

A Guide to Road Safety in

South Africa

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1. Disclaimer, Terms & Conditions

This eBook was written with the intention of educating car owners in terms of road safety. The content within this eBook cannot be used to substantiate any claim that is made to MiWay. Each and every individual who signs an agreement with MiWay insurance enters into a legal and binding contract which dictates the manner in which an insurance claim is made, processed and approved.

If you have any questions or queries, please do not hesitate to contact MiWay where an insurance consultant will be happy to assist you. Give us a call on 0860 64 64 64. Visit the [MiWay website](#) or connect with us on [Twitter](#), [Facebook](#) or [G+](#).

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A SHORT HISTORY OF THE MOTOR VEHICLE

1769

The first car appears. It consists of a large metal frame with seats and is run by a steam engine.

1806

Internal combustion engine is invented. It runs on liquid fuel.

1882

The first series automobile is manufactured by Karl Benz in Germany.

1900

The automobile industry explodes in Western Europe. France produces more than 30 000 units, representing almost 50% of the world's entire vehicle production. The electric engine sees light.

1908

Ford's Model T forever changes the industry in terms of design and the overall number of cars that are created.

1922

First car with a unitary body is invented: the Lancia Lambda.

1946

First 10 000 Volkswagen Beetles are constructed.

1949

Cars start appearing all over the US with 8-cylinder V motors. Enzo Ferrari launches the Ferrari 250. Lancia launches the V6 motor, called Aurelia.

1963

The Porsche 911 is born. One of the most legendary sport cars in history.

1978

Maserati Bora, the fastest car in the world, hits the market. It reaches almost 290 km / hour.



The motor vehicle brought with it a considerable amount of changes that have impacted our daily lives in numerous ways.

3. How the Motor Vehicle Changed Our Lives

It has changed our mind-set in terms of distance, considering that it transformed long journeys that used to take hours into short trips that take mere minutes.

People soon realised that due to the technological marvel that is the motor car, it was no longer necessary to live close to your place of work and, because many took advantage of this, city layouts all over the world changed and many residential areas started appearing on the outskirts of cities, far from the busy industrial centres.



Commerce also boomed as it was possible to easily transport products to and from neighbouring countries, and we were introduced to many exotic goods that have since then become common household items.

The motor vehicle also brought about a second industrial revolution. Henry Ford, the first mass producer of cars, created the continuously moving assembly line and also had workers assigned to specific posts doing specific jobs. This mode of production was quickly copied by other industries, because it increased both accuracy and speed of production.

The motor vehicle has most certainly improved our lives for the better – but unfortunately, the above are not the only changes that the motor vehicle has brought about. According to the World Health Organisation, the number of road traffic deaths per annum is over 1.2 million. Cars are, in fact, the number one cause of accidental death in many countries. Arrive Alive states that annually, in South Africa alone, there are over 500 000 car-related accidents and, as a result of these accidents, 10 000 people lose their lives. Considering these statistics, it becomes clear why it is so important to adhere to the rules of the road and to also take other precautions to ensure road safety.

Interesting Facts about Cars

- There are over **1 billion** cars currently in use on earth.
- On average, **165 000** cars are produced every day.
- The average car consists of **30 000** parts.
- Over **50 000** volatile organic compounds make up that 'new car smell'.



When last did you have a look at the rules of the road?

Chances are that it was probably around the time that you were studying for your learner's license.



4. The Rules of the Road, Driving Signals and Speed Limits

All in all, there are 26 rules and, if we're honest, most of us could probably do with a little refresher course. Some might argue that the *Right of Way at Certain Junctions* rule should be required reading for all South African motorists, seeing as most of us still seem to get confused when it comes to traffic circles and four-way stops.

Below is a full list of the Rules of the Road, Driving Signals and Speed Limits. If you are unfamiliar with any of them, follow the link to the Arrive Alive site and educate yourself. Rules are there for a reason, as the old saying goes, and not adhering to the ones listed below could result in serious injury or even death.





