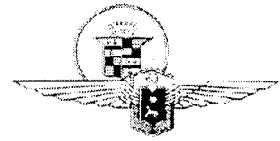


The Gold Standard

*The Hampton Roads Region
of The Cadillac - LaSalle Club Inc.*

*A Monthly Newsletter Dedicated To
The Preservation of Two of
America's Finest Automobiles*

Cadillac



La Salle

Volume V Issue 2 February 2000

**MEETING: February 1st - 7 P.M.
Dennis Spaghetti & Steak House
3356 Western Branch Blvd. Chesapeake
(Directions on last page)**

Message from the Regional Director

Even though we had a smallish turnout, we had a great meeting at Steve's & John's Steakhouse in Newport News in January. The meeting was so lively that the restaurant staff was running the vacuum cleaner around us. Hint, Hint. Seems like everyone had lots of ideas, all good ones I might add and so much that we had to defer part of the evening's agenda until next month.

As we begin our 5th year of operation I would again remind everyone that membership is the life blood of any organization and all members can participate in this venture by talking up the name of Cadillac with your friends and neighbors and by continuing to distribute our brochures to Cadillac owners as you encounter them in your travels.

Being the first of the year, I would remind everyone to send in their dues for the year 2000. Since we acquired several new members in 1999, I would remind them that their year 2000 payment should be prorated for the months of membership in 1999 at the rate of \$1.25 per month. For instance, if you joined in July 1999, your prorated dues for 2000 would be 6 x \$1.25 or \$7.50. If anyone has questions about this formula, just give me a call.

Lastly, for the past two meetings we have had rather lively discussions about the year 2000 trophies. This discussion is being carried forward to the February meeting with the expectation that a final decision will be made. Everyone is encouraged to attend to express their opinion and to bring ideas to the floor. To aid in this process, I will bring a representative selection of trophies to the next meeting and I encourage everyone to do the same so that we can finalize this topic.

Art Matthews

Hampton Roads Region Officers

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The FAX number for the club is 868-6555

Monthly Meetings

The Hampton Roads Region meets the first Tues. of the month and start at 7 PM at a local restaurant. The meeting locations are announced in the months newsletter

Minutes from December Meeting

1. The director announced the club has five new 2000 calendars left for sale at the nominal price of \$15.00. If you want one, call Art.
2. The membership was reminded the next National Board Meeting would be held at the Wyndham Bristol in Washington D.C. on 1/29/00 beginning at 8 AM. All members are welcome to attend.
3. All members were reminded once again of the importance of encouraging and soliciting club membership.
4. All members were asked to submit their ideas for this year's trophy design. There were many differing opinions. Those present elected to defer

the decision until next month when other ideas could be offered and a final vote would be taken. Everyone wishing to have input on this topic should make every effort to attend.

5. The group had a lengthy discussion about setting permanent meeting restaurants. It was suggested that we select a south side and a north side restaurant that we could use on alternating months. Next months meeting has been scheduled at Dennis' restaurant in Portsmouth. If the general membership likes this spot, it would be equal distant for both sides of the water and could become our permanent meeting place.
6. The treasurer collected dues for the current year from those present.
7. It was announced that Al Armfield's '65 Eldo Conv. is now for sale. If you have an interest in

this vehicle call Art & he can set an appointment w/ Mrs. Armfield to see the car.

8. The National Club is already recruiting volunteers for working the National Booth at Hershey. If you have an interest, contact Bill Edmunds.
9. There was a brief discussion about whether our region should run membership on a calendar year basis or conform with the national budget year starting on Feb. 28th. The group voted to continue our regular calendar year basis.

Kaddy Korner

- 1966 Sedan Deville Eugene Gregory (757) 255-0406
- 1984 Eldorado, Good Condition, Engine built by Jim Edwards, Brakes recently rebuilt, A/C very cold, Call Dave Anderson, (757) 238-8184
- '66 Model 75 Factory Limo., 51K, Mostly original 2-3 condition, asking \$14,900 Contact Steve Waggoner, 887-0415

- 1980 Sedan DeVille Green w/ green leather, 80K miles, 368 cid engine, \$3,000 obo, Call Jim Edwards 486-6289
- 78 Seville, 157K, many upgrades, garage kept, asking \$6,000, Contact R.J. Scoggins, 245-6700
- '69 Sedan DeVille, 42K, White w/black vinyl top and red leather. \$7,500 Contact Howard Andleton at 886-9090

