

AT ♦ THE ♦ SIGN ♦ OF

The Cat

The official publication of the Cougar Club of America

Put GM Juice in Your Cat

—Page 8

New Edge Pro Stock Rocket

—Page 13

Sizing Up an '83-'88 Cougar

—Page 14

Also In This Issue:

- 4 President's Report
- 4 Regional Reports
- 7 Historian's Report
- 11 Technical Q & A
- 16 Cats in Color
- 27 Classifieds
- 28 Show Calendar

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The official publication of
The Cougar Club of America

Editor

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Editor's Desk

Ah, show season. It's upon us, and there are plenty of events available for you and your Cat—just check the calendar on **page 28**. And this is only a fraction of the many listings I've found on the Web and in various automotive publications.

You'll remember that, in the last issue of *ATSOTC*, I encouraged members to look beyond Cougar-only local, regional and national events and consider entering their cars in the many Mustang and all-Ford shows held nationwide every year. I renew that call with this column, and want to point you to several resources that can help you find a nearby show, where you and fellow Cougar enthusiasts in your area can make a statement about Mercury's finest car.

Of course, as I said, the show listing in this publication is a great place to start. A good number of the entries in this issue's calendar came from the Mustang Club of America's Web site and an excellent show listing offered by *Hemmings Motor News*, on its Web site.

The MCA is at www.mustang.org; check the "MCA Events" and "Non MCA Events" links from the left-side menu. Hemmings is at www.hemmings.com. Choose the "Car Shows & Events" link on the left and use the fill-in form at the top of the subsequent page to search by date, show type and location. This is a nicely presented listing that includes all the contact and other basic information you'll need to hook up with an appropriate show for your Cat.

Don't Miss Williamsburg

The big show for Cougar owners this year, of course, is the **2001 CCOA National Show** June 15 to 17, in Williamsburg, Va. I've been heavily involved in the planning for this event, as vice president of the host club, the Delmarva Cougar Club (Delaware, Maryland, Virginia, D.C.). I can tell you that I and the show's other organizers are doing our level best to make this one of the best CCOA national events ever, and I strongly encourage all members to go the extra mile—literally—to attend this show. You won't be disappointed.

A flier and registration form for the 2001 Nationals are on **pages 29 and 30**. Register soon and make your hotel reservations even sooner—the 80 special-rate rooms set aside for show participants are filling up fast.

Many top quality specialty Cats—Eliminators, XR7-Gs, a GT-E—are expected for this show, as well as a whole lot of solid standards and XR-7s. If you crave nice Cougars, Williamsburg is the place to be in June. I hope to see you there.



Carl Graziano

President's Report



Scott Ferguson

I hope 2001 is going smoothly for everyone, so far. Many of you are putting the finishing touches on your Cats for various events, including the CCOA National Show in Williamsburg, Va., June 15 to 17. The Delmarva Cougar Club, which is hosting the show, is very organized, so I anticipate a successful event for all involved. A registration form and other information about the show are available on the DCC Web site at www.dconline.org. Also, on Aug. 12, the Fordnutz Cougar Club will host a CCOA-approved regional show in Surrey (White Rock) BC, Canada. Information is at clubs.hemmings.com/fordnutz/page9.html.

Your CCOA Board of Directors is working on a variety of projects, including a restructuring, of sorts, of how the club is organized and operated to serve its 1967-to-present Cougar owner members as a true national marque club. We will be revising the club bylaws after analyzing member needs. Then we will ask you, CCOA members, to approve these changes, which we'll detail in an upcoming issue of *ATSOTC*.

I would like to welcome Rich Ladd as the new Region 4 Director. As you may recall, Royce Peterson stepped down from this position due to an increased work schedule. And Richard Brown

has been appointed as the registrar for the Cobra Jet Registry. Outgoing CCOA Treasurer Jim Pinkerton had been looking after this registry until a suitable replacement could be found, and it looks like Richard is an enthusiastic volunteer.

As you read in the last issue of *ATSOTC*, the CCOA seeks volunteers to help with the operation of the club. Volunteering can be very rewarding for you and most helpful to the club and its members. We need volunteers more now than at any other time I can remember. This is due, in part, to the club's growth and also as a result of the new direction we are taking to try to serve the membership better. Both of the At Large Director positions are up for election this year, but no one has officially thrown their hat into the ring. Without volunteers stepping forward, we will not be able to hold an election to fill these positions. So, if you have an interest in serving your club, please contact me at president@cougarclub.org or at (604) 786-3673.

A vote was conducted recently regarding the continued purchase of club insurance for shows and other events. This measure passed unanimously. Thanks to all of you who took the time to cast your votes. Enjoy the remainder of the spring and summer.

Regional Reports

1 N The Northwest's Cougar lovers are having an interesting winter. Show preparations are underway in a lot of cities, additional events are being combined with more shows and we're making great changes in when and how we judge cars.

The Cascade Cougar Club also had a marvelous Christmas party. Chris Osborne located a really nice facility right on the edge of Puget Sound in Federal Way. About 50 people attended, with 11 from Oregon, the Olympic Peninsula or across the Cascades. The catered food was delicious and the door prizes were nice. Most important, Dan Gire received a Certificate of Appreciation and a Cascade Cougar Club watch for his efforts at judging, raising funds for the annual Prowl and serving as CCC Treasurer for many years. Dan and Michelle have just moved to Arizona and will be very sorely missed. But, now, we have two more reasons to drive to Los Angeles for the 2002 Cougar Nationals West.

Plans are underway for the annual Prowl, which will be held in Renton July 28 and 29. It will be at Cedar River Park, in conjunction with Renton's River Days, so there will be plenty of

additional activities, especially for kids. This year's show again will be People's Choice with classes for the whole Cougar spectrum and additional classes for Mercurys, Edsels, Lincolns and Fords.

We plan on having close to two dozen members at the Mustangs and Cougars At The Courthouse in Port Angeles April 21. This show used to be M&C On The Pier, but the pier on the edge of the Strait of Juan de Fuca was too small for the show's ever-increasing size. Plans have started for other shows in Richland on Memorial Day Weekend, the All-Ford Shows in Hillsboro, Ore., and Bellevue, Wash., a week later, and the annual Hot August Nights show in Lewiston, Idaho, in August. An extra treat is being planned by hosts Valerie and Howard Guenther in Lewiston: an all-Friday boat trip up the Snake River to Hell's Canyon.

Our big news, though, is the change in judging format. We changed the names of some of the classes. We added a fourth judging class. We've made a formal designation of two Senior classes for our People's Choice balloting at Prowl. And

See **REGIONS**, page 6

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REGIONS, from page 4
we're *going mobile* with our judging. First, we changed the name of our former Concours class to Trailered Concours, but there are no changes to the judging criteria. We changed the name of Street Stock to Street Concours. Here, the undercarriage is not judged, but the car is judged against how it should have looked as it left the factory.

The name Street Stock was moved to our new class. In the new Street Stock, authenticity is still judged, but the owner is allowed to make changes as long as the changed item was available for that particular model year (example: Eliminator stripes and spoilers on '69/'70 convertibles). Deductions will also not be made for aftermarket brands used on those parts designated by the owner's manuals as needing routine replacement (batteries, hoses, belts, etc.).

Our Street Driven class remains unchanged. These changes might not apply when we host national shows. The Senior Classes will be named Senior Stock and Senior Street. Cars in these classes are those that have received a certain high fraction (value still in debate) of the points available for Street Stock or Street Driven classes. These cars will compete against each other, but not against the non-Senior cars in People's Choice shows. Eleven car/owners have been "grandfathered" into the two Senior classes due to their excellent performances at past CCC judged shows.

"Mobile judging" will be tried as a means to, first, end the frustration of doing all the judging at Prowl with too few judges who, then, get to see so little else of the show; and, second, to get more of our beauties judged. We will attempt to do the judging at other shows around the region as they are held during the year. The awards still will be made at the annual Prowl. Judging at home may be allowed for those unable to get to other shows, but that's not the preferred location. Head Judge Eric Anders has led the way on this idea with considerable help from Marc Ogren, Jeff Bingaman and others. A list of qualified judges has been compiled, including some "apprentice judges" willing to learn more about the cars. Will it work? Probably, because we have several knowledgeable people willing to drive around the region and make it work. Expose your Cougars to the roads, too and have a great spring.

—Jim Compton

6 Hello again. Is winter over yet? It has been a long and cold one in this part of Ontario, not so much for amounts of snow, but steady cold temperatures. It started about the last week of November. Some years we don't get snow until at least Christmas week.

Here I was, about Jan. 15, out in the garage to give my car a start-up. I had no plans to back out into the driveway because of blowing and drifting snow. As I sat in the car, the man on the radio said more snow with a wind chill of -16F. And this I refer to as a summer car.

I would like to send out a "thank you" to Eric Overton for a job well done on the 2001 CCOA calendar. It is the best annual calendar our club has produced to date and the use of the regional club logos is a very classy touch. Good work, Eric.

Carl Graziano, in his Editor's Desk note, makes mention of Cougar owners attending all Ford shows in their region. I have found this to be the case around here. Several members of the Great Lakes Cougar club will convoy to Toronto to the Summit Ford fall finale all-Ford show and the organizers are pleased as punch to see us pull in (and even more to their surprise, three or four Cougars with New York plates), and they treat us like kings. Most all Ford shows I have attended usually have only one or two Cougars show up. So, yes, when Mustang people see a convoy of Cougars drive in, they are usually quite pleased.

My big adventure into Cougar parts

Last week I had an educational visit to an old car parts dealer in the Toronto area. You see, I was on the hunt for NOS Cougar parts, which this dealer was rumored to have in stock. So, with pen and paper in hand, I showed up, also to help out one of our American club members. Then, the questions: Did you see the '68 spinner hub caps? No, not yet. I had never seen the spinners on a car. How about front grille center pieces? No. Wheel lip moldings? Yes, pay dirt, lots of them (only one side—right). Then I had a chance to browse through a large collection of '67-'69 used fender extensions. Does he have any hockey sticks, duh! Oh yes, the '67-'68 front hood moldings.

I found out I am not all that up on my Ford part numbers. Now, I turn into the slick parts vendor: Yes, I will take your only '68 trunk molding. Sorry, I only have one, and it's sold. OK, so I will take the '68 XR-7 hubcaps you showed me. Then, when I heard the price, I think, "No, I really like my styled steel wheels." My only score for the day was a set of front seat white Cougar floor mats, which I have sold already. All the way home I rack my brain trying to think just what I need for my car.

the only thing I came up with was to have the A/C serviced. As for the Cougar parts, I guess I should do my homework and bring a list of what to look for and ask about before I go wandering in a parts warehouse. In the past few years I have

See **REGIONS**, page 24

20 Years and Counting

Wow, 20 years for the CCOA. Just recall over how many clubs have come and gone over the past 20 years. But we're still here, thanks, in large part, to all those members who have devoted time to help organize and run the club. Yes, there may be new names and faces. But even with the occasional turnover, the club continues to grow. And the changes, I believe, only serve to make the club bigger and better.

So, let's go back to 1980, when Thomas Jacobellis and Mark Strand started the Cougar Club of America and the only cost of membership was \$1 and a self-addressed, stamped envelope for the newsletter. It didn't take long for the CCOA to grow: by the start of 1981, the club had 280 members and an official name for the newsletter: *At The Sign Of The Cat*.

