators and you like the color green, buy this filter.

### **STP S-01**

This filter is the Champion Industries filter with the one-piece filter cartridge and the fragile paper element.

### **Wix**

These filters are manufactured by the Dana Corporation, who also manufactures all of the Wix clones. These include NAPA and many OEM filters.

NOTE: This section of the page was incorrect in regards to the "low-end" and "high-end" Wix concept. What I thought was a "low-end" Wix is actually manufactured by Champion Industries. My thanks to those who pointed this out to me. If you see any remaining references to low-end and high-end Wix filters, let me know. Hopefully I found them all.

This filter has metal cartridge end caps, but has a separate bypass valve that rests against the bottom end cap, like the AC Delco. I refer to this as a two-piece filter cartridge. Like the Champion, it uses an anti-drainback valve that doubles as the bypass valve-to-backplate seal. Instead of the leaf-spring-type spacer that most filters use, these use a stiff coil spring at the top of the cartridge. Like the Purolator, the filter element paper media is stronger than the Champion media. The only drawback to this design is that the bypass valve seats metal-to-metal against the bottom cartridge end plate. This could allow dirty oil to seep from the dirty side to the clean side of the filter, bypassing the element. The design will not allow oil to seep back into the pan, though.

The telltale signs for a Wix are: 6 large holes for the oil inlet with only the black anti-drainback valve to be seen through them. There are 6 "notches" that hold the gasket in place. Through the center outlet hole, you can see the bypass valve spring. Usually the backplate metal is shiny.

### **51515**

This filter features a good surface area, but a lot of shallower pleats. This makes it similar to the Purolator's pleats.

### **Conclusions:**

All of this information can be a bit overwhelming. When it comes down to it, all of the lower-priced filters (\$5 or below) have their ups and downs. In reality, there are only five different manufacturers available. Here are the low-cost filters that I feel safe using, based on all this information (in alphabetical order): AC Delco, Purolator, and Wix. Here are my reasons for each:

I like the deep pleats of the AC Delco's filter element and the fact that it is not weak like the Champion. I also like the way that the anti-drainback valve diaphragm makes a positive seal to the filter cartridge and to the bypass valve, which sort of "snaps" into the diaphragm. The fact that the bypass valve seats against the backplate metal-to-metal is not a big deal. It probably doesn't leak anyway, but if it does, only clean oil can get back into the pan. In case you haven't noticed, I like this filter. :-)

It is the best filter that you can buy for \$3.

The Purolator is a very solid design. It seems to have the toughest paper filter element of them all and the bypass valve is built right into the cartridge. There are no internal sealing problems with this filter at all. I wish the inner diameter of the cartridge was smaller so that the pleats could be fewer and deeper. The Premium Plus version looks like it flows fine, but the Pure One or Motorcraft versions seem to be packed a bit too tightly. That assembly string still bothers me somewhat, but not enough to avoid these well-made filters completely. My '88 Shadow ES (as of 2/24/99) has a Purolator Premium Plus in it right now. I plan to cut it open and see how it holds up at the next oil change.

I don't care for the Champion filters. The filter elements are way too fragile to give me much confidence in them. That, along with the rusty backplates, makes me shy away from them. Some decent filter material and a little oil used during assembly would make this into a fine filter. Like the Purolator, I like how the bypass valve is built right into the filter cartridge. This filter has no internal sealing problems, either. Even so, I won't be using them.

The Wix filter is a very well made filter. My praise goes to Dana for putting some effort into it. Aside from being a stronger case, it also uses a much better filter element (about the same as the AC Delco). Like the AC Delco, it also has a minor internal sealing problem. In this case, the bypass valve has a metal-to-metal seal to the filter cartridge. It probably doesn't really leak either, but if it did, dirty oil could get to the clean

side of the filter. Otherwise it is a good filter. Given the choice between the Wix and the AC Delco at the same cost, I'd pick one while blind-folded. However, the Wix is about twice the price, so...