4.1 Rules of the Road

- [Vehicle to be driven on the left side of roadway](#)
- [Driving on a divided public road](#)
- [Passing of a vehicle](#)
- [Prohibition of driving on the shoulder of public road, except in certain circumstances](#)
- [Crossing or entering a public road or traffic lane](#)
- [Driving signals](#)
- [Right of way at certain road junctions](#)
- [Procedure when turning](#)
- [Towing of vehicles](#)
- [Stopping of vehicles](#)
- [Parking of vehicles](#)
- [Certain vehicles may be stopped and parked at any place where necessary](#)
- [Compulsory stops](#)
- [General duties of driver or passenger of vehicle on public road](#)
- [Prohibition on use of communication device while driving](#)
- [Duties relating to motor cycle, motor tricycle or motor quadrucycle](#)
- [Vehicle that causes excessive noise](#)
- [Use of a hooter](#)
- [Riding on pedal cycles](#)
- [Pedestrian's right of way in a pedestrian crossing](#)
- [Duties of pedestrians](#)
- [Racing and sport on public roads](#)
- [Hindering or obstructing traffic on a public road](#)
- [Vehicle left or abandoned on a public road](#)



- [*Damage to public roads*](#)
- [*Special provisions relating to freeways*](#)

4.2 Driving Signals

- [*Left-turn hand signal*](#)
- [*Right-turn hand signal*](#)
- [*Use of direction indicators in lieu of hand signals*](#)
- [*Signal to indicate intention*](#)
- [*Permissible hand signals*](#)

4.3 Speed Limits

- [*General Speed Limits*](#)
- [*Speed limit for particular class of vehicle*](#)

4.4 General

- [*Towing of vehicles*](#)

Interesting Facts about Streets & Highways

- The longest street in the world is in Toronto, Canada. It's called Yonge Street and is **1, 896 km** long.
- The shortest street in the world is located in Wick, Scotland. It is **206** centimetres long. There is only one door on this street which leads to a small beer garden.
- The longest highway in the world is the Pan–American Highway. It is **48 000 km** long and connects numerous cities in North and South America.
- The oldest street is the road to Giza, in Egypt. It's **4 600** years old.

A SHORT HISTORY OF THE SEATBELT

Early 19th Century: The Seatbelt is invented by the English aeronautical engineer, George Cayley. He needed a safety mechanism to keep his test pilots in their seats. The seatbelt was it.

1885

Edward J. Claghorn of New York receives a patent for the seatbelt.

1911

Benjamin Foulois has a belt made for the seat of a Wright Flyer Signal Corps 1. This allows him better control during take-off and landing.

1939

(World War II)
Seatbelts are used in all military aircrafts.

1949

Seatbelts are used in cars.

American car manufacturer, Nash, offers seatbelts as options.

1950s

Medical doctor, Hunter Shelden, suggests the idea of a retractable seatbelt to the automotive industry.

1955

Ford offers seatbelts as options.

The first modern three point seatbelt hits the market. It was patented in the U.S and is used in most vehicles today.

1958

Swedish Saab first introduced seatbelts as standard.

1970

First seatbelt law is put into place in the state of Victoria, Australia. The wearing of seatbelts is made compulsory for drivers and front-seat passengers.



In 1964, an initiative called the 'Driver Improvement Program' was created by Chris Imoff, a member of the U.S National Safety Council, and a part of this program consisted of a Defensive Driving Course (DDC).

This was, in fact, the first Defensive Driving Course in recorded history.

6. The Art of Defensive Driving

Now, in South Africa alone, you'll find numerous accredited institutions that offer defensive driving courses, and among them are the advanced driving academies of premium car manufacturers like BMW, Audi, Mercedes, Toyota and Volkswagen.

Signing up for a couple of defensive driving lessons will not only ensure that you are better prepared for the many dangers that await you on South African roads, but with a defensive driving certificate or diploma, most insurance providers will consider you a lower insurance risk and this could result in a lower monthly insurance premium.

For more information on what defensive driving is and what it entails, read on.



6.1 What is Defensive Driving?

The aim of defensive driving is to reduce the risk of a collision by anticipating dangerous situations, adverse conditions as well as the driving mistakes of others.

To achieve this, you have to implement driving techniques that enable you to identify various hazards in a predictable manner. You also have to be hyper-aware of everything that is happening around you while you're driving, and be prudent, diligent and cautious as soon as you take a seat behind the wheel.

The aim of defensive driving is to make the road a safer place for you, the defensive driver, and your fellow road users.