In 1981, several firsts occurred among the CCOA's leadership ranks. W. M. Kaminsky became the club's first editor; Jim Rakowsky became its first historian; Jacobellis took over as the first membership director; and Jeff Kent became the first national director. Dues were set at \$12 a year. Membership reached an amazing 809 by the end of 1981, and the CCOA was well on its way to becoming a legitimate national marquee club.

Jacobellis became the club's first official president in mid-1982. Also, Bill Veach, who was the club's printer, became coordinating editor. The CCOA also hosted one of its first major events in 1982, a "Cougar Club Meet & Swap" May 8 and 9 in Montpelier, Va. By the end of 1982, the club had its second National Director, Rod LaBahr, and third newsletter editor, Mike Berry. Also that year, the CCOA reorganized into regions and directors were appointed for each.

In 1983, the CCOA held its first officially named national show in Omaha, Neb., Aug. 13 and 14. Also in '83, annual dues increased to \$15. The next year, Dee Ann Baumann became the CCOA's fourth editor (she took over midyear) and Jim Rakowsky became the club's second membership director.

Dues increased again in 1985, to \$18, and in late '85, John Baumann, Dee Ann's husband and owner of John's Classic Cougars, in Holland, Mich., became the CCOA's second president.

The CCOA's leadership remained stable through most of the remainder of the '80s, with the next change in office not occurring until mid-1989, when Scott Dyke, of Crest Hill, Ill., became the club's third national director. A year later, in 1990, dues increased to \$20 a year and Dee Ann Baumann took over as the club's third membership director.

Again, stability was the order of the day. The club chugged along with few changes until 1995, when the CCOA instituted a constitution and bylaws in April. Later that year, Rakowsky stepped down as club historian.

Nineteen ninety-six was a busy year, with many changes. The club now had a Board of Directors; Randy Goodling, a Cougar parts vendor from Elizabethtown, Pa., became the club's third president; and Bill Quay, of New York, became the club's first vice president. Also, Ken Gucker, of Connecticut, served as the club's fifth newsletter editor.

Also in 1996, the CCOA eliminated the national director's position and increased domestic dues to \$25, where they remain to this day.

More changes were afoot in 1997. Bruce Lammers, of Minnesota, became the club's sixth editor; Jim Pinkerton, of Snohomish, Wash., took over as the fourth membership director and Dyke became the club's second historian. Also this year, John Benoit, a Cougar parts and restoration vendor in Edgewood, Wash., came aboard as the club's first treasurer.

Norfolk, Va., residents Ron and Sally Crouch began sharing membership director responsibilities in 1998 and Pinkerton moved into the treasurer's slot. In 1999, the CCOA appointed its seventh editor, Carl Graziano, of Hyattsville, Md.

As the century turned, CCOA members, for the first time, voted for officers.

Last year, Scott Ferguson, president of the Fordnutz Cougar Club and British Columbia, Canada, resident, became the fourth CCOA president and Frank Paty, of Woodbridge, Va., became the club's second vice president. Club members also voted on a host of bylaws changes, including officially recognizing, for the first time, all model year Cougars, rather than just '67 to '73 model years.

—Scott Dyke

Putting GM Juice in Your Cat



Eric Overton

Recall the last time you stopped your Cat at a traffic light with the windshield wipers going, the headlights on, the blower motor on full and a turn signal on. Did the instrument panel turn signal indicator flash? I didn't think so. And the reason was that all the other items consumed so much power that there just weren't enough electrons left to trip the little underdash relay that makes the indicator flash.

And that's why you might consider swapping out your Ford alternator for one from the General—the topic of this issue's column. Ford alternators are notoriously undersized for their applications, particularly when the engine is running close to idle speed. A shot of GM juice in your Cougar offers an easy, inexpensive way to give your Cat the power FoMoCo didn't provide.

Before I dug into the swap, I did a little experiment to see just how undersized my Ford alternator was; with a reasonably accurate voltmeter, you can try this, too. Connect the voltmeter to the battery, start your engine, let it idle and turn on a fair number of accessories. Then start taking voltage readings at even time intervals. If your alternator was anything like mine, you'll see a curve that looks like the "Stock Ford Alternator" curve in Figure 1. Note that it doesn't take too long to lose about 2 volts at the battery when you've got the headlights and two or three accessories on (I turned everything back off at the five minute mark to see how quickly the battery would recover).

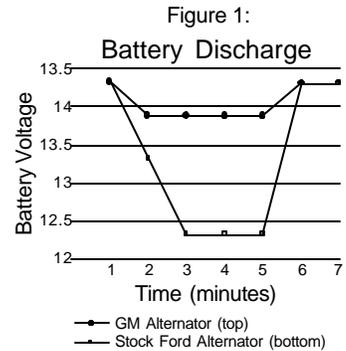


Figure 2

To do the alternator swap, I used a kit supplied by M.A.D. Enterprises (P.O. Box 675, Springville, CA, (559) 539-7128). I performed this swap on my '68 302 car, but the same kit and procedure should apply to any Cougar model year/engine combination from '67 to '73. In hotrodding circles, putting the Delco-Remy (GM) alternator on Ford products has become a popular enough trick to provide a market for a kit with all the goodies ready-to-go, and M.A.D. did the engineering work and filled the economic niche. Figure 2 shows what you get for your \$29. The materials supplied include wires, fusible links, crimp-on connectors, heat shrink tubing and a diode that might be required, depending on application.



Figure 3

But before we can do the swap, we've got to make a few mechanical and wiring changes under the hood. One involves a part that *doesn't* come in the M.A.D. kit. The good news is that you can make the part yourself.

I began by making as many wiring changes as I could *outside* the car. Much of the wiring of the alternator itself occurred on my workbench. The alternator was the 63A unit originally intended for use on a '75 Camaro. I got my "Duralast" replacement alternator at Auto Zone for about \$35. The AutoZone part number—it's pretty common across a bunch of auto parts stores—is 7127.

The first order of business, electrically speaking, was to connect a fusible link to the main output wire of the alternator. Fusible links are generally good ideas in circuits that can produce (or consume) large amounts of current. And an alternator is just such an animal. It's also a good idea to make the extra effort with good construction techniques when the number of amps going to or from a device goes into double digits. Here, in Figure 3, I've got a butt-splice connector crimped onto the fusible

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link, and I'm flowing solder down into the crimp. This will make a mechanically sound connection with a lot of metal-to-metal contact through which electrons can flow. In figure 4, I've put the whole splice together and am flowing a little solder into it, and in figure 5, I'm putting insulating heat shrinkable tubing over the finished joint. I used a professional heat-shrink gun, but you could just as easily heat the tubing with a match or cigarette lighter, provided you're careful enough not to set the tubing on fire. Once I'd put all of the butt-splices and lug terminals together and installed it on the alternator (while still on the bench), it looked like figure 6.



Figure 4

The first of the mechanical changes is to put in a larger spacer between the alternator and the engine block. The GM alternator has the same physical dimension between the pulley and the alternator case as the Ford unit. And the particulars of the pulley are the same. But the backspacing between the pulley case and the block is a lot greater on the GM piece than on the Ford. So one of the first orders of business was to machine a new spacer. Figure 7 shows the basic dimensions of the new spacer; if you want a picture that you can download and take to your machinist, you can get PDF and AutoCAD files from www.lonestar.texas.net/~eoverton/cougars/gm_alt (or by pestering me at eoverton@texas.net).

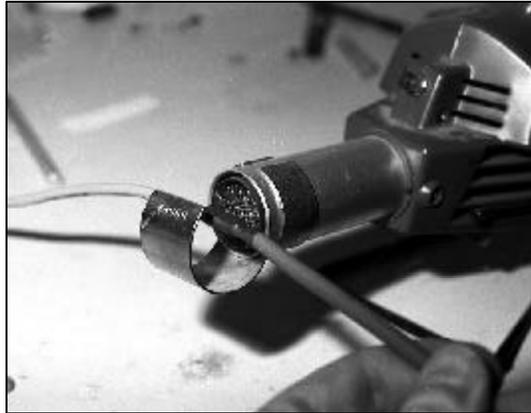


Figure 5

The next big mechanical difference between the GM alternator and a stock Ford unit is the size of the hole in the case for the mounting bolt that holds the unit to the block. The good news is that because the GM bolt is smaller, the hole can simply be drilled out. Before I dug in with a drill, I got out some tape and a few old plastic bags to cover any openings in the alternator case and keep the metal shavings out. I also poured a fair amount of "Marvel Mystery Oil" (my favorite cutting fluid) down the length of the drill bit in order to keep it from seizing on the relatively soft metal of the alternator case. (figure 8.)

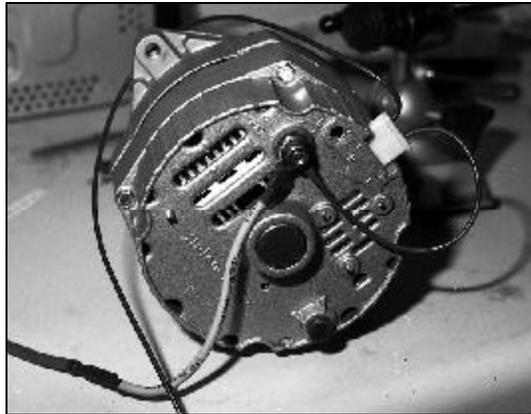
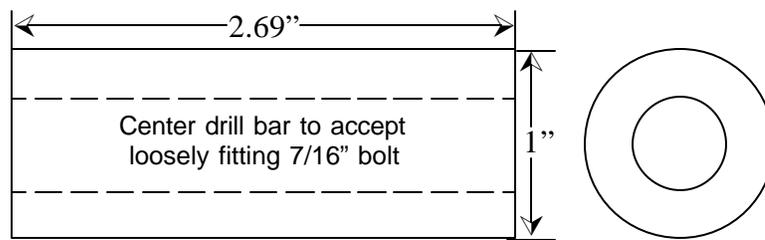


Figure 6

Of course, before doing any electrical work, disconnect the battery.

In theory, removing the old Ford alternator should be easy. But this one had been in there about 10 years, and on at least one occasion a heater hose blew and dribbled coolant down onto one of the mounting bolts, where it proceeded to get scaly and rusty. So the actual removal took a propane torch, half a can of WD-40, and a really big breaker bar. (figure 10.)



Side View

Top View

Material: Round bar stock of common aluminum; heat treatment not important.

Figure 7

See **SWAP**, page 10



Figure 8

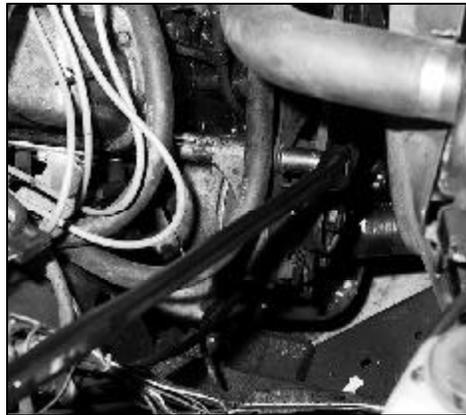


Figure 9

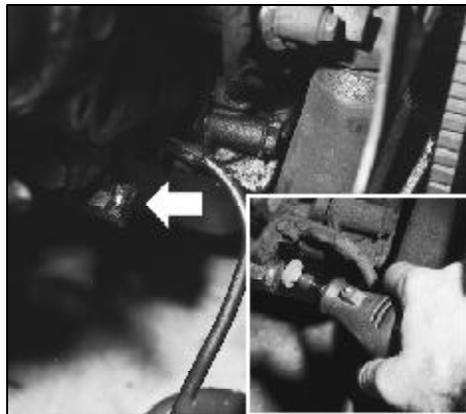


Figure 10



Figure 11

SWAP, from page 9

While I had the old Ford alternator out and the new GM unit was yet to go in, I took a moment to lube up a tap and run it down into the mounting bolt threads in the block. I really had no intention of having to work so hard the next time I have to remove an old alternator.