If money were no object, I would go with the Mobil 1. Although it has Champion internals, it has a really tough synthetic fiber filter element, which is the Champion's only major downfall. The element is stronger and thicker than the Purolator, but they claim that it flows just as good as paper. As with the other Champion filters, it has no internal sealing problems. The \$10 price tag is a bit steep, but it is the best filter you can buy retail. Watch for "Mobil 1 Oil Change" sales, which includes 5 quarts of Mobil 1 synthetic oil and a Mobil 1 filter. Granted, there are probably better filters available through mail order, but I haven't tested those yet...

I reserve the right to change my opinion at any time. It could easily change if another filter (or one of the filters I am waiting on) comes around and is better.

It should be clear that Mopar filters are really nothing special. Unless you are trying to have a perfect restoration and need that Mopar logo, there is no reason why you should be buying Mopar oil filters. Most of them seem to currently be Purolators or Champions, but that could change at any time.

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*Here is a letter to Russ Knize from a former Allied Signal employee who states his findings on the quality (or lack of quality) of the Fram brand products after he read the above article. Editor*

Russell,

I obtained great satisfaction from reading your oil filter survey. I worked for two years as the oil-filter production line engineer in an Allied-Signal FRAM facility and I can confirm every bad thing you have said about FRAM automotive filters. That's from the horse's mouth, as it were. I'm also a quality engineer and can confirm that FRAM applies no quality control whatsoever to any of the characteristics for which we buy oil filters. I frequently saw filter designs which were barely capable of meeting J806. Many of FRAM's designs will block and go to bypass after trying to filter very little contamination. There were often leakage paths at the paper end discs when these were not properly centered on the elements. Some designs had the pleats so tightly packed against the center tube that they would block off in no time.

I had discovered that the FRAM HP1 that I had been buying for about \$20 Cdn was EXACTLY the same as a PH8 inside - the only difference being a heavier can - no advantages in flow capacity. The paper filtration media was of apparently poor quality and the process of curing the paper resin was very inconsistent - elements would range from visibly burnt to white. FRAM's marketers admitted that there was just about no way the public could ever prove that an oil filter contributed, or did not prevent, engine damage.

The only thing FRAM tested for was can burst strength. Another problem that they have from time to time is in threading the filter base - often there are strands of metal left behind on a poorly formed thread. I have not used a FRAM filter since I started working there. Their claims are entirely and completely marketing b.s.

If people really want to protect their engines, a good air filter is vital (which excludes FRAM from that list as well) and a combination of one depth and one full-flow hydraulic filter, together in parallel, will do the job of filtration to perfection. Thanks for doing a great job in trying to get the truth out! You can quote me anytime.

[name withheld]

# **Technical Descriptions Of Our Favorite Tools**

**HAMMER**: Originally employed as a weapon of war, the hammer nowadays is used as a kind of divining rod to locate expensive parts not far from the object we are trying to hit.

**MECHANIC'S KNIFE**: Used to open and slice through the contents of cardboard cartons delivered to your front door; works particularly well on boxes containing seats and convertible tops.

**ELECTRIC HAND DRILL**: Normally used for spinning steel Pop rivets in their holes until you die of old age, but it also works great for drilling mounting holes in fenders just above the brake line that goes to the rear wheel.

**PLIERS**: Used to round off bolt heads.

**HACKSAW**: One of a family of cutting tools built on the Ouija board principle. It transforms human energy into a crooked, unpredictable motion, and the more you attempt to influence its course, the more dismal your future becomes.

**WISE-GRIPS**: Used to round off bolt heads. If nothing else is available, they can also be used to transfer intense welding heat to the palm of your hand.

**OXYACETYLENE TORCH**: Used almost entirely for lighting various flammable objects in your garage on fire. Also handy for igniting the grease inside a brake drum you're trying to get the bearing race out of.

**DRILL PRESS**: A tall upright machine useful for suddenly snatching flat metal bar stock out of your hands so that it smacks you in the chest and flings your beer across the room, splattering it against that freshly painted part you were drying.

**WIRE WHEEL**: Cleans rust off old bolts and then throws them somewhere under the workbench with the speed of light. Also removes fingerprint whorls and hard-earned guitar calluses in about the time it takes you to say, "Ouc...."

