

THE BUZZ

Larry Harker's
Auto Repair

A QUARTERLY NEWSLETTER – Q1 2017



LARRY HARKER'S AUTO REPAIR

3845 W. Indian School Road • Phoenix, AZ 85019

(602) 278-5558 • www.lharepair.com

ARIZONA: THE HUB FOR DRIVERLESS VEHICLES



The race is on to put **driverless vehicles** on the road, and Arizona is right in the middle of it. In early 2016, **Google** announced that Arizona would become the fourth location in the country to have the program brought to their cities.

Arizona welcomed the program with open arms. **Governor Doug Ducey** said, "Google's selection of Arizona for this testing program is just another sign that Arizona is on the cutting-edge when it comes to innovation."

With 12 driverless vehicles initially hitting the roads in **Chandler**, Google soon moved to neighboring cities including **Phoenix, Mesa, Tempe, and Gilbert**. These cities provided extreme heat, five-stack traffic lights, haboobs, and plenty of golf course crossings, all climates and situations Google wanted to test their vehicles in.

While many were excited to have Google in their state, some were suspicious of the program, specifically as it related to job security and safety on the roads. However, the program actually led to an increase of jobs in the area. Google offered local drivers the opportunity to act as "**vehicle safety specialists**" who would be behind the wheel of each driverless vehicle, ready to take over at a moment's notice. Employees were offered \$20 per hour driving cars for six to eight hours a day.

As far as safety is concerned, there doesn't seem to be an issue there either. In August 2016, Google vehicles were involved in **three accidents**. In two of the accidents, however, drivers were manually operating the vehicle. In the final instance, a Google vehicle was rear-ended while in the autonomous mode.

While Arizona cities were just getting used to Google vehicles in their neighborhood, **Uber** announced that they too were moving their self-driving vehicle testing to Arizona. The announcement came on December 22nd.

Uber was initially testing their vehicles in San Francisco, but after California DMV revoked registrations for the vehicles, they decided to head to Arizona. Ducey was quoted saying, "**Arizona welcomes Uber self-driving cars** with open arms and wide open roads. While California put the brakes on innovation and change with more bureaucracy and more regulation, Arizona is paving the way for new technology and new business." Uber is expected to begin operating vehicles **by the end of January 2017**.

As driverless cars pave the way for one of the most exciting technological advances in years, Arizona will play a significant role in making that a reality.

WHAT IS AN AUTONOMOUS VEHICLE?

Inside the car of the future

Since the automobile was invented, carmakers have been adding features to reduce driver error. Today, a vast network of computers and sensors mostly control standard automobiles, with the driver being only one piece of the puzzle. Fully automatic cars used to be mere science fiction, but now it's becoming reality.



Features of autonomous cars...

In the future, steering wheels, brakes, gas pedals and other major devices will likely be removed from fully automatic cars.



Lidar (light detection & ranging)...
• has a precise radar and sonar that detects objects in motion (i.e. other cars and pedestrians),
• maps points in space by beaming a scanner's 64 rotating lasers from the roof of the vehicle,
• records million measurements/sec. to form 3D models that is accurate to less than half an inch.



Preloaded 3D map...
• indicates to the computer where traffic lights, stop signs and crosswalks are located.
• includes scenarios for surrounding road hazards (i.e. construction).
• recognizes hand signals by cyclists.



Adaptive cruise control...
• will automatically slow down, speed up and stop the car during traffic based on the speed of the vehicle ahead.



Emergency Brake Assist Pedestrian Protection...
• uses radar and cameras to assist the car in reacting and making evasive maneuvers (i.e. changing lanes to avoid pedestrians or other vehicles).



Stereo cameras...
• are specialized cameras.
• will outline and identify pedestrians and cyclists.

Where in the U.S. are autonomous cars legal?



Continental and partner IBM plan to have autonomous cars on the road by 2015. Google predicts its autonomous cars will be ready in about four years.

Are computers better drivers than humans?