After getting the old Ford unit out and the block threads cleaned up, I was ready to make a test fit. In the case of the engine here, that fit revealed that the output terminal of the GM alternator was just a little too close to the block for comfort. The problem was a result of a little extra iron “flashing” (arrow, figure 10) left over from when the block was first cast. And the solution (inset, figure 10) was pretty obvious: Load up a Dremel tool with a grinding wheel and clean that extra bit of iron back off. (Actually, the Delco-Remy alternator comes in several flavors, with the output terminals in different positions. I chose the unit here since it’s the most common; had I chosen one with the terminals in different locations, I might have spared myself the trouble of doing this grinding.)

Figure 11 shows the whole enchilada once it’s installed and wired. Because the GM unit is an “internal regulator” design, the total amount of wire that comes and goes to it is a lot lower than with the stock Ford unit. In fact, there are really only two wires that come off the GM alternator. One is the heavier gauge wire (to which we earlier attached the fusible link) that carries the charge to the battery. And the other is a low-current, light gauge wire that goes back to either the dashboard warning light or ammeter. Depending on how your instrument cluster is constructed, you may or may not need a diode in series in the “indicator” line. M.A.D. provides an appropriate diode in their kit and enough instructions to let you know whether you need it—and how to put it in if you do.

Because the stock Ford regulator is now superfluous, we remove it completely. And while it’s on the bench, we size up a few of the spade terminals, as one of the mating connectors left behind by the regulator’s removal will actually be where we connect that warning light/ammeter wire coming off the new GM alternator. A carefully selected spade lug and a little heat shrinkable tubing (as shown in figure 12) makes the warning light/ammeter circuit connector complete.

Once it was all installed, I redid the “battery discharge” test I performed on the Ford unit, and I got the “GM” curve shown back in figure 1.

Now that we’ve covered all the practical issues related to this alternator swap, we’ll have a look at what

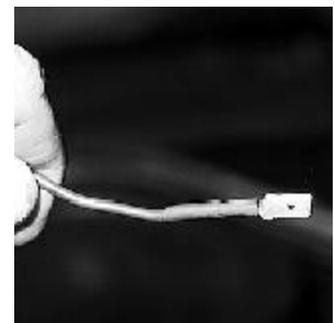


Figure 12

See **SWAP**, page 25

Tech Center: Q & A with Dick Hertzler

Q: I have all the original A/C parts for my '69 and am ready to re-install them. At an auto parts store, I was told that retrofitting to use R-134 instead of R-12 simply involved a conversion kit that included new type seals and the R-134. If that's the case, I don't really have to worry because I don't think these systems use O-rings for seals—the connections look like compression fittings. Am I correct that I can just assemble the system and have it evacuated and refilled at an A/C shop? (Almost too good to be true.) One last question: I have the original dryer unit. It has been stored, unsealed, for several years. I am not sure what is inside the dryer. Should I just get a new one from an auto parts place or will evacuating the system dry everything out, including the dryer?

A: I have a '69 with A/C myself. I checked with a certified Freon A/C mechanic here in Florida, where R-12 is still banned, except in limited circumstances. He said go with R-134 with no change. If you get the kit, it likely will have a new oil charge included that has a new oil additive that chemically activates the old oil to flow with the R-134. In essence, simply evacuate the system and recharge with R-134. It's best if you remove all the old oil from the compressor, but that's not really necessary. There was a lot of confusion surrounding the change from R-12 to R-134, but it only took the industry a short while to come up with compatible chemistry. You'll notice that the R-134 system is not as cold as R-12 and takes longer to cool a really hot car. After you evacuate the system (pull vacuum for about 45 minutes), allow the gauges to stay on for 15 minutes to ensure no air enters the system. Then admit the new R-134 in the conventional manner, and you are done!

Regarding the dryer: The old one will work fine if it still has cap seals. If you're not sure, get a new one. The R-134 is quite different from R-12 and will not absorb as much moisture. The dryer is not quite as important as it used to be. It was there mostly to prevent slight moisture from

freezing at the expansion valve on the firewall where the A/C lines go through to the evaporator. Proper evacuation of an air-tight system will not leave enough moisture for R-134 to freeze. But you do need to keep the dryer in the circuit.

Q: I am the proud owner of a 1967 XR-7 Cougar. I have a question about the wooden dash in my car. Is it actually wood? Mine seems to be made of steel with a very poor veneering job done on it. I live in Australia and the car has been converted to right-hand drive, which explains why the underneath panel is like a patchwork quilt. I would appreciate any help you can give me on this subject, as I am about to start a rebuild and I was under the (mistaken?) impression that the dash was actually made of wood.

A: Nice to hear from the land down under! None of the Cougar XR-7 dash boards are real wood, though that would have been very nice. They are, indeed, metal with a "die-noc" vinyl covering, much like contact paper. They can be stripped and recovered if you find the material in a length sufficient to have the grain lines match up all the way across the dash. Many vendors have nice pieces available. You can transfer your instruments, switches, and gauges to the piece. Again, get a full set from the same car—some of them have a gray tint to them, others have black lines. When your car was converted to right-hand drive, I presume at the factory as an export car, the panels were not interchangeable left to right. The left side of the U.S. cluster has a rounded edge and will not mate with the center piece. Likewise, the right side with the oil gauge on U.S. cars has the rounded edge on the right. It's best to recover your old panels. It should be a fairly straightforward procedure to strip and sand them and repaint the chrome edge (The Eastwood Co., (800) 345-1178, has a great paint for this!). Then, recover with woodgrain material. Let the editor know how it works out!

—Dick Hertzler, #32

Question?

CCOA Technical Adviser Dick Hertzler will accept questions for his Q&A column by e-mail (preferred) or standard postal mail. E-mail submissions will be answered by e-mail and, possibly, in *ATSOCTC*. "Snail mail" questions will be answered either in the newsletter or directly if members include a self-addressed, stamped envelope with their questions.

Send questions to dickiemag@aol.com or to Dick Hertzler, 69 Village Drive, Ormond Beach, FL 32174-2651.

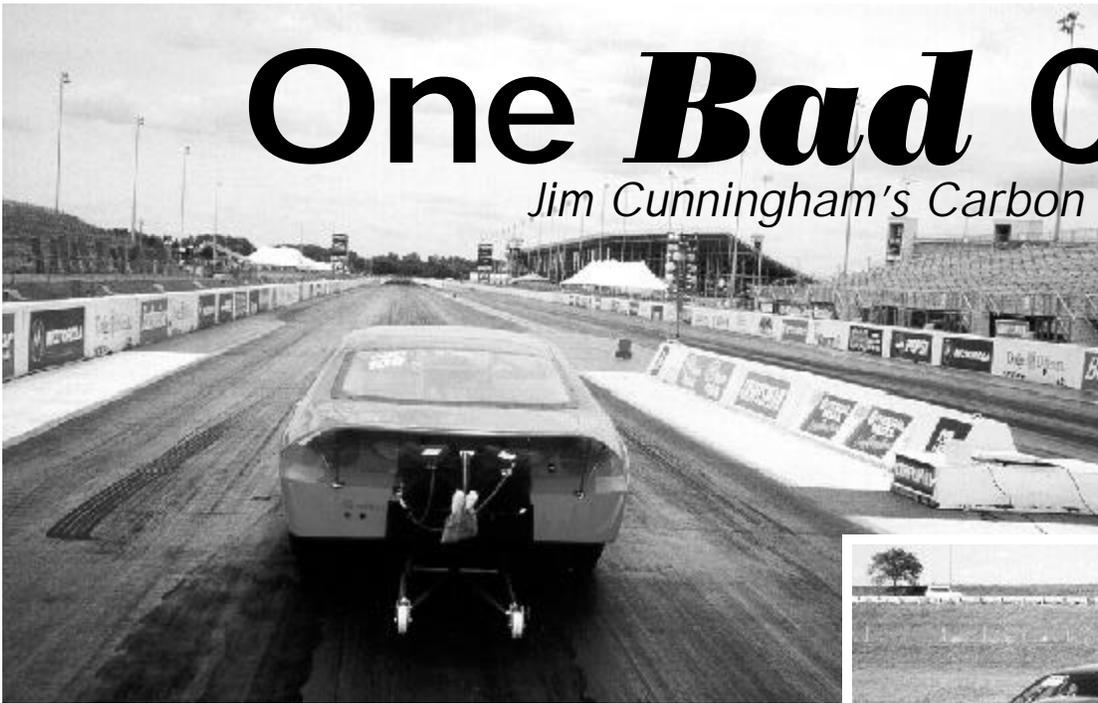
Hey, Cougar owner:
Are you a Cougar Club of America member?

If not, you're missing out on the best way to hook up with fellow enthusiasts for shows, parts sources and other information about your classic cat. For information, contact CCOA Membership Director Ron Crouch at (757) 587-5498 or at Cougr351C@aol.com.

(Copy, clip and leave under the wipers of Cougars you come across in your daily travels.)

One *Bad* Cat

Jim Cunningham's Carbon Fiber Rocket



Pro Stock driver and dragstrip owner Jim Cunningham has raced all his long life and spent a good part of that time behind the wheel of Ford products. And when crashes last year sent his '91 Pro Stock Probe out to pasture, it wasn't a stretch to consider a 2000 Cougar for his next ride.

"I wondered what kind of race car it would make," Cunningham recalls remarking about the New Edge Cat in a conversation with master car builder Jerry Haas, of St. Louis. "He said it would make a hell of a race car. I had no idea how it was going to look, but it came out real nice."

To say the least. And real fast, too. With a 500 cubic inch, 1,280 horsepower wedge motor pushing it down the track, this Cat's got serious claws: low sevens at close to 200 mph.

But what's really special about this car is the body. Cunningham, of Crownsville, Md., says his bad Cat has the National Hot Rod Association's first all carbon fiber body (Pro Stock bodies typically feature metal roofs or quarters). And Haas added his master's touch by making Cunningham's Cougar one of the first cars built using the NHRA's new "no tolerance" body templates.

Cunningham, who owns Capitol Raceway, in Crofton, Md., plans to spend this year on the NHRA circuit with his Cougar, fine-tuning his motor program and looking for the all-important sponsors that can help foot the cost of the three engines he expects to go through this year (at \$100,000 each).

He's had no luck, so far, garnering support from Ford. He remains optimistic, though. "I feel like if I start running some events, they'll come around," he says. "Everybody likes the car. We were out in Memphis and got an unbelievable response. There were some guys looking at it and they said, 'We'll tell you what, we're Chevy people, but that's the prettiest car we've ever seen.'"