**HYDRAULIC FLOOR JACK**: Used for lowering a car to the ground after you have installed your new front disk brake setup, trapping the jack handle firmly under the front fender.

**EIGHT-FOOT LONG DOUGLAS FIR 2X4**: Used for levering a car upward off a hydraulic jack.

**TWEEZERS**: A tool for removing wood splinters.

**PHONE**: Tool for calling your neighbor to see if he has another hydraulic floor jack.

**E-Z OUT BOLT AND STUD EXTRACTOR**: A tool that snaps off in bolt holes and is ten times harder than any known drill bit.

**TIMING LIGHT**: A stroboscopic instrument for illuminating grease buildup.

**TWO-TON HYDRAULIC ENGINE HOIST**: A handy tool for testing the tensile strength of ground straps and brake lines you may have forgotten to disconnect.

**CRAFTSMAN 1/2 x 16-INCH SCREWDRIVER**: A large motor mount prying tool that inexplicably has an accurately machined screwdriver tip on the end without the handle.

**BATTERY ELECTROLYTE TESTER**: A handy tool for transferring sulfuric acid from a car battery to the inside of your toolbox after determining that your battery is dead as a doornail, just as you thought.

**TROUBLE LIGHT**: The mechanic's own tanning booth. Sometimes called a drop light, it is a good source of vitamin D, "the sunshine vitamin," which is not otherwise found under cars at night. Health benefits aside, it's main purpose is to consume 40-watt light bulbs at about the same rate that 105-mm howitzer shells might be used during, say, the first few hours of the Battle of the Bulge. More often dark than light, its name is somewhat misleading.

**PHILLIPS SCREWDRIVER**: Normally used to stab the lids of old-style paper-and-tin oil cans and splash oil on your shirt; can also be used, as the name implies, to round off Phillips screw heads.

**AIR COMPRESSOR**: A machine that takes energy produced in a coal-burning power plant 200 miles away and transforms it into compressed air that travels by hose to a Chicago Pneumatic impact wrench that grips rusty bolts last tightened 40 years ago by someone in Detroit, and rounds them off.

**PRY BAR**: A tool used to crumple the metal surrounding that clip or bracket you needed to remove in order to replace a 50 cent part.

**HOSE CUTTER**: A tool used to cut hoses 1/2 inch too short.

# **Why It's Great to Be A Guy**

- Phone conversations last 30 seconds
- You know useful stuff about tanks and airplanes
- A 5 day vacation requires only one suitcase
- Bathroom lines are 80% shorter
- You can open all your own jars
- Old friends don't care if you've lost or gained weight
- When clicking through the channels you don't have to stop on every shot of someone crying
- You don't have to lug a bag of "necessary" items with you everywhere you go
- You can go to the bathroom alone
- Your last name stays put
- You can leave a hotel room bed unmade
- You can kill your own food
- The garage is all yours
- You get extra credit for the slightest act of thoughtfulness
- You see the humor in "Terms of Endearment"
- Cleaning the toilet is optional
- You can be showered and ready in 10 minutes
- Wedding plans take care of themselves
- If someone forgets to invite you to something, they can still be your friend
- Your underwear costs \$7.50 for a pack of 3
- None of your coworkers have the power to make you cry
- You don't have to shave below your neck
- You don't have to curl up next to some big, hairy guy every night
- If you're 34 and single, no one notices
- Chocolate is just another snack
- You can quietly enjoy a car ride from the passenger seat
- Flowers and/or Duct Tape fix everything
- You never have to worry about other's feelings
- Three pair of shoes are more than enough
- You can say anything and not worry about what people think
- You can whip your shirt off on a hot day
- Car mechanics tell you the truth
- You don't care if someone doesn't notice your new haircut
- You can watch a game in silence for hours without your buddy thinking "He must be mad at me"
- One mood, all the time
- You can admire Clint Eastwood without having to starve yourself to look like him
- Gray hair and wrinkles add character
- Wedding dress \$2000, Tux rental \$100 bucks
- You don't care if someone is talking behind your back
- You don't pass on the dessert and then mooch off someone else's
- The remote is yours and yours alone
- You need not pretend you're "freshening up" when you go to the bathroom
- If you don't call your buddy when you said you would, he won't tell your friends you've changed
- If another guy shows up at the party in the same outfit, you might become lifelong buddies
- The occasional well-rendered belch is practically expected
- If something mechanical didn't work, you can bash it with a hammer and throw it across the room
- New shoes don't cut, blister, or mangle your feet
- You think the idea of punting that small, ankle-biting dog is funny
- If you retain water, it is in a canteen

Although CT is not strictly a MAN's magazine, everyone should appreciate these thoughts....no hard feelings ladies!