OTHER CARS

- 1964 Studebaker Daytona, 4 Dr.- 87K, Excellent Show Car, 259 V8, 3 Speed OD, PS, Fact Air, \$7,000/offer Art Matthews, (757) 868-9717.
- '36 Ford Phaeton, Eugene Gregory (757) 255-0406
- '62 Chrysler New Yorker, 1 owner 80K all original except engine & transmission, Contact Kimsey Sherbert 545-7533

Calendar of Events - 2000

<u>Date</u>	<u>Event</u>	<u>Location</u>
Jan 29	National Board Meeting	Wyndham Bristol Hotel, Wash. DC
Jan 29	Bay Country AACA Parts Meet	Penton, MD
Feb 1	Club Meeting	Dennis' Restaurant
		Chesapeake
Feb 26	Flea Market, Northern Neck AACA	Kilmarnock
Feb 29	CCCHR	Old Country Buffet
Mar 4	Flea Market, Tidewater AACA	Chesapeake
Mar 7	Club Meeting	TBA

*CCCHR - Car Club Council of Hampton Roads

The following article is reprinted from the June 1999 Motor Service

Cadillac's Northstar System

As sophisticated as it gets:

It's all about that vision thing by Bob Freudenberger

In 1701, a French capitaine de marine named Le Sieur Antoine de la Mothe Cadillac established a stockade and trading post on a little-known river in New France. Named Ville d'Etroit (village of the straits), it became the city we now call Detroit.

So Cadillac is an appropriate name for the very first car manufacturer in Detroit (Olds began in Lansing), especially since the company has never been afraid to explore new territory.

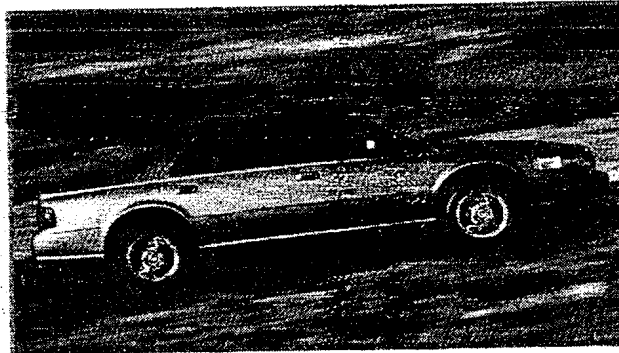
But some of those engineering explorations gave the company problems during the late '70s and early '80s, notably with the Olds diesel, the V8-6-4, the Cimarron, and the HT 4100, which tarnished its reputation. That must've been difficult to swallow for a company that's always prided itself on superior quality. So an ambitious program was started in the late '80s to pull the cars out of a technological slump.

During a meeting, an engineer said that the powertrain they were designing was "the beacon for Cadillac's future—like the North Star." Hence the name.

Northstar ties five major systems together with a Class 2 computer network capable of exchanging data at 10,400

bytes per second. These systems are the engine, the four-speed transaxle, CV-RSS (Continuously Variable Road-Sensing Suspension), Magnasteer variable-effort steering, and ABS/StabiliTrak.

Depending on the model, as many as 16 electronic modules may be networked, exchanging data and operating



as a whole. For instance, the VSS signal is shared by every system.

Motor and a half

The new engine, winner of 14 patents and weighing in at a svelte 403 lbs., first appeared in the '92 Allante, and followed in other models the next year. Befitting the product of a V8 pioneer, this 4.6L 32-valve, DOHC powerplant is so advanced it looks to us

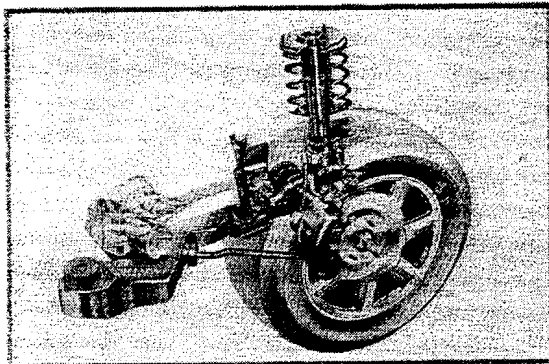
like a high-tech Indy racing motor. With up to 300 hp, it's potent enough to propel the Allante to 60 mph in less than seven seconds, compared to 9.1 with the original 4.1L. Even a substantial STS comes in at 7.5.