6.2 Defensive Driving and Preparedness

Defensive driving is not just about possessing a specific set of driving skills. It starts with preparing for the journey ahead and being aware of your abilities, challenges and restraints. As a good defensive driver you are:

- ✓ Aware of your own driving ability
- ✓ Aware of your vehicle's fitness
- ✓ Aware of the road and traffic conditions
- ✓ Aware of the best time to drive
- ✓ Aware of the weather and traffic reports
- ✓ Aware of the journey and route to the destination
- ✓ Ready to adjust to road and weather conditions
- ✓ Knowledgeable of the [Rules of the Road](#)
- ✓ Aware of accident types and types of injury
- ✓ Aware of how to protect yourself from injury
- ✓ Able to share the roads safely and defensively
- ✓ Aware of techniques on sharing the roads safely
- ✓ Able to avoid others who are driving aggressively
- ✓ Aware of how to make yourself visible



Interesting Facts about Road Accidents

- The first car accident occurred in Ohio, in 1891.
- Men, on average, cause twice as many serious car accidents as women.
- Most car accidents occur within 5 km of the driver's home.
- In South Africa, the chance of being in a fatal car accident between midnight and 4 AM is four times higher than during daytime.
- In South Africa, deaths resulting from road accidents are twice as high as the global average.

A SHORT HISTORY OF THE SHATTER-PROOF WINDSCREEN

1902

French Le Carbone Corporation gets a patent for coating glass objects with celluloid in order to make them less likely to crack or break.

1903

Laminated glass is invented by Édouard Bénédictus, a French chemist, after a laboratory accident.

1905

John Crewe Wood, a lawyer in Swindon, Wiltshire, England, patents a laminated glass to be used for windscreens. Canada balsam bonds together the layers of glass.

1906

John Crewe Wood opens the Safety Motor Screen Co. which produces and sells his patent.

1927

Canadian chemists, Howard W. Matheson and Frederick W. Skirrow, invent plastic polyvinyl butyral.

1930

Road Traffic Act in Britain requires new cars to come out with windscreens of "safety glass".

1936

A company in the USA invents safety glass consisting of a layer of polyvinyl butyral between two layers of laminated glass.

1939

600 000 square feet (56,000 m²) of safety glass is used every year by the Ford Motor Company works in Dagenham, England.



An interesting fact about the innovations in car safety that will be discussed in this chapter is that all of them were invented as vehicle manufacturers set out to create the first autonomous car.

8. The Latest Innovations in Car Safety

The dream of creating a self-drive car has now been realised and there are many prototypes out there that are being put through their final paces. It won't be long before they become commercially available. The most famous of these are probably the [Google Driverless Cars](#) which have clocked over 1.1 million km accident-free.* Google has ten of these cars, namely six Toyota Priuses, an Audi TT, and three Lexus RX450h vehicles - all of them operated by Google's Chauffeur software. Google estimates that these autonomous vehicles will be made available to the general public somewhere between 2017 and 2020.

* Please see "Interesting Facts about Autonomous Cars" at the end of this section.



8.1 Intelligent Parking Assist System (IPAS)

Several brands of passenger vehicles and SUVs are now available with an inbuilt Intelligent Parking Assist System (IPAS), also known as an Advanced Parking Guidance System (APGS), and, as these names suggest, this system assists drivers in parking their vehicle. To be more specific, it was designed to make reverse parallel parking a hassle-free experience.

For those of us who struggle to parallel park, this technology may sound like a much-needed blessing, although it should be noted that self-parking cars are not completely autonomous. The driver is still required to regulate the vehicle's speed using the brake pedal.

But how does this technology work?

With the help of an on-board computer, which uses cameras built into the front and rear of the car, and sensors located at similar locations that can detect the proximity of nearby vehicles, a car can steer itself into a parking space with little input from the user. In essence, the central processor of the on-board computer calculates the optimum steering angles using the information it receives from the cameras and sensors and then communicates this information to the Electric Power Steering System. And so the vehicle is guided into the parking space.

Sounds complicated? Well, it is. The Toyota Motor Corporation, which first introduced this parking system in 2004 when it launched its hybrid Prius models in Japan, had to go back to the drawing board several times before it was perfected in 2006. When this parking system was finally launched in the USA, it received a lot of media attention and was even featured on the Oprah Winfrey Show. It also received similar coverage all over the world. Evidentially, this was a story of great public interest, which makes you wonder: Is the inability to parallel park a worldwide endemic?



8.2 Lane Departure Warning System (LDW) & Lane Keeping System (LKS)

There are two main types of systems that are designed to take action when a vehicle begins to move out of its lane:

- Lane Departure Warning Systems (LDW) warn the driver if the vehicle is leaving its lane. These warnings can be visual, audible, and/or vibration warnings.
- Lane Keeping Systems (LKS), like LDW systems, warn the driver if the vehicle is moving out of its lane and, if no action is taken, automatically takes steps to ensure that the vehicle stays in its lane.

