

# Under the Hood



The newsletter of CATHERINE'S Auto Repair & Service

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## Catherine's Corner

I obviously get asked a lot of car questions in this business, but the question I hear more than any other is not exactly about cars. It's – "how in the world did you end up owning an auto repair shop?!" (The second most popular question will be revealed and answered in next quarter's newsletter) And my employees are commonly asked a variation on that question – "is there *really* a Catherine?" – maybe thinking that a man owns the shop and named it for his wife or daughter. So I've decided it's time for me to tell my story here in the newsletter, for those who have always wondered but never asked, or who have asked but only received my standard, abbreviated three sentence response.



Photo by Fred Bennett

Growing up, I knew nothing about cars and had no interest in cars. If someone had told me that this is what I would end up doing, I would have never believed it. I attended Westminster here in Atlanta from kindergarten through senior year and then went to Georgetown University in Washington, D.C., focusing on theology, psychology, and women's studies – not your typical path to a career in the automotive industry. I always figured my life's work would be in social work or teaching. After graduating from Georgetown, I moved to Seattle with some friends and got a job working with teenagers in a residential psychiatric facility. Although I enjoyed this work and the kids, it was quite stressful and depressing for me and after less than two years I decided to call it quits. I wasn't sure what I wanted to do at that point; I just knew I needed something different.

I took on some temp jobs here and there for a few months until I heard about this program for women that taught basic trade skills. The idea of this immediately excited me! I had participated in building several Habitat for Humanity houses three years earlier and I knew that I loved working with my hands (for more info on a Habitat build I am currently involved with, please see Shop Talk). After having done such emotional and mental work with the teenagers, I welcomed the chance to do some physical work. Despite the fact that quite a few people in my life thought I had completely lost my mind, I signed up for the course.

For five months, about 40 other women and I learned the basics of carpentry and construction, electrical, plumbing, welding, and a little bit of mechanics. We didn't touch on cars at all, but dissected power tool motors and lawn mower engines – which I found fascinating. During this time, my 1985 Mazda 626 started making a strange noise, a kind of clicking when I made turns. This worried me, so I took it into a repair shop for a diagnosis. I remember them telling me something about a CV joint – and all I knew was that it was going to cost more money than I had at the moment; I didn't like the way they were talking to me; I hated not understanding what was wrong with my car; and I felt like maybe I was being "ripped off." So I went to a couple of other places for second opinions, and ended up with those awful feelings each time.

That's when the idea hit me – wouldn't it be great if I could learn about cars so that I never had this powerless feeling again and then open my own repair shop and be the kind of place where people would feel comfortable bringing their cars. The next eight years of my life were spent pursuing that dream, though sometimes indirectly, and constantly shaping and re-working my concept and vision for a different kind of auto shop.

### Our Mission:

To provide high quality auto repair with integrity, honesty, and excellent customer service, all at a fair price and with a personal touch!

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## TIME FOR A CHANGE?

### THE WHENS & WHYS OF TIMING BELTS & CHAINS

by Catherine Simpson



Most of you have probably heard of a timing belt, and maybe even have this nagging feeling that you're supposed to have it replaced at some point. But you might not know what it is or why it's so important to change it. Or you might be worried about needing a new one, only to discover you actually have a timing chain. Following is some basic information about timing belts and chains that I hope will answer those questions.

The purpose of a timing belt or chain is to connect the engine crankshaft and camshaft together and keep them synchronized with each other, so that the intake and exhaust valves are opening and closing in time with the up and down movement of the pistons. Many cars have what is called an "interference" engine, meaning that the valves are opening down into the same space that the pistons

are moving up in, with no clearance between the two. This is a common engine design because it allows for better efficiency and performance. (NOTE – if the above was too technical and you have no clue what I'm talking about, it's okay; the next statement is what you really need to know!) But unfortunately, this design also means that if the timing belt breaks, the valves can get out of time with the pistons and they can crash into each other, resulting in very serious and expensive engine damage. This is why it is important to replace your belt before it breaks. If you car has a non-interference or "free-wheeling" engine and your timing belt breaks, your car will stop running, leaving you inconvenienced on the side of the road, but most likely your engine will not be ruined.