Cunningham says he intends to campaign his Cat as long as he and the car can hold out. "I've been around race tracks all my life," he says. "As long as I keep my health, I'll keep racing. I enjoy it. It's a relief to get away from all the other stuff I've got going on."

And he says he doesn't intend to put in the years it can take to make a new car a national winner. "I don't plan on waiting that long," he says with a mischievous smile.

—Carl Graziano



Cunningham and Cat. The headlights, grille and other front end details are painted on the carbon fiber body—same for the rear end.



Thirteen-time Car Craft All-Star Jerry Haas, left, poses with Cunningham in front of the 2000 Cougar Pro Stocker Haas built.

See a full-color photo of Cunningham's Cougar in the "Cats in Color" section.

Sizing Up 1983-88 Cougars

By Eric Dess

If you find one day that you'd like to step up to a more modern Cougar but don't like the new front-drive layout, then you might consider the mid-1980s Cougars for your solution. The shape of the 1983-88 Cougars is certainly tantalizing, to say the least, and they're not just all style.

Whether for a daily driver or show car, these Cats are the perfect blend of performance and luxury, and they're about the perfect size: not too big, not too small. Over the past 15 years I've looked at plenty of these Cats—new, used, and wrecked—and I've discovered ways to shop for a good used 1983-1988 Cougar.

Electronics

Before you even look at a Fox-chassis Cougar, you must be aware of the electronic systems used in the cars. In 1983, the EEC-III (electronic engine control, third generation) was used. While it was adequate, it didn't really control many engine functions. Starting in 1984, Ford switched across the board to EEC-IV, a much better and more efficient system. It also controls most of the car's systems, which involves a lot more sensors. While the thought of modern electronics might scare you at first, remember that things were much simpler back then. They're not as difficult to work on as you might think. Still, there is literally no equipment to diagnose problems with an EEC-III system. You probably will be better off with a 1984-88 car because of this. Be aware that original 1984-85 computers were prone to failure around 50,000 miles. New replacement computers are less than \$200, or even less at salvage yards. So the electronics involved should not hinder you in any way from considering a Fox Cougar. Over time, they've proved reliable and a great contributor to decent fuel economy.



look at it, the Fox Cougars were light years beyond the quality of competing GM cars and still hold up well to this day.

Parts Availability

Of course, when any car has been out of production for at least 13 years, you wonder about parts availability. With the sheer number of cars produced (near or greater than 100,000 cars annually from 1983 to 1988), finding most parts is simple. Most of the motor, braking, steering, and axle parts are all still available in the aftermarket. The 3.8 V6, 5.0 V8, and 2.3L I-4 engines can all be bought remanufactured. Body panels have been discontinued from Ford for some time, but are still available through aftermarket supply warehouses.

About the only parts that are difficult to find are those found in the interior. A simple trip to the salvage yard usually takes care of that.

Ever Wrecked?

One of the first things you'll probably want to know when looking at a Cougar is whether it has been in an accident. Fortunately, there are a few places on Fox Cougars that are telltale signs of an accident. First and foremost, open the hood and look immediately to the sides. There is an air inlet hole on each side of the engine compartment, just before the strut tower. On some cars, such as the 1983-85 5.0 engine, that hole was occupied by an air inlet duct. Beginning in 1986, however, the air cleaner assembly had a new home (due to the new fuel injection system) and that hole was no longer used, so it was capped off. When any kind of front end or side damage occurs to these cars, this front end crumple zone will distort badly. If the metal there is not totally straight, the car has almost certainly been in a wreck.

Another sly trick is really simple: Take the cap off the base of the antenna. You'll need a Philips screwdriver to remove the antenna on non-power units; unscrew the cap and lift for power antennas. If you see a different color under there, then

Build Quality

There is a huge difference in quality between the 1984 and 1985 model years, and, similarly, between 1986 and 1987, when the body style was changed. Better insulation, thicker carpeting, greater use of structural adhesives, and added bracing went a long way to improve the cars. Most enthusiasts agree that the 1987-88 body style is the best constructed. But that's also a matter of personal opinion. No matter how you

Eric Dess, CCOA No. 6366, is an Ohio graphic artist and Web site designer. He created COOL CATS, a site dedicated to the 1983 to 1988 Cougar. The site is at www.coolcats.net.

that's a replacement fender. Now that's not a 100 percent guarantee of damage, as the panel could have been replaced due to rust. But if you have suspicions about a wreck, this could provide good reason to look for further evidence. When hastily replacing body panels, a lot of people will tape off and paint around the antenna rather than remove it; that's why this trick works so well. Overspray on windows and window trim can at least indicate new paint, if not a repair.

Check the rocker panels, under the doors. A side impact will dent or crinkle a rocker panel. While usually more cosmetic than structurally damaging, this could indicate a pretty hard hit. Look up under the bumpers at the metal core supports. If you see anything but a straight reinforcement, there has been at least a bumper bash in this Cat's past, if not more. On the interior, look under the seats really well for broken pieces of glass. Make sure you check under the back seat—a place often overlooked when cleaning up after an accident. Other signs: non-uniform gaps between body panels, a leaky trunk and excessive creaking.

Note: Physical indications of a wreck do not always tell the entire story. A simple low-speed front collision could have bent the crumple zone, simulating a more severe hit. And again, just because a front fender has been replaced does not mean it was damaged. With the major rust problems associated with these cars, that's probably as likely an explanation.

Sheet Metal

Unfortunately, these cars are known for lots and lots of rust. Generally, the steel used in most mid-1980s cars from all automakers was prone to rust, because galvanized steel rarely was used in vehicles back then. But there are some really prime examples of even older Cougars and Thunderbirds out there. Yet there are some key areas on the body that are a dead giveaway for Bondo and rust. So where do you look? Here's a list of common rust-prone areas:

- Under the doors
- Inside the door jambs
- Underneath the trunk lid
- Under the front and rear quarter panels
- Rocker panels
- Wheelwell lips
- Underside of the hood
- Behind the taillights and rear license plate

Paint

Starting around 1983, Ford Motor Co. began using the then-new basecoat/clearcoat paint system—now the industry standard. The 1983-88 Cougars were fortunate enough to have a state-of-the-art laser guided paint system installed at the

Lorain, Ohio, plant where they were built. As a result, the finish of the cars was truly remarkable. Cars with the base/clear paint generally hold up better over time than those with enamel finishes. There were only a few base/clear colors offered for each model year, though, and those included all metallics and some other solid colors. It is rare indeed to find a Cougar with matching, coherent paint that isn't oxidized. If you happen to find one like that, put it at the very top of your buying list; you'll save hundreds (maybe thousands) of dollars on a paint job. A few colors, like the charcoal grey metallics, had problems with lifting and exposing the primer underneath. While this was common with comparable GM cars of the time, it's been known to afflict a few Cats, too.

Interior

Ford interiors are among the best of the industry, and 1983-88 Cougars are prime examples of this. Due to the excellent quality materials used, most Cougar interiors still will be in nice shape, no matter the mileage or age. Obviously extreme wear and sun fading cannot be controlled so the telltale signs of this will become readily apparent. Most of the time the carpeting is the first to wear out or fade, followed by the driver's seat and the leather-wrapped steering wheel (if so equipped), and the infamous dashboard cracking. The good news is, with a little shopping at the local salvage yard, most of these items are cheap fixes. Remember, you're going to be spending quite a bit of time inside the car, so make sure it meets your standards or can be repaired inexpensively.

Air Conditioning

Chances are the air conditioning system on a used Cougar will not work. If it does, consider yourself lucky! Because the old R-12 Freon is no longer produced, you can use R-12 substitutes in your existing system with no problems. In the long run, you may want to convert your car over to the new R-134 system. Retrofit kits are available nationwide at good parts stores. Be aware that R-12 and R-134A oils do not mix. There are universal oils that work for both systems, and that would be your wisest choice.

Cooling System

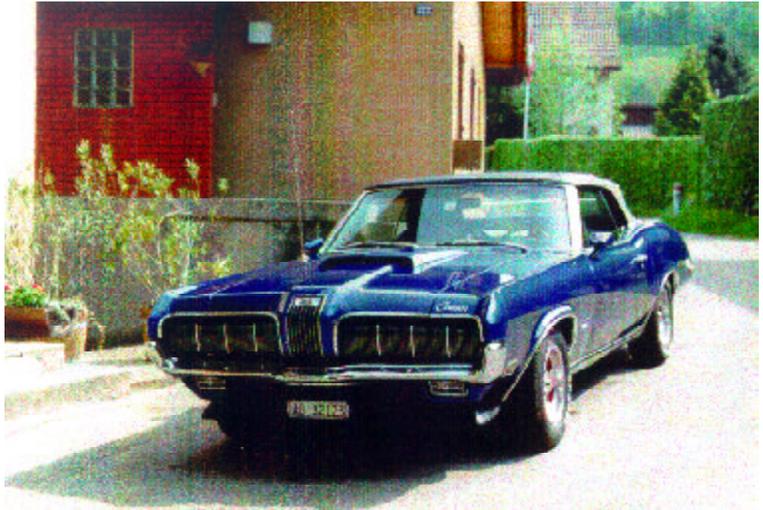
Most of the time the cooling systems in Fox Cougars operate well. Most notorious for going bad is the water pump on 3.8 and 5.0 cars; I've known them to fail under 50,000 miles. Fortunately, it's fairly easy to get to and replace. All radiators are two-row from the factory with fan clutches (only the '87-'88 Thunderbird Turbo Coupes had electric fans and an auxiliary oil cooler from the factory). If any hose ends or

See **EVALUATE**, page 18

Cats in Color



Carbon fiber bodied 2000 Cougar Pro Stock car. Owner: Jim Cunningham



**Walter Meier-Baumann
Niederrohrdorf, Switzerland**



Michael & Hubert Laguesse, Valatie, N.Y.



**Kendall Wilder
Waterloo, Illinois**

EVALUATE, from page 15

middles are swelled, cracked or soft to the touch, it's ready to burst and needs replacement soon. Coolant should be green and rust-free; brownish fluid indicates excessive rust inside the radiator, and possibly a few clogged rows. If the car is equipped with a temperature gauge, be sure to notice how long it takes to reach normal operating temperature. Normal length of driving time, depending upon weather and barometric conditions, is about five to 10 minutes. Any longer indicates a problem inside the cooling system—a bad thermostat, clogged radiator, bad fan clutch or, perhaps, a coolant leak. Thermostats generally are a pain to change in the 3.8 and 5.0 cars. A 180 degree unit can be installed with no harm (stock is 195). One should never use a 160 degree thermostat, as it will not allow the engine to achieve proper operating temperature. Finally, the heater cores in 1985-88 cars are a royal nightmare to change; the dashboard must be removed to get to it. Be sure to find out if the previous owner had the heater core replaced and if it was a genuine Ford unit.

Power Steering

The power steering system in Fox Cougars is infamous for its leaks. In fact, if you find a Fox car that *doesn't* leak power steering fluid, it's a miracle. Usually the leaks occur either at the junction on the steering rack or at the coupling at the power steering pump housing. As a result, this is considered "normal" for these cars. Most 1983-86 Cougars had the power-assisted low-effort 20:1 ratio steering rack installed. Only 1984-86 XR-7s, and all 1987-88 cars (LS and XR-7 alike) had the high-effort 15:1 rack. Any sloppiness in steering, or loud noises when the steering wheel is turned to the extreme ends, indicates a bad steering rack. Tie rods are not very expensive; lower ball joints are and require major work. Be aware that during this era Ford chose "sealed for life" tie rods and ball joints, meaning no grease fittings. While this was great from a marketing standpoint, in real life it eventually causes sudden failure of the parts if you're not careful.