The die-cast aluminum block has two sections, split at the crankshaft center line and sealed with silicone gaskets that should last until the next Ice Age. Instead of giving us some kind of high-tech silicon bores that may not be serviceable, we get good, old-fashioned grey cast iron cylinder sleeves cast integrally with the upper crankcase. They can tolerate .020 in. of over-boring. The lower block amounts to a one-piece main bearing cap retained by 20 bolts, which makes for one rigid assembly.

An oil manifold and scraper assembly mounts between the lower block and the oil pan (lube capacity, by the way, is a large 7.5 qts.), and the gerotor oil pump is powered by the nose of the crankshaft.

The engine is over-square with a 3.66 X 3.31 in. bore and stroke.

Pistons with full-floating pins ride up and down on powdered metal rods, and the firing order is unusual: 1-2-7-3-



4-5-6-8. By the way, the left (or front) bank is numbered 2-4-6-8.

The lobes of the four cams bear directly on the 32 valve stems through hydraulic bucket lifters. The premium cam drive has three roller chains with ratcheting hydraulic tensioners. Those expensive head castings can be reused as-is if their sealing surfaces aren't out more than .002 in. or can be machined up to .008 in.

A precisely formed thermoplastic intake manifold keeps air distribution to the cylinders as uniform as possible. You can remove the manifold and throttle body assembly by unscrewing four bolts. Before you get into a frustrating diagnostic situation, be aware that neither the manifold nor the valve covers are good grounds.

Speaking of that big intake assembly, the starter resides under it in the valley, which tip may save you from a fruitless and frustrating search.

Cool heads first

We should expend a little space on the cooling system. As you know, it's traditional to route cooled coolant from the water pump through the block and up into the heads. The trouble is the top end needs most of the flow because those castings get a lot hotter than the block.

With the Northstar's reverse-flow system, logic prevails and the coolant goes to the heads first, then makes its way through the cylinder water jackets. It exits into the water pump's cast internal passage and back to the radiator.

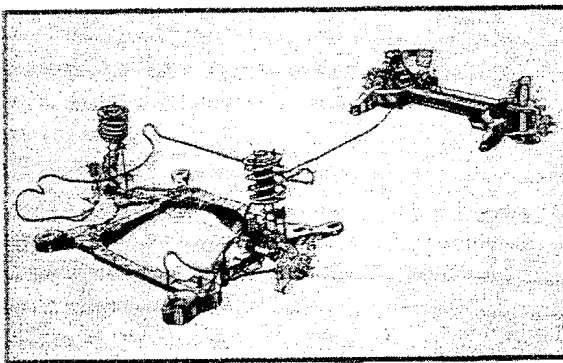
The thermostat is located on the inlet side of the pump, just the opposite of what you're used to. This arrangement reduces the thermal shock engines normally have to bear when that relatively cold fluid is shot right into the block.

Vapor can cause all kinds of prob-

lems, so there's an outlet from the throttle body coolant passage to the surge tank to provides a purge path for air during filling.

Was this re-engineering of the tried-and-true worth the effort? You bet. Hot spots are eliminated, so compression can be raised all the way to 10.3:1. The bores reach operating temperature more quickly, and are less prone to distortion. That means piston rings with lower tension can be used, which reduces friction and oil temperature.

Northstars have a unique feature where engine cooling is concerned. If the system should ever lose its dose of liquid, the PCM converts the engine to air cooling. Yup. It disables injection selectively so that plain air is pumped in and out of varying cylinders, which al-



lows you to drive up to 50 miles without catastrophic melt-down.

Self-criticism

The EFI and ignition systems are just what you'd expect of an up-to-date vehicle, including dual O2 sensors and a knock sensor. Access to the self-diagnostics is unusual, however. Using a '94 DeVille as our example, ease yourself into the driver's seat, switch on the ignition, and hold down the Off and Warmer buttons on the CCC (Climate Control Center) panel simultaneously for three seconds, which will engage the OBD mode and cause the segment check to appear on the IPC (Instrument Panel Control). Release both buttons and the DIC (Driver Information Center) will display trouble codes. PCM codes come first, then those for other systems.

Since there are more than 100 very specific DTCs, we're

going to have to ask you to look them up. Of course, most of you are going to be using your scan tools and various references anyway.

