

# ONE STEP CLOSER

By Kenneth E. Seaton



**CAN WE TALK... CARS, PARTICULARLY; BATMAN'S BATMOBILE, KNIGHT RIDER'S KITT, AND NCIS'S OTTO. ALSO, HOW ABOUT SOME OTHER VERY COOL VEHICLES THAT WERE FEATURED IN ACTION FLICKS LIKE; TOTAL RECALL, DEMOLITION MAN, THE 6TH DAY, I, ROBOT AND A FEW OTHERS.**

OK, so do you think that these vehicles were pure fantasy or science fiction? Not at all, because on a daily basis we are moving one step closer to not only seeing but to actually being able to travel in a self-driving vehicle!

We have been travelling in that direction for a while now. In 2009 the first blind driver took control of a vehicle that was designed by Virginia Tech College of Engineering students. The car operated by

voice command software, had laser range finders and other new technologies. Their ultimate goal was to help provide blind people with the ability to be able to drive themselves in their own adapted vehicles. One user declared the experience as liberating.

There are many retrofitted vehicles currently travelling our roads that are being driven by persons with disabilities. In fact, the Elbee is a Czech-produced vehicle that is specifically designed for wheelchair-bound people. The wheelchair is rolled into the vehicle and actually becomes the driver's seat. There is space for a passenger directly behind the driver and the vehicle can reach speeds of 80 km/h and is a whopping 2,479 m in length.

Google is known for setting ambitious targets for itself, and it's apparently making no exception for self-driving cars. Such "autonomous vehicles" will be a reality for "ordinary people" in less than five years; Google co-founder Sergey Brin said on September 2012 during a press conference at Google's Silicon Valley headquarters. <sup>1</sup> What is particularly noteworthy is that Google's second generation of entirely driverless cars will not include a brake

pedal or a steering wheel and will operate fully without human intervention.

We've all seen those new car ads selling vehicles with self-parking assistance. We are already benefiting from adaptive cruise control, automatic braking and are constantly barking out hands free commands to our vehicles. And now, we are being tempted with new technological advances like; driver override systems, accident prevention systems, biometric vehicle access and tracking systems. Can self-driving vehicles be only a wheel turn away?

According to a recent study from Statistics Canada, three-quarters of Canadians aged 65 and older have a driver's licence. The Atlantic provinces, Quebec, Saskatchewan, and British Columbia had the highest proportions of seniors. However, Statistics Canada's research also indicates that the older a person is the greater risk they are on the road. Will self-driving vehicles help keep them – metaphorically at-least – behind the wheel?

Most recent reports state that the majority of vehicle accidents are caused by driver error. Proponents for autonomous vehicles claim that the number of acci-



dents will be significantly reduced when the human driver is removed from the equation. This is because autonomous vehicle reaction times would be far superior to that of even the most veteran driver. Quicker reaction times would also allow cars to travel closer together; there would be less congestion and beneficially less pollution.

Other drivers who may have some

form flexibility or other type of mobility challenge – including many seniors – are using new technology like; park assist, blind-spot monitoring, lane departure warning, rear camera alerts and crash-imminent braking system to aid them in improving the level of their driving abilities.

Presently numerous vehicle manufacturers provide many standard features and/or have customizable options available for

persons with disabilities and for those seniors dealing with special challenges. Some of those options are; power sliding side doors with larger door openings (to accommodate walkers or even a small sized collapsible mobility scooter), easily fold down and stow seats, lower step-in height, leather seats (that make it easier to slide in or out of vehicles), keyless entry, electric power steering wheels with mounted controls, etc.

For any person with special needs, self-driving vehicles promise to deliver a new world of previously unthinkable possibilities. While it is true technological advancements have opened up the road to many drivers, there are other persons with health limitations or those who have a visual impairment which eliminates them from any possibility of obtaining a driver's license.