*Here are some common sense ways to  
unleash all of the horsepower you can  
...with DynoMax !*

*"Getting the most out of your exhaust system  
modifications is easy."*

### Restrictive Exhaust

A restrictive exhaust creates back pressure in the exhaust system that hurts your vehicle's performance in two ways:

1. The engine has to work harder to force exhaust gases out of the cylinders.
2. Engines cannot scavenge burned exhaust gases out of the cylinder efficiently. This leaves exhaust gases in the cylinder to dilute incoming air/fuel mixtures and rob your engine of horsepower.

### Pipe Diameter

A common misconception is that the larger the diameter, the better the system. But, bigger isn't always better. Systems that are too large in diameter can actually hurt performance.

As a general rule, switching to a performance system that is 1/4" to 1/2" inch larger than stock will provide you with the *best* horsepower increases. To determine which pipe diameters will be best for your system, decide what RPM range your engine will operate at, most of the time. Smaller diameter pipes will produce low to mid RPM torque. Larger diameters produce mid to high RPM torque.

## HORSEPOWER DEPENDS ON FLOW

*(not pipe diameter alone)*

**Bigger isn't always better.  
Systems that are too large  
in diameter can actually hurt  
performance. Improved flow  
is what you need.**

**Having large diameter pipes  
isn't what's cool. Going fast  
and making horsepower is.**

Engine CID	Pipe Diameter (inches)		Horsepower
	Single	Dual	
150-200	2.00	2.00	100
	2.25	2.00	150
	2.50	2.00	200
200-250	2.25	2.00	150
	2.50	2.00	200
	2.50	2.25	250
250-300	2.50	2.00	200
	2.50	2.25	250
	3.00	2.50	300
300-350	3.00	2.25	250
	3.00	2.50	300
	3.50	2.50	350
350-400	3.30	2.50	300
	3.50	2.50	350
	3.50	2.50	400
400-450	3.50	2.50	350
	4.00	3.00	400
	4.00	3.00	450
450-500	4.50	3.50	400
	4.50	3.50	450
	4.50	3.50	500

### Balance Tubes

Balance Tubes (or 'H' pipes) help to even out the pulses in the exhaust gases and balance the back pressure between both banks of your engine. They not only help improve horsepower, but sound as well.

To find the right location to install your balance tube, apply a strip of paint down the front portion of the exhaust pipes. The balance tube should be placed where the paint burns off (bubbles) on the exhaust pipes. Generally, put the balance tubes as close to the headers as possible. The balance tube diameter should be at least 75% of the diameter of the pipes with which it connects.



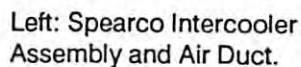


Get a quick 7% increase in maximum power at 5,000rpm and as much as an 11% increase at 3,500 rpm with this new intercooler and inlet air duct assembly from Spearco. The components are easily installed in about two hours with simple hand tools. This presents by far the easiest, quickest and most cost-effective method of power improvement for this vehicle with no increase in boost pressure. This system provides cooler air charge which reduces thermal load on the engine and eliminates detonation.

This intercooler core assembly and special air duct is a drop-in replacement for the small Ford unit. The core has a 22% larger face area and 48% more mass area or cubic size. In addition to being much more effective than the stock unit, it weighs about 3 lbs. more, which contributes to improved heat sink characteristics.

All of this is accomplished with a 9% reduction in charge pressure drop. During testing, at 10PSI boost, we measured compressor discharge temperature as high as 310° which makes a high performance intercooler very important at stock boost levels and essential at higher boost levels when the compressor is speeded up or a high capacity supercharger is installed. In these cases, compressor discharge temperatures can reach as high as 375° and the use of this high efficiency intercooler is even more beneficial.