Suspension

If you find a 1983-86 Cougar whose rear springs do not sag, they've either been replaced or the owner has been very lucky! But the 1987-88 cars had better rear springs and keep the car up to normal ride height. Front springs need to be compressed to be removed. That's a dangerous job and, unless you really know what you're doing, one that should be left to a professional. But unless they're broken, front springs are generally fine for 200,000 miles or more. The front A-arms need only occasional lubrication.

Lower control arms (rear) should both be straight; if they bend inward, the car was either hit or abused. The rear axle likes to twist up lower control arms like a pretzel. Torque boxes should be crack- and rust-free. Upper control arms, unless abused, should be fine. Bushings might be the only other suspension concern. Over time all bushings crack, and this means a sloppier feel and excessive body roll. This can lead to loss of control in emergency swerving or braking, but only in cases of extreme wear.

Shocks/Struts

Again, normal-wearing items. Rear shocks are inexpensive. Struts are a little pricey at about \$50 each, but at least the front spring does not need to be compressed to remove them. Some cars (1984-88 XR-7s, for example) have a set of horizontal stabilizer shocks (a.k.a. "Quad" shocks) mounted from the rear axle to the rear subframe rail. These shocks help control the behavior of the live rear axle and are not under the pressure normally associated with shocks, so they last a long time.

Exhaust

No 1983-88 Cougars had factory stainless steel exhaust systems, so prepare for occasional part replacement. Some cars have only one catalytic converter; others have two or three, depending on engine and model year. Like all catalytic converters, these are not cheap to replace. Only 1988 5.0 cars had factory dual exhaust. The entire system on all Cats is pretty straightforward and is of traditional rear-drive layout (Y-pipe, intermediates, mufflers, over-the-axle tailpipes). It is possible to retrofit either a Mustang or a custom exhaust system on these cars, with modifications. Long the forgotten part of the exhaust system, the oxygen sensors can be found in the stock exhaust manifolds. Some cars have only one sensor, while most have one on each side, and they're expensive to replace.

Brakes

Believe it or not, the braking systems used in 1983-88 Cougars are pretty reliable. All front rotors are 10 inches; most cars had 9-inch rear drums, while cars with the optional towing package, and the 1988 XR-7, had 10-inch drums. Most people agree the 10-inch rotors, while adequate, could have been bigger, given the Cougar's weight. Replacement brake parts are affordable and easily found. Regarding 1985 Cougars, be aware Ford recalled the brake master cylinder; make sure it was replaced.

Transmission

Throughout this era, the C-3, C-5, AOD, and A4LD were the automatics; the T-5 was the sole

manual. Only the 1984-86 2.3L turbo XR-7s used the A4LD and the T-5; But it's becoming popular to swap out an AOD for a T-5 in a V8 car. Known for their lukewarm performance, the Ford transmissions used in these cars are notorious for simply giving out with no advance warning. That's why it's so important to check the transmission fluid in the prospective car, which should be pink and smell like oil. A burnt odor, milky or foaming consistency or brown to black color are sure signs of internal transmission failure. Most Ford owners do not think to have their transmission fluid and filter changed on a regular basis, so don't be surprised if you find some discolored fluid. Slightly brownish or burnt-smelling fluid is generally acceptable. Rebuilds, depending on location, can range from \$500 to more than \$1,000. The C-3, C-5 and AOD transmissions are generally of the same family—metric—and require special tools at rebuild time.

On test driving, be sure the shifts are not too sloppy. When the car is put into reverse, pay close attention to the time between shifting and engagement. It should be pretty quick; otherwise the flywheel may be cracked. Also, on AOD cars, with the car in overdrive, punch the gas pedal. The car should shift quickly into passing gear. If you give the car about three-quarters pedal in OD, you should notice the car gaining speed; if it doesn't seem to want to go, then the OD band is probably shot, indicating a rebuild in the near future. Remember: The overdrive band is a good indicator of internal condition, as it's usually the first thing to go. For those rare Cats with the T-5 five-speed, be sure the shifter works smoothly. Also, find out when and if the clutch and pressure plate was last serviced. The torque convertor should be replaced when the transmission is rebuilt; otherwise, when it goes, it'll take out the rest of the transmission with it.

Belts

Early Fox Cougars (1983-85 in general) had multiple-belt systems: one for the air conditioning pump and one or two more for the other pumps and the crank pulley. Be sure that the belts are not cracked or cut up. Sometimes owners will only replace the belt that's easiest to reach, thereby neglecting the others behind it. The A/C belt will not need replacement as often as the others, as it gets used less. Beginning with the 1985 5.0 cars, Ford began using the one-belt serpentine system. While more expensive, the serpentine belt is a more efficient and more easily replaced piece than the older multiple-belt systems.

Engine

Last and certainly not least, the engine should idle smoothly and should start on the first crank. Be

sure to determine the date of the last tune-up and if the fuel filter was replaced at that time. Sometimes the fuel filter is included in a tune-up, sometimes not—it's up to you to find out. The fuel filter is in-line, underneath the car, on the passenger side and generally not easy to access. It should be changed yearly for optimum performance. Any smoke from the tailpipe indicates a leakage problem inside the motor, whether air, fuel, coolant or carbon build-up. A ticking noise indicates a bad lifter or sticky valve. The 3.8 and 5.0 engines have a normal "dieseling" sound to them, so don't fear if you hear it—it's usually nothing to worry about. Pinging indicates the wrong timing, a bad timing chain or, possibly, a bad camshaft. An oil or "Check Engine" light, or abnormally low pressure, usually means the oil pump is on the way out, and believe me, it is *not* fun to replace. Now, it could also indicate bad oil leaks or internal engine problems. And it's common for 1985-88 5.0 cars to consume oil, usually about a quart between oil changes. This was due to faulty piston rings from the factory, and this also can contribute to cold-start pinging.

Acceleration should be fairly snappy with minimal pedal effort. A pedal that seems to require more force than usual when accelerating indicates a bad throttle position sensor, carbon build-up in the throttle body or, more commonly, a stretched accelerator cable. Hesitation in acceleration usually means an expensive fix (computer module, internal engine component failure, clogged fuel injectors, sticking valves, timing chain, bad sensor). If any aspect of your test drive doesn't feel right, your gut instinct is trying to tell you something.

Pricing

Most "Aero Cats" are beyond 100,000 miles by now, meaning a reasonable price, but also the potential for major expenses and repairs. But that doesn't mean you'll always get a bad car. Prices range from less than \$1,000 (bad body, poor to fair running condition, high miles) to more than \$3,000 (good body, good to very good running, average miles). If the asking price is more than \$5,000, it should have an excellent body, no rust, be in top running condition and have less than 60,000 miles. These are more than likely one-owner cars. Rarer cars, such as the 1987 20th Anniversary cars, convertibles and fully loaded XR-7s with leather interior and power moonroof, will command varying prices, so you'll need to use your discretion. Since pricing is a judgment call, this guide should not be considered concrete. But it should give you a good gauge when checking out prices on used Cougars. An invaluable resource: www.autotrader.com. It's a great way to check current market pricing.

Local and Regional Clubs

Do you have updated contact information for your club? Please send it to *ATSOTC*, 4012 Hamilton St., Hyattsville, MD 20781-1842; mercat@cougars.com; or (301) 864-4460 (fax).

Alabama	Dixie Cougar Club , 430 Ryan St., Montgomery, AL 36107. Andrew Rolfsen, president. (334) 263-1964; Negativeimage@earthlink.net
Arizona	Arizona Cougar Club , P.O. Box 5335, Mesa, AZ 85211-5335. Scott Taylor, membership director. (602) 857-2005; scott.a.taylor@intel.com
Australia	Cougar Club of Australia . Clive Dennis. 029-623-2780; clive@eagles.com.au
California	Northern California Cougar Club , 91 Molokai Court, San Ramon, CA 94583. Dave Vandever, president. (408) 226-1595 Cougar Club of San Diego , 9414 Pearlwood Road, Santee, CA 92071-1407. Roger Gray, president (858) 566-1395. Web: http://clubs.hemmings.com/cougarsd/ Southern California Cougar Club , 5527 Bluebell Ave., North Hollywood, CA 91607. Mike Brown, president. (818) 762-6424; thebrowns1@earthlink.net; Web: home.earthlink.net/~epike Stray Cats , P.O. Box 41, Fairfield, CA 94533. Dennis Pierachini, president. (415) 621-7648; pierachi@wellsfargo.com. Web: www.classiccougar.com
Canada	Fordnutz Cougar Club , P.O. Box 24015 Airport R.P.O., Richmond, B.C. Canada V7B 1Y2. Scott Ferguson, president. (604) 421-4518; fordnutz@direct.ca. Web: www.bigfoot.com/~fordnutz Great Lakes Cougar Club , 5622 Lowell Ave., Niagara Falls, Ontario Canada L2G 4E2. James Megannety, president. (905) 358-5967; jmegs@sympatico.ca. Web: clubs.hemmings.com/greatlakescougar
Colorado	Colorado Cougar Club , P.O. Box 27435, Lakewood, CO 80227. Gary Wilmon, president. (303) 343-3978; coloradocougarclub@juno.com
Connecticut	Connecticut Cougar Club , 54 Trafford St., Unit 10, Meriden, CT 06450. Marc Nettleton, president. (203) 238-7787; MN73cougar@aol.com. Web: pages.cthome.net/cougar
Delaware	Delmarva Cougar Club , P.O. Box 5266, Fort Lee, VA 23801. Jim Karamanis, president. (703) 491-8710; jimk@cougars.com. Web: www.dconline.org
D.C.	Delmarva Cougar Club , P.O. Box 5266, Fort Lee, VA 23801. Jim Karamanis, president. (703) 491-8710; jimk@cougars.com. Web: www.dconline.org
Florida	Sunshine State Cougar Club , 1024 Dawson Drive, Deltona, FL 32725. Steve Weir, president. (407) 574-1656; fla-firecat@webtv.net. Web: www.motorhood.com/classiccardrive/sscc
Georgia	Georgia Cougar Club , 388 Dacula Road, Dacula, GA 30211. Richard Seaman, president. (770) 339-7497. Web: www.georgiacougarclub.com
Idaho	Cascade Cougar Club , P.O. Box 94243, Seattle, WA 98124. Jeff Bingaman, chairman. (253) 839-7615; JCBingCougar@msn.com. Web: clubs.hemmings.com/cascadecougar
Illinois	Illinois Cougar Club , 1700 Kelly Ave., Crest Hill, IL 60435-2314. Scott Dyke, (815) 726-7905 (after 6 p.m.); jsouich@mailcity.com
Kansas	Heartland Cougar Club , 3337 S. Vine St., Wichita, KS 67217-2639. Kevin Smokorowski, president. drgracjnky@aol.com
Maryland	Delmarva Cougar Club , P.O. Box 5266, Fort Lee, VA 23801. Jim Karamanis, president. (703) 491-8710; jimk@cougars.com. Web: www.dconline.org
Michigan	Great Lakes Cougar Club , 5622 Lowell Ave., Niagara Falls, Ontario Canada L2G 4E2. James Megannety, president. (905) 358-5967; jmegs@sympatico.ca. Web: clubs.hemmings.com/greatlakescougar
Mississippi	Dixie Cougar Club , 430 Ryan St., Montgomery, AL 36107. Andrew Rolfsen, president. (334) 263-1964; Negativeimage@earthlink.net
Montana	Cascade Cougar Club , P.O. Box 94243, Seattle, WA 98124. Jeff Bingaman, chairman. (253) 839-7615; JCBingCougar@msn.com. Web: clubs.hemmings.com/cascadecougar
New Jersey	Cougar Club of New Jersey , P.O. Box 121, Springfield, NJ 07081. Don Wussler, president. Donwussler@aol.com; members.aol.com/pwdcougar
New Mexico	Cougar Club of New Mexico , 5413 Territorial Road, NW, Albuquerque, NM 87120. Rich Gilkerson, president. (505) 897-2080; rgilkerson@uswest.net
New York	Great Lakes Cougar Club , 5622 Lowell Ave., Niagara Falls, Ontario Canada L2G 4E2. James Megannety, president. (905) 358-5967; jmegs@sympatico.ca. Web: clubs.hemmings.com/greatlakescougar Long Island Cougar Association . Steve Cameron, licougars@msn.com. Web: members.tripod.com/licougars/home.htm
Nevada	Sierra Nevada Cougar Club , 40 Carneros Drive, Sparks, NV 89436. Gary Guzelis, (775) 425-1113; merc-cougar@home.com
North Carolina	Carolina Cougar Club , 5970 Fairview Road, Suite 106, Charlotte, NC 28210. Marvin Wyant, (704) 643-6430; (704) 643-6425 (fax); panther@webserve.net. Web: members.aol.com/cougarcats
Ohio	Great Lakes Cougar Club , 5622 Lowell Ave., Niagara Falls, Ontario L2G 4E2. James Megannety, president. (905) 358-5967; jmegs@sympatico.ca. Web: clubs.hemmings.com/greatlakescougar