The rest of the story

But a cool engine alone didn't fulfill the Northstar vision. Such vigorous power required not only a stronger, smarter FWD transaxle (the 4T80's torque management briefly cuts back engine power at the moment of a shift, reducing shock and improving durability), but also an equally advanced chassis. Besides mechanical redesigns of the suspension system, there's Magnasteer, CV-RSS, and Stabilitrack.

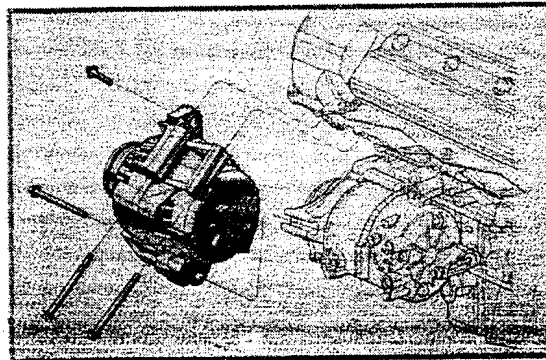
The impetus behind Magnasteer is to give engineers control of the steering system's "personality." They can easily customize it for the type of car it's going into by means of software and a laptop instead of taking perhaps weeks to make changes mechanically.

Besides the inevitable electronic controller, the key to the system is a unique device comprising a multiple-pole ring-style permanent magnet, a pole piece, and an electromagnetic coil assembly. Essentially, what it does is augment what the ordinary spool valve is doing by magnetically adding or subtracting a little twist to the steering gear input shaft torsion bar according to commands from the electronics. Where other variable-

effort steering systems have lots of wear-prone internal parts, Magnasteer has dependable electromagnetism and electronics, so there shouldn't be much for you to worry about on the service front.

No more dumb damping

The first time we ever encountered the concept of variable damping was when we saw a set of Koni adjustable shocks on one of those Volvos that looked like "Honey, I shrunk the '46 Ford." You could rotate the piston to al-



ternate between a soft ride and the hard damping that was supposed to make you feel like a race driver.

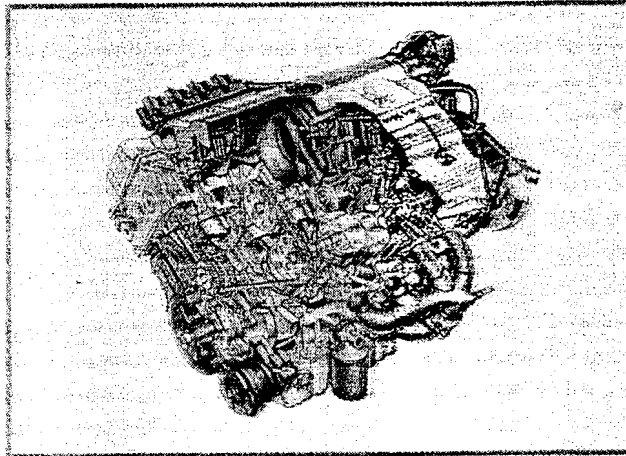
Much later, a couple of imports took a new approach: Why turn the piston rod by hand to obtain different ride and handling characteristics when it could so easily be done by means of electrical actuators? You selected either a normal or sport mode with a dash switch, or,

on the '83 Mazda 626, you could just leave it in Auto and you'd get stiffer damping as soon as you reached 50 mph.

How innocent all those sincere efforts were compared to the sophisticated world of suspension damping today. A couple of years ago, we interviewed Scott Farrenkopf, manager of production chassis controls for GM's Delphi Chassis, about the hierarchy of ride control, and the quotes we got bear repeating. "Fundamentally, valving in passive suspension is chosen to get the best compromise between ride and handling," he told MS. "The first step beyond passive is the selectable electronic damper that goes from firm to softer at the driver's command or according to speed.

"Then come adaptive systems, where the dampers adjust according to driving conditions—vehicle speed, steering wheel, brake, and accelerator positions (the '89 Allante, for instance, went from soft to intermediate at 25 mph, then to firm at 60, and shifted to firm when braking above 35 or when accelerating from 0 to 5 mph). They pay attention to what the driver's doing, not the road, so even though the road may be smooth, the ride may be harsh because of some particular input. Typically, all the dampers work together in lockstep, and they'll have three to eight discreet steps. Response takes about 100 milliseconds.