Part Number 2-425



Right: Comparison of Spearco core assembly to stock core assembly.



**SPEARCO**

**PERFORMANCE PRODUCTS, INC.**



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

**SUPER COUPE CLUB OF AMERICA  
PERFORMANCE PARTS PRICE LIST**

**"We Drive & Race What We Sell"**

**ALL Prices PLUS Shipping - Prices Subject to Change - Visa, MasterCard, American Express, & Discover cards accepted - Some Parts "Off-Road" Only**

**ELECTRONICS**

MAGNECOR Competition 8.5mm Metal Core Sprial Wound Plug Wire Set	104.00
COMPETITION LIMITED High Performance Headlight kits w/ 2 80w, 2 100w Halogen bulbs, wiring harness w/fuse link, instructions 89-93 T-Birds	139.00
94-95 T-Birds, same as above but w/ 2 80/100w 9007 halogen bulbs	129.00
Double your headlight power! 50w Halogen back-up bulbs ea.	18.00

**ENGINE**

K&N Lifetime Panel Air Filter - drop-in replacement	42.00
K&N 9" cone filter -	38.00
SCCoA fresh-air induction system, incl K&N 9" cone filter, March Ram-Air box, 3" inlet tube w/pcv fitting, bolt-on 15HP	179.00
C&L/Vortech 73mm Max-Flow Mass Air Meter w/30, 36, 38 or 42lb sampling tube	189.00
Replacement sampling tubes	40.00
Pro-M 77mm MAF, custom calibrated module, incl. inlet tube - for 350HP+ engines	429.00
Pro-M 75mm Bullet MAF, custom calilbrated module, bolt-on chrome	209.00
black plastic	199.00
EATON-MAGNUSON PRODUCTS S-Model Hi-Flow Supercharger - complete w/custom inlet&outlet porting, matching inlet plenum, pulley of choice exchange	1750.00
SCCoA Modified SC Adapter Air Outlet - ¾" raise, brand new castings	450.00
OTC Spanner Nut wrench for SC's - needed to switch SC tops	59.00
Blower Pulleys stock 89-93, or 94-95 SC	50.00
SVO 5% or SCCoA 10% OD	60.00
SCCoA 3-piece Accessory Underdrive Pulley set	179.00
SCCoA 10" Lo-Profile 900cfm Hi-Flo Intercooler Fan	99.00
SCCoA/Spearco Hi-Flo Intercooler - w/custom aluminum inlet duct - Exchange only	750.00
SCCoA "Double-Intercooler" w/ported inlet & outlet flanges - Exchange only (2) with optional ice tray	600.00 750.00
BBK Throttle Bodies - modified w/SC throttle linkage	65mm 249.00
	70mm 259.00
	75mm 269.00
BBK custom SC Throttle Body - new production item	70mm only 249.00