Generally, the recommended interval for timing belt replacement is every 60,000 miles, however many cars, especially those made in the late 90s and up, don't need a timing belt service until 90k or 105k. Another factor to consider though is that timing belts wear out from age as well as use. So if you don't drive a lot of miles every year, you may want to go ahead and replace your belt before you reach the recommended mileage. We have seen timing belts break before 60,000 miles, simply because the belt was old.

*Continued on Page 2*

## CATHERINES CORNER

The first step was actually learning about cars! As I said, I literally knew nothing, so I thought it would be best to begin by attending an automotive tech school. In Seattle there was a program with GM where you alternated going to school one semester then working as a trainee in a dealership the next semester, for a total of two years. It sounded perfect for what I needed, so I applied to the program. The admissions director told me that although I had scored the highest of anyone on the entrance exams, he was very reluctant to admit me because I was a woman (at least he was honest!). He had never had a woman in his program and he wasn't sure how the dealerships would adjust to having me in their shops.

So while he spent a couple of months considering this matter and discussing it at length with his dealerships, I started looking for a job as a tech trainee. Most of those phone calls went nowhere fast; 9 times out of 10 when I responded to a help wanted ad, I was asked if I was inquiring for my boyfriend or husband. When I said no, that I was calling for myself and I wanted to learn about cars, I was usually met with an awkward silence. Finally, I found a transmission warehouse that was looking for trainees, and I ended up rebuilding transmissions there for two years. I discovered I loved fixing things. There was something very satisfying about rebuilding transmissions – like putting a complicated puzzle together and having a finished product at the end of the day.

Back in Atlanta, I wanted to learn more about the rest of the car beyond transmissions, so over the next few years I took automotive classes and worked as a mechanic at a dealership and two independent repair shops. I truly enjoyed working on cars, but my passion was still for the business side of things and wanting to have my own shop. For the following several years, I continued to work towards my goal, but focused more on business than cars. For example, I worked with my mother when she opened an art gallery and learned a lot about marketing, accounting, and other aspects of running a business. Then I took some business classes while working as my sister's nanny, taking care of her twin boys, until I decided that I was as ready as I was ever going to be and it was time to take the entrepreneurial plunge.

Now with the two shops, I feel I have achieved my original dream. But new goals have arisen during the process – to educate consumers with car care classes and newsletters; to have an apprenticeship program for women wanting to enter the field; to open more shops, possibly franchise, and have a noticeable impact on the automotive industry. However, none of this really matters or can happen if we are not always staying true to my initial concept of a different kind of auto repair shop – which is stated in my slogan “respect for you and your car,” and my mission statement printed on page 1. As always, if you ever feel we have fallen short in these goals, I want to know about it. Please send comments, questions, compliments, or concerns to [cs@catherinesautorepair.com](mailto:cs@catherinesautorepair.com).

*Catherine*

## TIME FOR A CHANGE

The next logical question might be – well, why can't you just inspect my timing belt and see if it needs to be replaced. Two reasons: all timing belts are under a cover which on most cars requires a good bit of labor to remove, and the external appearance of a timing belt can be deceptive. It is very difficult to tell if and when it will break. The safest bet is to follow your owner's manual and replace your timing belt when it is due by mileage or years.

When you do have your timing belt replaced, there are several other parts which are often recommended to replace at the same time. For example, your drive belts (that run your power steering pump, alternator, and AC compressor) have to come off to access the timing belt, so depending on their condition, it might make sense to replace them as well. The timing belt tensioner and/or pulley, water pump, and front engine oil seals are parts to consider too. This can be discussed more at the time of repair as the individual circumstances will vary among people and cars, and we can try to help you with the decision that makes the most sense for you.