• Self-driving cars could eliminate or drastically reduce the risks of accidents caused by driver error.
• Computers have greater awareness and faster reaction times than humans, while not being subject to distractions, fatigue or alcohol consumption.
• Drinking and driving is the leading cause of car crashes.



In 2013, car accidents caused...
• **35,000 deaths**
• **3.8 million injuries**

Self-driving cars would reduce car accidents by 90%...
• **preventing 30,000 deaths**
• **2 million less injuries**
• **\$400 billion in savings by 2020**

Continental calls its self-driving car...
"the car you can't crash."

Google has experimented with a fleet of driverless cars since 2009, driving...
more than 700,000 miles without a crash.

But what are the challenges?

While they may reduce crashes, saving money and lives, introducing self-driving cars will likely present its own set of challenges.

Create new safety risks such as...
system or technological failures, poor safety when vehicles encounter situations that aren't included in their program, and/or encourage users to engage in risky behaviors.

Greater connectivity can cause privacy concerns such as...
vulnerability to information abuse, unwanted GPS tracking and data sharing.

The convenience of driverless cars could lead to more travel...
which could cause increased pollution and raise the costs of parking.



WHAT OTHERS SAY – A SAMPLE OF OUR ONLINE REVIEWS

Dawn W.
12/21/16



We've always had good work done by Bob & Ellen. Wouldn't go any where else because you can't get quality work at other places.

Marie C.
12/17/16



This shop is always a pleasure to do business with. We took in our son's Eclipse. They were able to diagnose the issue and resolve to the best we can in the time frame we had. Very happy with the outcome and will not hesitate to bring our other vehicles in when we need service.

Eileen B.
12/9/16



This is the best auto repair shop in town! They are very professional and do quality work for a fair price. We bring both our personal and work vehicles to them, and we recommend them to anyone we know who is looking for a trustworthy and quality repair shop. Owner's, Bob and Ellen, conduct their business with honesty and integrity. Thank you for the many years of great service!

Dan S.
12/3/16



Always prompt, friendly and professional service. They have been servicing our cars for many years. Highly recommend them!

More reviews at:

<http://www.garagefly.com/shop/Larry-Harkers-Auto-Repair-Phoenix>

LUCID MOTORS BRINGS 2,000 JOBS TO ARIZONA



In late November 2016, California-based company Lucid Motors [announced](#) that Casa Grande, **Arizona** would be home to their newest assembly plant. As the company begins building and production, they've promised to provide **2,000 jobs** over the next five years, with hiring starting as early as next year.

CONTACT US

LARRY HARKER'S AUTO REPAIR

3845 W. Indian School Road
Phoenix, AZ 85019

P: (602) 278-5558
E: ellen@lharepair.com
W: www.lharepair.com

Read **Local** and **Validated** Reviews

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WHO IS GARAGEFLY?



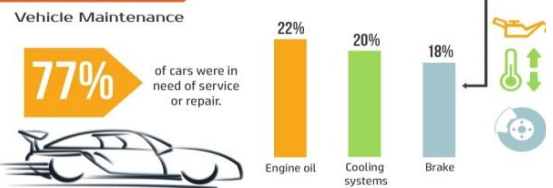
GarageFly.com is an Arizona-based, comprehensive online resource that delivers automotive peace of mind to consumers. Drivers seeking information about reputable auto repair shops and auto body shops can read validated reviews for shops throughout the area, and quickly book an appointment online. GarageFly empowers consumers with information from reviews so they feel confident in their choice. To find out about our latest promotions, please visit us online at www.GarageFly.com!

THE BASICS OF CAR MAINTENANCE

BE CAR CARE AWARE



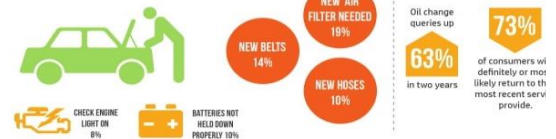
TOP PROBLEM AREAS



NEEDS REPLACING



LOW, DIRTY, OR LEAKING



LUBRICANTS AND FLUIDS