Oregon	Cascade Cougar Club , P.O. Box 94243, Seattle, WA 98124. Jeff Bingaman, chairman. (253) 839-7615; JCbingCougar@msn.com. Web: clubs.hemmings.com/cascadecougar
Pennsylvania	Great Lakes Cougar Club , 5622 Lowell Ave., Niagara Falls, Ontario Canada L2G 4E2. James Megannety, president. (905) 358-5967; jmegs@sympatico.ca. Web: clubs.hemmings.com/greatlakescougar
South Carolina	Carolina Cougar Club , 5970 Fairview Road, Suite 106, Charlotte, NC 28210. Marvin Wyant, (704) 643-6430; (704) 643-6425 (fax); panther@webserve.net. Web: members.aol.com/cougarcats
Tennessee	Dixie Cougar Club , 430 Ryan St., Montgomery, AL 36107. Andrew Rolfsen, president. (334) 263-1964; Negativeimage@earthlink.net
Texas	DFW Cats Club , 4205 Trailridge Drive, Frisco, TX 75035. Ken McDowell, president. txjyhawk@msn.com. Web: www.mercurycougars.com
Virginia	Delmarva Cougar Club , P.O. Box 5266, Fort Lee, VA 23801. Jim Karamanis, president. (703) 491-8710; jimk@cougars.com. Web: www.dconline.org
Washington	Cascade Cougar Club , P.O. Box 94243, Seattle, WA 98124. Jeff Bingaman, chairman. (253) 839-7615; JCbingCougar@msn.com. Web: clubs.hemmings.com/cascadecougar

REGIONS, from page 6

become some sort of a parts packrat, putting away used fender extensions and grille sections, as well as a large collection of Cougar nuts and bolts, window cranks and door handles—mostly used things that I sometimes score off wrecks I have found in the Niagara region.

In reference to the “Nice Rides” page in the last issue of this publication, I would like to ask Vernon Gehman of Ephrata, Pa., if his car is Diamond Blue; it sure looks like mine. I have seen very few Diamond Blue ’68s and, to date, I have only come across one other ’68 XR-7 in this color. My XR-7 came with black Comfort Weave vinyl interior. I always have wanted a car with leather seats. According to the Kevin Marti book, “Cougar By The Numbers,” my car is somewhat rare because it came with no leather interior (one of 39 built). My big question is: How many of those 39 have survived to this day? If any readers know of one, please let me know.

Now that we have reached the halfway point of this winter season, I start hunting for all the car shows where Cougars are welcome and nothing is out there to be found. Now I wait until April (too

late for this publication and past due for the next one). I guess there is always the regional club newsletter to report in. I invite any members to contact me with information that I can pass on to readers of *ATSOTC*, or the Great Lakes Cougar Club newsletter.

Now for a quick update on the CCOA wrist-watch project I have been working on for the past few months. In the last issue of *ATSOTC*, Carl included a new lower price announcement for the watches. Maybe the price was a little high originally, I had thought the lower price would attract more buyers. At this point I am still collecting names of people interested in purchasing a watch. As of mid-February, I have 58 names. I still hold out hope that I can get the required 200 names before I can give the go-ahead to produce the watches. I think this is a one-of-a-kind car club collectable for any member to have with the Mercury and new CCOA logo on the face. How many other car clubs have their own watches?

You can contact me if interested; keep the letters and e-mails coming.

—Jim Megannety

	<p>American Customers can take advantage of the lower Canadian dollar and save over 30% on their purchases</p>
	<p>Call Barry at (604) 574-2746 E-mail: BlueOval@bigfoot.com Web: http://www.bigfoot.com/~BlueOval/ Specializing in 1967-1970 Mercury Cougar Parts</p>

Treasurer's Report

CCOA Financial Statement, Fiscal Year-To-Date: 03/31/01

Revenues					
	06/30/00	09/30/00	12/31/00	'00-YTD	03/31/01
Dues	2,030.00	4,740.00	5,110.00	21,750.00	7,230.60
Ads	225.00	0	425.00	880.00	130.00
Clothing	37.50	0	12.50	50.00	58.09
Directories	0	0	5.00	5.00	0
Calendars	633.00	0	149.00	1,217.00	2,355.00
E. Nats.	2,585.00	1,490.33	230.52 (a)	5,050.85	0
Judging Bks.	21.00	36.00	44.00	146.00	40.00
Total Revenues	5,531.50	6,266.33	5,976.02	29,098.85	9,813.69
Expenses					
Postage	1,499.77	1,376.98	1,604.69	4,853.41	1,779.63
Copies	0	0	28.05	28.05	0
ATSOTC	3,571.05	3,595.20	3,595.00	13,560.84	3,649.80
Supplies	49.82	50.80	77.36	226.64	27.20
Calendars	0	0	1,852.86	3,052.86	0
Ads	6.62	0	0	6.62	0
Rebates	0	1,500.00	2,721.28 (b)	4,221.28	0
Contribs.	544.38	32.17	56.58	1,638.08	794.35 (c)
E. Nats.	265.18	4,707.15	0	4,972.33	0
Advances	5,660.46	(3,680.32)	128.50	2,016.33	0
Total Expenses	11,597.28	7,581.98	10,064.52	34,576.24	6,250.98
Net Income/(Loss)	6,065.78	(13,15.65)	(4,088.50)	(5,477.39)	3,562.71
Beg. Bank Balance	25,121.79	19,056.01	17,740.36	19,129.25	13,651.86
End. Bank Balance	19,056.01	17,740.36	13,651.86	13,651.86	17,214.57

Notes: (a) East Nats. Hotel refund. (b) \$1,500 Web site; \$1,215.54 CCOA decals; \$5.44 returned check fee; (c) Net Nation = \$34.95; eGroups = \$59.40; Delmarva Cougar Club (National Show) = \$500; FordNutz (regional show) = \$200. Reserves: ATSOTC = \$9,000; '01 shows = \$3,300; Total reserves = \$12,300. Working capital = \$17,214.57 — \$12,300 = \$4,914.57. Previous reserves for the Web site, e-mail membership and club insurance have been reversed due to membership rejection of certain bylaw changes.

Registries

National Database (all Cougars): Phil Parcels 7227 Heath Markham Road, Lima, NY 14485-9508, (716) 624-8011	<i>cougdb@juno.com</i>
1968 R-code, Non-GT-E: Bill Quay 7113 Old English Road, Lockport, NY 14094-5408, (716) 433-9267	<i>wquay@aol.com</i>
Cobra Jet (428/429/351): Richard Brown 7392 Stonedale Drive, Pleasanton, CA 94588-3735, (925) 426-1703; (510) 475-8309; (510) 476-1444 (fax)	<i>letssuss@aol.com</i>
Dan Gurney Special: Scott DeFriez 6420 Hermanas Road S.W., Deming, NM 88030-9519, (505) 544-4444	<i>demingdobes@zianet.com</i>
Eliminator: Frank & Sharon Bowers P.O. Box 775, Wister, OK 74966-0775, (918) 655-3352	<i>bowers@clnk.com</i>
GT, XR-7 GT, 6.5 Litre: Brett Irick 2 Brookwood Lane, Dearborn, MI 48120-1302, (313) 240-6418	<i>xr7gt@prodigy.net</i>
GT-E: Jim Pinkerton 20727 106th Ave. S.E., Snohomish, WA 98296-7166, (360) 668-0243	<i>pinktwo@gte.net</i>
Sports Special: Bruce Wallace 8709 Catbriar Lane, Orlando, FL 32829-8619, (407) 826-2936 (o), (407) 273-1092 (h)	<i>bwallace@ccci.org</i>
XR7-G: Royce Peterson 2701 Montair Ave., Long Beach, CA 90815-1212, (562) 377-0763	<i>royce_peterson@toyota.com</i>

SWAP, from page 10

might make one alternator more effective than another and why testing an alternator by disconnecting the positive battery cable with the engine running is a *very* bad idea—even though I’m sure your grandpa taught you to do it that way.

The GM alternator cranks out more juice than the stock Ford unit for two reasons. First, the regulator is internal, so there’s a fair amount of loss in the alternator-to-regulator wiring that doesn’t take place. Remember that in the Cougar the alternator is mounted on the passenger side of the engine, and the regulator is clear on the other side of the engine bay behind the driver’s side headlights. That’s a lot of copper through which the electrons have got to travel.

Second—and this is probably a lot more important—the GM unit is wound differently. In fact, the number of magnetic fields through which the rotating innards of the alternator pass is twice that of the Ford unit. Note that alternators can be wound all sorts of ways internally and the number of fields you interrupt (and how strong each one is) will determine for any given engine speed how much current the alternator is going to put out.

This point is worth keeping in mind, as lots of folks incorrectly size alternators for an application based on their maximum output. If I design an alternator with a lot of weak fields but spin it fast enough, I can probably get a lot of current out of it. On the other hand, if it isn’t spinning fast enough, I’m not going to interrupt enough of these fields in a given amount of time, and I’m not going to get a lot of current out of it. (Recall that current is a measure of charges per second moving in a circuit.) So I may have an alternator with a truly spectacular maximum output rating that performs dreadfully at idle. In much the same way as engines have “torque vs. speed” curves, alternators have characteristic “speed vs. current output” curves; and you’ve got to make sure that you’ve got an alternator that fits your anticipated engine operating speed range and that you’ve sized your pulleys to gear everything effectively. The GM alternator I’ve swapped in here has a “speed vs. current” that works very well with the stock Ford pulleys. And it performs particularly well in precisely that r.p.m. range where the Ford unit doesn’t — namely, idle and normal street driving RPMs.