Now what about timing chains? In the “old days” engines always had timing chains (or sometimes even a direct gear to gear set-up) instead of belts. Chains are durable and longer-lasting, but they are also noisier, heavier, and more expensive to manufacture, so belts began taking the place of chains for many vehicles. The timing belt also has an advantage over the chain in an overhead cam engine. The camshaft is located in the cylinder head in an overhead cam engine and therefore farther away from the crankshaft, whereas in a traditional pushrod engine, both the camshaft and crankshaft are in the engine block and closer together. A belt is better able to handle the extra length needed in the popular overhead cam engine, as opposed to a chain which is more likely to loosen up and/or break at that length (although there are always exceptions – both Saturn and Nissan are examples of engines that use both overhead cams and timing chains).

There is no specific interval for replacing a timing chain – in general, you change it when it begins causing problems, usually either a loss of power or lots of noise, indicating that it will soon break. Incidentally, a timing belt gives you no warning before it fails. Normally, timing chains will last at least 100,000 miles and most will last significantly longer than that, even the life of the engine. However, if a timing chain breaks, damage can be done to the engine as with a broken timing belt, so it is best not to ignore the warning signs.

Check your records and see if and when you last had your timing belt replaced. It is much cheaper to replace a timing belt than it is to replace bent valves. And if you're wondering whether you have a timing belt or chain, an interference or free-wheeling engine, just ask us – if we don't know the answer off the top of our heads, we'll be happy to look it up for you.

Stone Soup



by Jan Eliot

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## employee spotlight

### Maggie, 1989-2005



Maggie first came into my life when she was six weeks old. I was living in Seattle with some friends and we decided that it would be fun to get a puppy. We went to the local Humane Society and picked out this adorable little black ball of fur and called her Magnolia, or Maggie for short. She was so energetic she also earned the nickname Marathon Maggie. The Labrador Retriever in

her loved to swim and chase balls, while the Border Collie part of her enjoyed herding those tennis balls together – even in the swimming pool! And she was always up for a good walk or hike.

Maggie moved to Atlanta with me in 1994, and began coming to the Piedmont shop with me every day soon after it opened (to know what year that was, you'll have to read the Car Quiz). She loved being around people all day and getting lots of attention – and food! Her favorite activities every day were lunch with the employees (or sometimes at the feet of accommodating customers), barking at the mail carriers, and greeting every customer with her tennis ball. As many of you had noticed, Maggie's health began seriously deteriorating this year. At the end of July, I finally made the difficult decision that the time had come to put Maggie to rest. I am grateful for the wonderful 15 and ½ years we had together. She was the sweetest dog and will be missed tremendously.

## car care classes

### COME TO US...

Have you ever felt helpless when your battery was dead or if you had a flat tire? Have you always wanted to take the mystery out of lifting your car's hood and having a look around? Have you wanted to feel more empowered when discussing your car with a repair shop? Well then, come join us!!



The upcoming class is open to men, women, and teenagers, and will be held on Sunday, September 25, from 2:00 pm until 5:30 pm at the Northside Drive location. There is no charge for this class, and snacks will be provided. We recommend that you wear comfortable clothes that you don't mind getting dirty. Please call 404-817-7640 to sign up as space is limited. For more information, go to our website at [www.catherinesautorepair.com](http://www.catherinesautorepair.com).

### ...OR LET US COME TO YOU

An abbreviated and less hands-on version of our car care class is now available to come to your workplace or association. If you are part of an organization that you think would be interested in learning more about car care, let us know and we'd be happy to set something up.

## shop talk

### CUSTOMER TESTIMONIALS



I am really proud of my employees and I would like to take this opportunity to brag about them a bit. Following is a sampling of some e-mails I've received in the last three months. To read more, check out the testimonial page on our website, [www.catherinesautorepair.com](http://www.catherinesautorepair.com).