Griffin Hi-Capacity all aluminum radiators, race quality, direct fit, 50% increase in capacity, incl. SCCoA pressure release cap, Manual or AOD trans	595.00
Robert Shaw Hi-Po Thermostats 180 or 195 degree w/Fel-pro gasket	10.00
SCCoA Pressure-release radiator caps, a must for all SC's	12.00
SCCoA Roller-rocker set, 1.73 ratio, race quality extruded aluminum, bolt-on, non-adj.	299.00
SCCoA Roller-rocker set, 1.73 ratio, Stud mounted (ARP) adjustable, w/CMRE custom guideplates, polylocks - race-quality extruded aluminum or chrome-moly	499.00
SCCoA Hi-Flo fuel pumps w/filter screen, direct fit	155lph 99.00
	190lph 119.00
	250lph 149.00
SCCoA adjustable fuel pressure regulator, great tuning tool for hi-hp engines, bolt-on	89.00
Vortech T-Rex In-line pump 60 gal/hr @70psi w/wiring & instructions - a must for NO2	299.00
Hi-Flo fuel injectors, set of 6	Bosch 30lb/hr 299.00
	Bosch 36lb/hr 359.00
	Lucas 38lb/hr 399.00
	Lucas 42lb/hr 449.00
SCCoA/ARP Head Studs, 190,000psi, 11mm w/12pt nuts, HD washers set	129.00
SCCoA/ARP Rod bolts, 190,000psi, 9mm set	89.00
SCCoA/ARP Rocker studs, 170,000psi - 3/8" - 7/16" for stud mounted rockers	89.00
SCCoA/ARP Main studs, 190,000psi, 12mm, w/12pt nuts, HD washers, set	129.00
SCCoA/CMRE main stud support girdle, CNC'd billet steel, incl ARP main studs	469.00
SCCoA crankcase windage tray, prevents oil captivation & foaming, aids oil drain back	49.00
EXTRUDE-HONE Power Flow incl UPS to & from E/H inlet plenum	140.00
	manifold adapter 140.00
	upper I/C tube 140.00
	lower I/C tube 190.00
	complete set 10% discount 549.00
SCCoA custom porting	inlet plenum 70mm or 75mm 75.00
	intake manifold, inlet port & runners 95.00
Fel-Pro gasket sets, upper engine head set, w/late design head gaskets, all years	150.00
	lower engine set, all years 75.00
	complete upper & lower engine sets 215.00

## EXHAUST

All SCCoA cat-back exhaust systems are street legal. SCCoA headers & downtubes are sold "off-road" only (Too expensive to have EPA & CARB certified although the converters ARE EPA & CARB certified). The short tubes headers will pass emissions, even in CA.

SCCoA short-tube headers - 1-3/4" primaries, 2.4" I.D. collectors incl Jet Hot	695.00
	incl FelPro header gaskets & new 8mm bolts
SCCoA long-tube headers - 1-3/4" primaries, 3" 3 into 1 collectors	16ga mild steel 995.00
SCCoA 2-1/2" down-tubes for short-tube headers incl O2 fitting	w/hi-flo converters 300.00
	w/o converters 150.00
2-1/4" down-tubes for factory manifolds	prices same as 2-1/2"

SCCoA 2 into 1 into 2 cat-back exhaust systems, , factory fit, dual 2-1/2" into 3' into

dual 2-1/2, incl Magnaflo resonator, 2 Dynamax or Magneflo Super Turbo's, uses factory hangers, etc Guaranteed to out-flow any other system on the market, except the "Big Dog" below!	749.00
Dual 2-1/2 into 3-1/2" into dual 2-1/2" "Big Dog" system w/o resonator for over 350HP applications incl 2 Dynamax Super Turbo's 92-up gas tanks only	749.00
Magneflo resonator dual-inlet, single outlet	119.00
Jet -Hot Metallic-Ceramic Thermal Coating, inside & out	180.00
short tube headers	80.00
Down-tubes w/o cats	150.00
Down-tubes w/cats	300.00
Long-tube headers, inside & out	

### TRANSMISSION/DRIVELINE

HD Aliminum driveshafts - all models - custom order only	AOD	499.00
	5-sp	449.00
Centerforce Dual-Friction Clutch Kit - a racing clutch-pressure plate for the street w/release bearing, 89-93 SC's only		449.00
Art Carr 10" HD Super Torque street converter, 2500rpm non-lock-up, AOD		529.00
High-tech valve body shift improver kit AOD or 4R70W		79.00
AOD or 4R70W HD rebuild kit		190.00
Billet steel 1-piece input shaft		280.00
Finned aluminum AOD pan w/magnetic drain plug, new metric bolts, filter		179.00
Trans-Go shift kit - fully adjustable, w/full-throttle 3-4 up-shifts, holds OD (AOD only) incl. Hi-Rev kit (6000rpm upshifts - a \$50 part if purchased separately) ,w/instructional video. Absolutely the best on the market - used by most major trans shops!		119.00
SVO AOD Wide-Ratio/Upgrade Kit - (factory installed on 94-95 SC 4R70W), incl. 2.84 1 <sup>st</sup> gear, HD planetary gear set w/higher torque capacity, sun shell assembly, reverse assembly w/HD 2" OD band, HD low inertia 6-plate direct-clutch assembly, reverse/forward clutch assembly, 6000rpm intermediate one-way clutch w/pressure plate, clutch steels & friction plates, & high rpm #2 thru #9 needle pinion bearing thrust washers. A high performance/durability upgrade for 89-93 factory AOD's.		645.00
Lakewood Hi-Po U-joints w/o grease fitting (not internally cross-drilled), super-strong, ea		42.00
Speedometer gears 21T for 3.73 AOD		12.00
23T for 3.55 5-sp		18.00
SCCoA solid rubber trans mounts NEW!		99.00
145mph speedometers - same as factory installed on 94-95 SC's		189.00