That having been said, we can also say a few things about those magical coils inside an alternator that make all this mechanical-to-electrical energy conversion possible.

When we talked about capacitors last time, I mentioned the term “energy storage element,” and I noted that a capacitor stored energy by piling charges on a metal plate where they could be used some time later. I also pointed out that since

charges were put on and removed from the plates at different times, our description of a capacitor’s “impedance” according to Ohm’s Law was:

$$V = 1/(Cs) i$$

Inductors (like your ignition coil or the coils in your alternator that generate and take electrical energy from magnetic fields) are another type of energy storage element. Unlike capacitors, however, they don’t store their energy by piling charges up anywhere. Instead they create a magnetic field in which they can store energy. When the magnetic field changes due to some external influence, some of the energy used to cause the change comes back out in the inductor’s electrical terminals.

The thing that makes inductors particularly useful from an electrical sense is that in several key respects they behave exactly oppositely from capacitors. For example, it takes time to move energy back and forth between two media. (Remember that you’re converting electrical energy to magnetic energy and back again.) And there are speed limits on just how quickly you can do this. Inductors don’t like to be pushed around; and the more coils they have (with which they generate or take energy from magnetic fields), the less they like to be pushed. Thus the faster you push them, the more they’re going to resist you. And as a consequence, their resistance goes up with frequency. In the case of an inductor, Ohm’s law looks like:

$$V = Lsi$$

Note that the “frequency” term “s” (as discussed in our last installment of this series) is now in the *numerator* of our equation, whereas for a capacitor it was in the *denominator*.

This is why your ignition coil makes sparks (and why a capacitor is used to suppress these sparks at your points to keep them from burning). In the coil are inductors that exchange their energies through a magnetic field. When your points open, current flowing in one of the inductors changes instantaneously, since all of a sudden current flow goes from whatever it was when the points were open back down to zero, since the circuit has been interrupted. The definition of “instantaneously” here is “happens in almost zero time.” And we know from the last installment that time and frequency are inverses of each other. So something that happens in almost zero time happens exceedingly fast—or with high frequency. Thus, the very large “s” term in the above equation causes the relatively minor change in current flow “i” to get amplified to a huge voltage. And this huge voltage is what causes a spark to be thrown at the plug.

In practice, the two inductors in an ignition coil are coupled to each other by the magnetic

See **SWAP**, page 26

SWAP, from page 25
field of one inductor passing through the wound coils of wire that make up the other inductor. And since one of the two coils of wire has a great many more circular loops in it than the other, the effect of the change in current in the “primary” coil gets amplified quite a bit by the ratio of the number of “turns” of wire in one inductor versus the other. (Thus we get the term “turns ratio” when we talk about coils and transformers.) But it’s important to remember that any time you instantaneously try to do anything with the current flowing in an inductor, it’s going to complain about it. And the way in which an inductor complains is by generating a large voltage spike or spark.

This is why testing an alternator by disconnecting the positive battery cable while the engine is running is a really bad idea. What you’re doing when you do this is instantaneously asking the alternator to change the amount of current it’s supplying (since we’re assuming here that it’s charging the battery at least a little — and probably a lot if the battery is low from having been connected to a bad alternator.) And the inductors in the alternator see an instantaneous change in current (meaning a very big value for “s”) as a good reason to momentarily throw off a very high voltage as a way of registering their displeasure. Back in the days when there weren’t many sophisticated electronic devices on a car, what there was in the electrical system was pretty tolerant of getting hit with sudden shots of high voltage. So when grandpa tested the generator in his Model T using the “disconnect the battery wire” trick, he usually got away with it. But these days, things like “engine computers” tend to resent getting whacked with big voltage spikes. And even things like vintage Cougars have been retrofitted with sophisticated aftermarket electronic ignition systems that aren’t going to take kindly to getting hit with the few thousand volts that a sudden alternator disconnection can throw

off. So not all of Grandpa’s old tricks work in this day and age.

Summing Up

Aside from getting a look at how to swap a GM alternator onto a Ford engine, this issue we got a little bit of a look into the subject of inductors (and alternators are full of inductors). We learned that alternators have characteristic “current output versus speed” curves, and that simply going for the alternator with the maximum output may not get you the current output you want at idle. Bigger is not always better. Furthermore, we learned that inductors store energy by sloshing it back and forth between moving electrons and changing magnetic fields.

We also learned that inductors follow an impedance formula that in many ways is the reverse of the capacitor formula. And we learned that as a consequence, suddenly changing the current flow in an inductor (by disconnecting a battery cable while the engine is running, for example) is a very bad idea.

Next Time

Next time around we’re going to dig in on the subject of suspensions. But we’ll get there by taking our equations for capacitors and inductors and realizing that masses and springs also store energy (and believe it or not, we’ll build a model for a suspension system by looking at how a crystal radio works). We’ll learn that masses store energy in much the way (at least in mathematical terms) as capacitors. And inductors store energy just as a spring would. Finally, the mechanical equation for a shock absorber looks suspiciously like the one for a simple resistor.

Next time we’re going to draw the “circuit diagram” for a suspension and see what happens when you change your spring rates or shock absorbers. And when we start suspension tuning, what we do will be a whole lot less “hit-or-miss” as a result.

Classifieds

Cars for Sale

1969 XR-7, Dark Aqua metallic, black vinyl top, white leather/aqua interior, PS, PDB, A/C, tilt, console. 50,000 original miles, original paint, excellent original car. Drive anywhere. \$7,500/OBO. In Pennsylvania. Call (570) 386-1144.

1969 standard coupe, white/burnt orange, 29,000 original miles, second owner, \$6,900/OBO. Call Kurt at (231) 924-4055 or reply to kdlsales@ncats.net.

1970 Cougar XR-7, 83K miles, 351C, auto, Wimbledon White w/dark brown vinyl top and matching leather interior. 100% original, absolutely perfect, completely rust-free. Truly unbelievable condition. I have babied this car for 27 years. Looking for a good home and appreciative new owner. Asking \$8,500 or reasonable offer. Please call for details. Tim, (303)499-5977. Boulder, Colo.

1971 GT, 351C-4V, C-6 automatic transmission. Stored 20 years. Original mint interior. Total exterior repaint, red with black vinyl top. 23,053 actual miles. Looks and drives great! Call (219) 837-8121. In Indiana.

1973 XR-7: Unrestored original, movie car ("The Ice Storm"), 2nd owner, 49,500 original miles, 351-2V Cleveland, AT, dark green exterior, advocado interior, A/C, AM/FM stereo, 1/2 vinyl roof, rear defroster, 5 matched Michelin/Sears radials, spare tire/wheel lock, original carpeted floor mats. Has won 1st, 2nd & 3rd place at CCOA Nationals. \$6,500. Contact Richard Clark, 75 Thayer Road, Manchester, CT 06040. (860) 649-8520.

Parts for Sale

1967-73 Cougar parts. Sheetmetal, glass, trim, interior, wiring, mechanical. Parted 70 cars. Contact Randy Goodling, 2046 Mill Road, Elizabethtown, Pa. 17022-9401, (717) 367-6700. SASE, please. All-Ford Carlisle space A23-26.

Brand new GT-40 aluminum heads, \$1,100 a pair; NOS C8AZ-13AO16-A automatic headlamp dimmer, for Fairlane, Comet, Falcon, Mustang, Cougar, T-Bird, Ford, Merc, Mark III, Lincoln Continental, \$200; Ford 14x6 styled steel wheels (also called GT wheel) from 1968-1969, painted, no caps or rings, \$35 each; 428 exhaust manifolds, C8AE-9431-B & C8AE-9430-A, \$50/pair; 390 GT heads, cast number C8AE-H, dates 8E2 & 8E3, \$200; 390 GT cast iron intake, C6AE-9425-G, \$100; 427

valves, C5AZ-6505-N & C5AZ-6507-N, 16 NOS in the box + extra valves, \$200; 1968 302-4V smog heads, \$250; 351C-4V exhaust manifolds, \$75 each; 1968 302-2V parting out: intake, \$25, carb, \$25. (314) 351-1789 AFTER 8 p.m. Keith Litteken. kslitteken@aol.com (Mo.).

'67/'68 door panel molding strips with running cat, set, great shape, \$40 for both; '69 std. trans. boot cover (new in box, not Ford NOS), \$18; '70 4bbl carb. (Pep Boys, not Ford original), used, worked when on car (might need to be rebuilt), \$20; '72 heater box (with air), no cracks, great shape, \$65; '72 owner's manual (like new), \$20; '78 Cougar owner's manual (like new), \$20. Will consider any reasonable offer on any item or whole lot, shipping extra. Contact Kamran at the70man@juno.com.

Sell or trade: I have a complete great rust-free 1969 Cougar I am parting out and other 1966, '67-'68, '69 engine and other small parts. Virgin blocks 289, 302, 351W, 390 complete with C-6 transmission. Parts in Texas; can ship. (661) 663-8803; (661) 762-6691 (work); or alan.s.owen@power.alstom.com.

NOS '69 hood lip moldings; NOS '67-'70 deck moldings. Call Tucker Callan at (716) 538-9560

Parts Wanted

For XR7-G: one hood pin that has the ring and two small balls; driver's side racing style mirror, remote; headlight door "G" emblem holder (I have emblem); good XR-7 overhead console with good chrome and no curled corners for a saddle interior; rear seat lights, chrome perfect, that mount in headliner; chrome trim, both sides, that mount outside, below the quarter windows; console toggle switches for a G; please list any other good "G" parts, such as tilt or cruise control parts, horns, console, center caps, etc., that you may have; AC chrome dash outlet plates. Call (661) 663-8803; (661) 762-6691 (work); or reply to alan.s.owen@power.alstom.com.