*"Recently one of your mechanic's exhibited such honesty and helpfulness that I am committed to supporting your business by bringing our family cars to it as long as the doors are open... In short, without your mechanic's listening to and taking seriously our concerns-we would have paid \$700.00 needlessly. Time is important and no less so in a small business that does not overcharge their customers and pays their workers fair wages- and I am sincerely grateful that your mechanic spent some of his precious time listening to our concerns."*

*"... I have always appreciated the service I have received from Catherine's Auto Repair and I think one reason why is that all of you treat us as 'clients'... I feel like I get a lot more individual attention kind of like how a professional service firm treats its corporate clients. You guys are great and I always recommend you to everyone I know. Also, the article about trade secrets was great. I am going to circulate it to everyone at work."*

*"I just wanted to drop you a note saying what a pleasant experience I had sending my car to your repair shop on Northside. I called before I dropped off my car to get an estimate of the cost, and Toby answered my questions and quotes in a no-nonsense way. All prices included the labor, so I wasn't surprised when I got the final bill. After dropping off my car, a technician named Eric dropped me off at my house, and told me along the way how much he enjoyed working at your garage. The work was done when I was told it would be done, and it cost what I was told it would cost. I have to congratulate you for bringing honesty and integrity to the car repair business. I'm going to tell everyone to go to Catherine's!"*

### ON A PERSONAL NOTE

I am currently involved in a project right now through *Atlanta Habitat for Humanity* called **Atlanta Women Build**. In 2003, over 300 women from all Atlanta communities participated in that Atlanta Women Build by funding and building a house with a deserving homebuyer, and we are in the process of doing it again. The build will begin on Saturday, September 17 and continue for the following 6 Saturdays (except the weekend of October 9 will be a Sunday) until the dedication on October 29. To do this, we need to raise \$70,000 and enlist roughly 300 volunteers. At this time we are close to our goal, but we are not there yet. In addition to being a whole lot of fun, the build is a powerful, unifying experience for everyone involved. For any interested women, we are asking a contribution of \$100 or more to participate in the build. Please contact Catherine for more information, either 404-441-8396 or [cs@catherinesautorepair.com](mailto:cs@catherinesautorepair.com).



## car quiz

I thought we would try something a little different this time – automotive trivia. So put on your thinking caps and have fun!

### Questions:

1. What car had the first electric starter and in what year?
2. How much did a 1955 Ford convertible cost when new?
3. What part found on almost all cars is missing from the old VW Beetles?
4. What years did the following become requirements on cars?
  - a) front seat air bags on both driver and passenger sides
  - b) seatbelts
5. What cars were driven in the following movies?
  - a) Back to the Future
  - b) Thelma and Louise
  - c) Smokey and the Bandit
6. What year did Catherine's Auto Repair first open and with how many employees? When did the second shop (Northside) open, and how many total employees are there now?

**Answers:**  
1. 1911 Cadillac; 2. \$2324; 3. a radiator; 4. 1998, 1967; 5. 1981 Delorean, 1966 Thunderbird, 1977 Trans Am; 6. Oct 2000, 2 employees, March 2003, 17 employees

## tech tip

*Even though the hot days of summer are almost over, your engine can still overheat under various circumstances. So what should you do when that happens?*

If you notice your temperature gauge starting to rise much over the halfway mark, turn off your AC as it puts an extra load on the engine, and switch the climate control to heat. Although this may overheat your passenger compartment, leaving you uncomfortable, it also can take some heat away from the engine and bring the temperature back down to normal. However, if the gauge continues to rise and gets near or in the red zone, your engine is now actually overheating and you need to shut off your car immediately. (NOTE – not all cars have a temp gauge on the dashboard; sometimes the only warning you will receive is when the temp light comes on, indicating a problem) Driving with the engine overheating can cause serious damage to either the cylinder head (the top part of the engine) or the engine block (the bottom part) or the gasket in between. Fixing any of those three are major and costly repairs, so it is best to have your car towed to a repair shop rather than risking the drive. And remember never to attempt to open the radiator cap while the engine is hot and under pressure – you could end up with a bad burn.

**For more information and to try our Online Appointment Scheduling**

[www.catherinesautorepair.com](http://www.catherinesautorepair.com)

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