"The next step," he said, "is the semi-active or real-time system ("CV-RSS" for "Continuously Variable Road Sensing Suspension" in Cadillac jargon), which monitors road conditions and the road's influence on body and wheel motions with position sensors, accelerometers, vertical velocity sensors between the body and the wheels. Is the



body moving a lot? Is the wheel moving a lot? It can stop movement for better handling, and it uses continuously variable analog hydraulic valves typically controlled through pulse width modulation. Here, the dampers change singly—each corner responds—and in only 10 milliseconds."

Steer with the brakes

Then there's Stabilitrack, which is steering enhancement by a different means altogether—brakes. Say what? Actually, it's related to ABS, but goes beyond the pump-the-brakes concept. Believe it or not, it helps stabilize the car and prevent skids and spin-outs by applying whatever SINGLE wheel brake the computer program deems appropriate (something even the most highly skilled rally driver in the world can't do), and modulating the throttle if necessary.

Every micro-second, the computer uses input on the steering wheel angle, the relative speed of each tire, lateral "G" forces, and chassis yaw (that is, rotation on its vertical axis—think of a spin-out) to determine whether or not the car is going exactly where it's being steered. Both over- and under-steer can be corrected. For instance, whenever it senses understeer it increases hydraulic pressure to the inside rear wheel. For oversteer (or, as early motorists called it, "the dreaded side slip"), the outside front brake is applied.

The computer strategies employed in this system are fascinating. For example, Cadillac says it didn't want to let the driver develop a false sense of security as he's being kept out of trouble by a mighty microchip. So, the program lets the car skip and skid just enough to warn the maniac at the helm to slow down.

The Tidewater Region of the Antique Automobile Club of America proudly presents:

3rd ANNUAL AUTOMOTIVE SWAP MEET

Parts...Supplies...Automobilia

Saturday, March 4, 2000

8:00 AM - 3:00 PM

Khedive Temple Activity Center

645 Woodlake Dr.

Chesapeake, VA

Announcing our 3rd Annual Automotive Swap Meet from 8:00 AM to 3:00 PM on Saturday, March 4, 2000, at the Khedive Temple Activity Center. The buying public will be admitted FREE. Indoor and outdoor vendor spaces are available. Vendor participation is restricted to vendors selling ONLY automotive parts, equipment, supplies, services, and/or automobilia (no craft or household items permitted). No food/beverage sales will be permitted.....the Tidewater Region AACA will have a refreshment booth open from 8:00 AM until 2:00 PM; selling a wide variety of items at reasonable prices. Indoor spaces (10' X 10' for \$30 each) will be available by advance registration or while they last on Swap Meet Day. Outdoor spaces (10' X 20' approx. for \$20 each) are available by advance registration or on the day of the Swap Meet. Collector vehicles for sale must be in a Flea Market Space. Set-up will begin at 8:00 AM on Saturday with preregistered vendors admitted at 7:00 AM. All vendors should be off the grounds by 5:00 PM Saturday.

Directions: Take Greenbrier Pkwy North off I-64 and turn left at the first light onto Woodlake Dr. Follow Woodlake Dr. 2/10 mile to Khedive Temple Activity Center building on the left side.

For more information call Terry Bond (757-482-5222), Neil Sugermeyer (757-486-5456) or Jeff Locke (757-421-9028).

Detach here and mail to Neil Sugermeyer, 3533 Kings Lake Drive, Virginia Beach, VA 23452

I wish to participate as a vendor in the Tidewater Region AACA 3rd Annual Swap Meet on Saturday, March 4, 2000. By participating, I agree to be held responsible for any damage to the premises, floors, etc at my space(s), or caused elsewhere by me, and for any cost of repair or unreasonable clean-up. My participation also affirms my not holding the Tidewater Region AACA, its members, events organizers, and/or the Khedive Temple responsible for any damage, or injury to my property or myself or anyone I authorize to be in my space(s).

NAME _____ PHONE # () _____

ADDRESS _____ CITY _____ STATE _____ ZIP _____

Type of merchandise for sale: _____

#Indoor spaces (10' X 10') @ \$30 each: _____ \$ _____
#Outdoor spaces (10' X 20') @ \$20 each: _____
Total _____

Make check payable to Tidewater Region AACA and mail to:
Neil Sugermeyer, 3533 Kings Lake Dr. Virginia Beach, VA 23452