### CHASSIS/SUSPENSION

Air Bag for rear coil springs - helps cure wheel hop in 5-sp cars ea.	55.00
pair	95.00
SCCoA 1-1/8" rear sway bar w/new end links (all gold cadmium plated) & urethane bushings - bolt-on	199.00
Baer High Performance & Racing brake packages	call for prices
Eibach Pro-kit 1-1/2" lowering springs	279.00

Tokico Illumina Electronic Adjustable Shocks - factory replacement -30% firmer 2 frt		295.00
	2 rear	245.00
Performance Friction brake pad sets front only	89-91	49.00
	92-95	59.00
Raybestos brake pads, rear, all years		49.00
KVR Carbon-Fiber Semi-Metallic, Rotor friendly, race quality, frt or rear, all years		69.00
Hi-Po cross-drilled rotors, factory replacement, front or rear, all years ea.		99.00
black, gold, or silver cadmium plated - no rust! Ea.		20.00
Cobra/SVT T-Bird wheels 17" X7.5"	ea.. silver painted	179.00
	ea. chromed	249.00
Cobra/SVT T-Bird wheels 17"X 9" NEW!	ea. silver painted	199.00
	ea. chromed	299.00
Incl with any 4 wheel purchase - SCCoA members only - free shipping (\$40-\$60 value), or a complete McGard locking lug, regular lug, & chrome valve stem package (\$50 value)!		
"Fat-shaft" the "Big-Dog" 5-sp right side half-shaft, ea. while they last, new, OEM		299.00
NEW ! Kenny Brown/SCCoA T-Bird strut-tower brace , avail. Jan. 99		129.00
Kenny Brown/SCCoA lower chassis (engine cradle) brace		99.00

### HIGH PERFORMANCE LUBRICANTS/FLUIDS

Entech Corp Energy Release for engines, transmissions, superchargers, power steering, many other uses 16oz bottle - enough for 2 oil changes, 1 oz for blower	24.00
Red Line Synthetic Racing AFT qt.	8.00
Red Line water-wetter 16 oz bottle ea	8.00
Eaton/Ford supercharger fluid 8oz	20.00
Haynes T-Bird/Cougar shop manual 89-96, all models incl/SC	15.00

### SCCoA SPECIALTY ITEMS

License plate bracket, black anodized aluminum, T-Bird wing & SCCoA engraved	40.00
Pen & pencil holder, 24k gold plated, solid-cherry base, T-Bird & SCCoA engraved	50.00
Tire guage w/pocket clip, w/ printed "T-bird wing" insignia & "Thunderbird" ea.	5.00
Key chain w/enclosed 6 ft ruler (standard & metric), T-Bird logo	5.00
SCCoA coffee mugs, "SCCoA & Thunderbird" printed on two sides, T-Bird wing printed around base ea.	6.00

### SCCOA PARTS PACKAGE DEALS (SCCoA members only)

SCCoA headers, downtubes, cat-back exhaust, & modified SC top combo - minimum 75 HP  
- \$100 off

Magnuson S-Model blower & SCCoA modified SC top combo minimum 50 HP - \$100 off

BBK Throttle body, C&L or Pro-M MAF, SCCoA fresh-air induction system - \$50 off

Eibach springs, Tokico shocks, SCCoA rear sway bar combo, -\$50 off

For the complete SCCoA 350HP bolt-on package, call for special pricing - For CMRE cams, head & engine work call Coy Miller @ 540-433-0545