Misc. for Sale

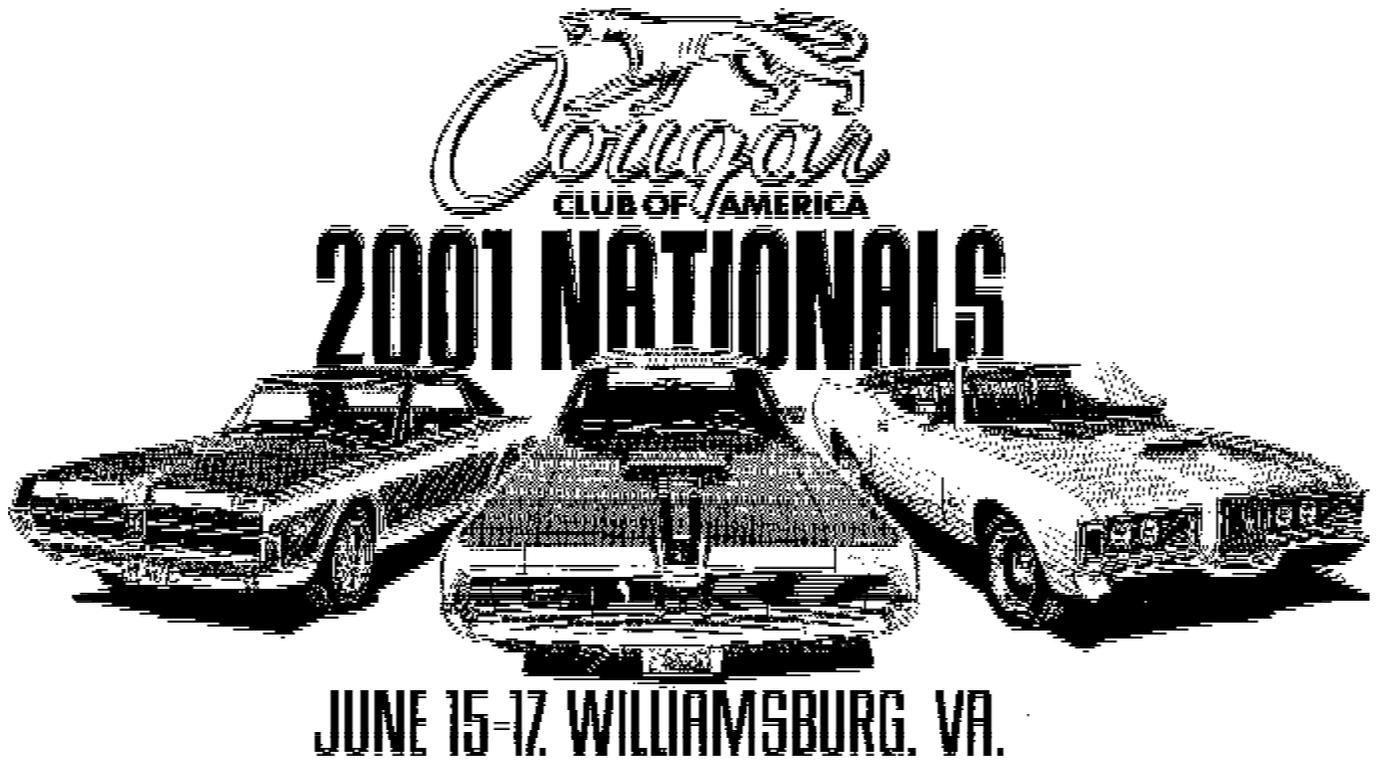
Keys, N.O.S. keys, gold-plated keys and key rings for all Cougars. Keys cut by code. Lock cylinders also available. Contact Joey Jesser, (330) 376-8181; (330) 384-9129 fax. www.jesserclassickeys.com.

Factory Service Manuals, '67, '68, \$49.95 each; '69 to '83, five-volume sets, \$59.95 each set. '80 and '81 owners manuals, \$12.95. '72 XR-7 owner's manual, \$29.95. Alex Voss, (206) 721-3077; VossMotors@aol.com.

2001 Calendar

Note: Events in **bold** sponsored by CCOA or local Cougar club

Date	Event	Contact
May 3-6	MCA National Show "Horsin Around in Cowtown," Kansas Clty, Mo.	(816) 741-5372
May 4-6	Great American All Ford Classics #12, Las Vegas, Nev.	(702) 658-8304
May 6	13th Annual Round-Up Mustangs and all Ford-Powered, Roanoke, Va.	(540) 563-4660
May 12	Mustang and All Ford Show, Clarksville, Ind.	(812) 283-6543
May 12	All-Ford, Mercury, Lincoln, Mustang and Truck Show and Vendor Swap Meet, Mt. Airy, Md.	(301) 694-7093
May 12	21st Annual All Ford Car Show, Huntsville, Ala.	(256) 851-7767
May 19	8th Annual Classic II Cobra, Mustang & Ford Powered Car Show & Swap, Wichita, Kan.	(316) 744-9695
May 20	Annual All-Ford Show and Swap Meet, Wisconsin Early Mustangers, Oak Creek, Wis.	(262) 567-2622
May 20	Annual Mustang & Ford Show, Central South Carolina Mustang Club, Sumter, S.C.	(803) 258-3839
May 20	Tenth annual Mercury-Edsel-Lincoln Antique Car Show, Manchester, Conn.	(860) 643-5135
May 20	19th Annual All Ford Show and Swap meet, Cudahy, Wis.	(262) 567-2622
May 28	19th annual Mustang and Ford Car Show, Albuquerque, N.M.	(505) 294-7902
June 1-3	All Ford Nationals, Carlisle, Pa.	(717) 243-7855
June 2	15th Annual All-Ford Show at Sunset Ford, St. Louis, Mo.	(314) 439-0843
June 3	22nd Annual Mustang & Ford Show, Des Moines, Iowa	(515) 288-1308
June 9	Mustang & All Ford Car Show & Swap Meet, Grand Rapids, Mich.	(616) 538-5579
June 9	All Ford and Mustang show, Jacksonville, N.C.	(910) 347-1264
June 9	7th Annual Mustang and Ford Powered Show, Staunton, Va.	(540) 943-0712
June 10	Spring Round-Up, Mustangs Unlimited, Manchester, Conn.	(508) 674-5462
June 10	25th Annual All-Fords Day, Williamsville, N.Y.	(716) 688-2606
June 15-17	Cougar Club of America 2001 National Show, Williamsburg, Va.	(757) 587-5498
June 16	All Ford Power Show and Shine, Harriman, Tenn.	(865) 220-0522
June 24	3rd Annual All Ford Powered Show, Pittsburgh, Pa.	(412) 299-7942
June 30-July 1	22nd Annual Mustang/All Ford Show & Swap Meet, Indianapolis, Ind.	(317) 856-5143
July 14	All-Makes Car and Truck Show, Mid-Maryland Ford Club, Fredrick, Md.	(301) 694-7093
July 14	19th Annual Mustang and Ford Show, Fort Wayne, Ind.	(219) 490-7700
July 15	17th Annual Mustang & Fords Summer Roundup, Foxboro, Mass.	(508) 674-5462
July 22	All Ford Car Show, Swap Meet and Car Corral, Randolph, Ohio	(330) 376-0915
July 27-29	Summer Carlisle, Carlisle, Pa.	(717) 243-7855
July 28-29	Fords at the Mall, Muncy, Pa.	(570) 584-5547
July 29	21st Annual Mustang and Ford Event, Cincinnati, Ohio	(513) 683-3018
Aug. 11-12	12th Annual Yellow Rose Classic All Ford Show, Fort Worth, Texas	(817) 595-6000
Aug. 12	Mustang and All Ford Car Show, Columbus, Neb.	(402) 564-3218
Aug. 12	4th Annual Fordnutz Cougar Claw In, Surrey, BC, Canada	(604) 444-3408
Aug. 12	23rd Annual Regional Mustang & All Ford Show, Decatur, Ill.	(217) 245-4848
Aug. 19	All Ford Reunion, Oakville, Ontario, Canada	(905) 358-5967
Aug. 25	5th Annual All-Ford, Mercury, Lincoln, Mustang & Truck Show, Hagerstown, Md.	(301) 694-7093
Aug. 25	Mustangs and Fords in the Park V, Rancho Cordova, Calif.	(916) 338-5908
Sept. 8	All Ford Round Up, Waco, Texas	(254) 848-5146
Sept. 9	Power Show, Mustangs Unlimited, Manchester, Conn.	(508) 674-5462
Sept. 12-15	Autofest Car Show and Flea Market, Charlotte Motor Speedway, Charlotte, N.C.	(704) 841-1990
Sept. 15	8th Annual Mustang Roundup and Ford Show, Bossier City, La.	(318) 747-3404
Sept. 16	12th Annual Fords at Trebour Show, Randolph, N.J.	(201) 666-8022
Oct 4-7	Fall Carlisle, Carlisle, Pa.	(717) 243-7855
Oct. 13	All-Ford Fun Day, Letchworth State Park (South of Rochester, N.Y.)	(716) 538-9560



JUNE 15-17. WILLIAMSBURG, VA.

(Official show logo and T-shirt design)

The Cougar Club of America & The Delmarva Cougar Club
present the

CCOA 2001 Nationals

June 15-17

Patrick Henry Inn, Williamsburg, Va.

Classes:

- | | |
|---------------------------|-----------------------|
| 1. '67-'68 Standard | 12. Senior |
| 2. '67-'68 XR-7 | 13. Concours |
| 3. '69-'70 Std. Hdtp. | 14. '74-'82 |
| 4. '69-'70 XR-7 Hdtp. | 15. '83-'97 |
| 5. '69-'70 Std. Conv. | 16. '99-'01 |
| 6. '69-'70 XR-7 Conv. | 17. Daily Driver |
| 7. '71-'73 Hdtp. | 18. '67-'73 Modified |
| 8. '71-'73 Conv. | 19. '74-current, Mod. |
| 9. '67-'68 and '71-'72 GT | 20. Unrestored |
| 10. XR7-G & GT-E | 21. Display only |
| 11. Eliminator | |

For more information, contact:

Ron Crouch, (757) 587-5498

cougarclub@aol.com

Jim Karamanis, (703) 491-8710

jimk@cougars.com

Carl Graziano, (301) 864-3479

mercat@cougars.com

Show information online at:

www.dconline.org/Nats/2001nats.html

Visit the CCOA online at:

www.cougarclub.org

Note: *Classes may be combined or canceled based on preregistrations. All cars to be judged must be on showfield by 10 a.m. Saturday*

Cougar Club of America

2001 Nationals



PLEASE RETURN REGISTRATION FORM WITH APPROPRIATE FEES

Name: _____ CCOA#: _____ Phone: _____

Address: _____ E-mail: _____

City: _____ State: _____ ZIP: _____

REGISTER _____ Show entries @ \$25 per entry \$ _____

Car #1	Year _____	VIN _____	Class _____
Car #2	Year _____	VIN _____	Class _____
Car #3	Year _____	VIN _____	Class _____

_____ **I/We** will volunteer to **judge** show cars (*note: In the event there are not enough judges, classes may be forced to revert to Peoples' Choice*).

_____ 2001 Nationals T-shirts, \$15 each (specify S / M / L / XL / XXL) \$ _____

_____ Number adults attending awards banquet @ \$27 per person \$ _____

_____ Number children attending awards banquet @ \$14.50 each \$ _____

TOTAL AMOUNT ENCLOSED\$ _____

PLEASE MAKE CHECKS (U.S. FUNDS) PAYABLE TO **Delmarva Cougar Club** AND SEND TO:

Delmarva Cougar Club
c/o Ron Crouch
1637 Skyline Drive
Norfolk VA 23518-4327

HOTEL RESERVATIONS SHOULD BE MADE DIRECTLY TO
Best Western/Patrick Henry Inn
P.O. Drawer S
Williamsburg VA 23187-3647
(800) 446-9228

A block of 80 rooms are being held for the Cougar Club of America. We urge everyone to make reservations well in advance of the show. The hotel is offering the CCOA a room rate of \$79 a night for single/double occupancy (\$5 for each additional guest in the room), plus applicable taxes. Check-in time is 3 p.m.; check-out time is noon.

Directions: Take exit 238 off I-64 and proceed through two traffic lights. Bear right at Route 5 onto Capitol Landing Road. Continue straight about two miles. Go through traffic light and immediately get into left lane and proceed to next traffic light. Turn left. Hotel is on the left.

Process of Elimination



JUNE 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

(Actual calendar design differs slightly from that shown.)

CCOA 2001 Cougar Calendar

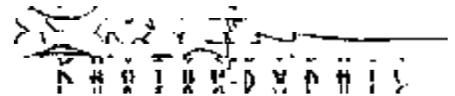
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