As it stands now, a great number of persons with disabilities and seniors rely on private vehicles i.e. family and friends to see to their travel needs. Others arrange for rides via taxis, driver share programs or through community, volunteer and non-profit agencies. Also, depending on its availability, different types of paratransit services are utilized.

In the not too distant future a person could arrange for a self-driving vehicle to pick them up, take them to their destination and then swing by later to take them home. And if they are using their own vehicle, upon arriving at their destination and discovering that there is no disabled parking spot available, just have the vehicle park itself elsewhere until it is needed again.

What a game changer this could be for those persons who reside in areas where there is limited public or paratransit transportation available. Once autonomous vehicles become closer to being the norm, it will not take much time before savvy automakers begin jumping on the self-driving band wagon. Shrewd manufacturers will start to market vehicles specially geared towards persons with disabilities and seniors.

With the advent self-driving vehicles, companies that currently specialize in the transportation needs for persons with disabilities and seniors will have to reassess their business strategies. What once was probably considered to be a fairly steady income stream should all but disappear with the advent of an autonomous vehicle society.

However, a question that must be asked is will self-driving vehicles be accepted and used by persons with disabilities or seniors? For some, driving is a lib-



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erating force as it affords them a portion of independence that may otherwise go lacking from their lives. Additionally and ironically there will be some who will distrust the very technology that will set others free!

Effective transport can often be a crucial component in achieving a fuller life. Research indicates that persons with disabilities and seniors often feel socially isolated through a lack of access to reliable transportation services. Importantly, this is precisely where autonomous vehicles can have an enormous impact on quality of life.

In a 2013 Pension/Driving Poll Report CARP – Canada's largest advocacy group for older Canadians – found that 97% of its members drive and that 65% drive most every day. 96% its members reported that they would stop if they felt that they could no longer drive. Susan Eng, Vice President for Advocacy at CARP believes that people will worry about autonomous vehicles, but once they get past that and the system gets proven it will be a real boon for seniors.

Transportation concerns for seniors are a real and significant issue. It's not a trivial decision for seniors to make, in not having a car as those who have a car find it really meaningful to have one. "I can see it as being a major help (self-driving vehicles)," she said, "as one of the issues that people do worry about is their own executive functions in driving, especially in major cities, major urban centers where driving just becomes much more treacherous."

"People still have the need to get to places on their own but the roads are less safe," she added, "and the hope and promise of autonomous vehicles is that the vehicles will be able to move around, just like on the Jetsons, where you had a personal car that joins a grid and off you go to where you have to go. It is a dream that's yet to happen."

While self-driving cars will remove the drivers' health or any special challenges that they may have from the driving equation; vehicle monitoring systems will also be able to keep an eye on its (drivers') health and they will also have the capacity to alert emergency services in the advent of an on-board medical emergency. Just think of the reassurance that this technology will give to family and friends!

Alternatively, self-driving vehicles will prove beneficial not only to ordinary people, persons with disabilities and seniors but they will also be used by; children, teens and most importantly by persons under the influence of alcohol or one type



of narcotic or another. Be it doctor prescribed or self-administered. This is considered to be another form of distracted driving and according to the CAA economic losses caused by distracted driving traffic collision-related health care costs and lost productivity are at least \$10 billion annually.

While it will take time for autonomous vehicles to be the norm on our streets, it is fantastically exciting to think about the joy of freedom that these vehicles will offer to some of us. Joy in the opportunity

– if only for a little while – to be able to go from here to there totally on your own without the need of help from family, friends or care-givers!

<sup>1</sup> Nicolai, J., 2012, Self-driving cars a reality for 'ordinary people' within 5 years, says Google's Sergey Brin, ComputerWorld, [http://www.computerworld.com.au/article/437481/self-driving\\_cars\\_reality\\_ordinary\\_people\\_within\\_5\\_years\\_says\\_google\\_sergey\\_brin/#closeme](http://www.computerworld.com.au/article/437481/self-driving_cars_reality_ordinary_people_within_5_years_says_google_sergey_brin/#closeme) 🚗

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