Both systems use either video sensors (mounted behind the windshield and typically integrated beside the rear mirror), laser sensors (mounted on the front of the vehicle) or infrared sensors (mounted either behind the windshield or under the vehicle). As soon as these sensors detect that a vehicle is moving out of its lane, a warning mechanism is triggered.

Lane Keeping Systems (LKS) use Stability Control Systems (SCS) to make the necessary corrections and so ensure that the vehicle stays in its lane. These electronic control systems use a vehicle's brakes to make corrections and to 'steer' the vehicle back to where it should be. This can be achieved because this computerised technology is able to apply braking pressure to each wheel individually. It would, for instance, apply pressure to the brakes of the outer front wheel to counter an over-steering action or apply pressure to the brakes of the inner rear wheel to counter an under-steering action.

A Lane Departure Warning System (LDW) and a Lane Keeping System (LKS) are great safety features for a car to have, but just because a car has them it doesn't mean that the driver can afford to pay less attention while driving.



8.3 Autonomous Emergency Braking (AEB)

Autonomous Emergency Braking (AEB) uses radar, lasers and optical sensors to identify other vehicles and pedestrians and then automatically applies the brakes if the driver does not respond in time. According to Thatcham, a world class motor vehicle research centre in the UK:

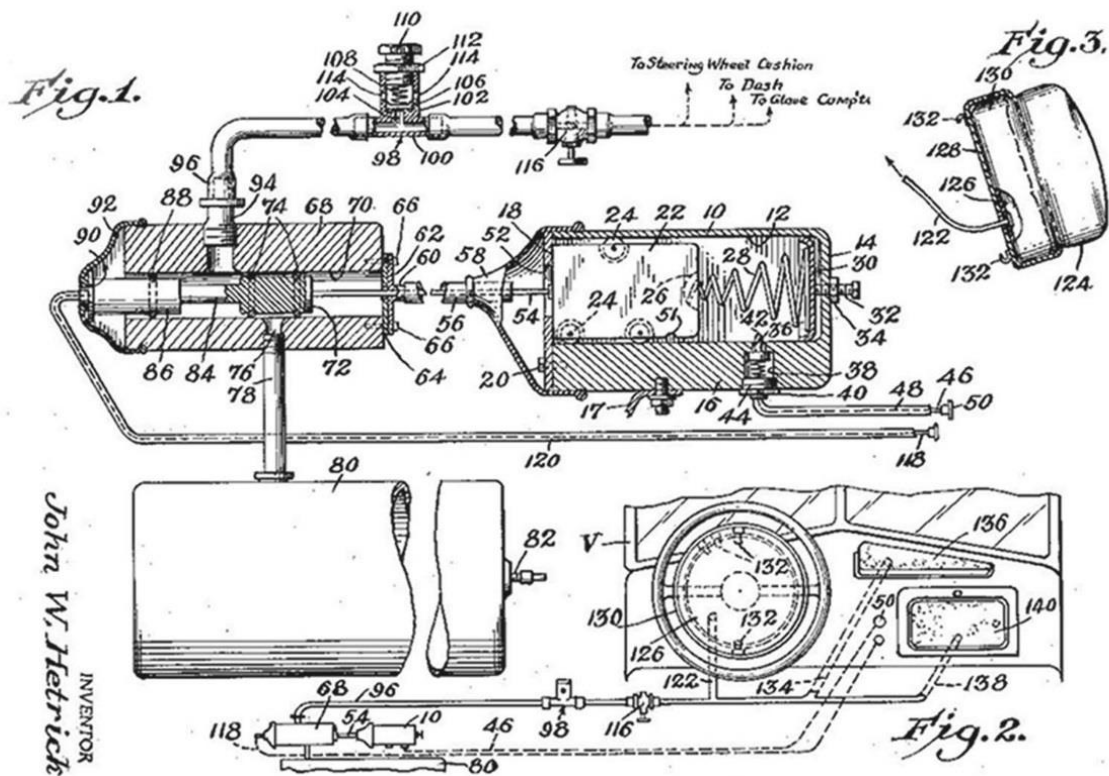
- ✓ AEB reduces the occurrence of low speed accidents by 20%
- ✓ These systems are most effective at lower speeds, where more than 75% of accidents occur
- ✓ AEB is also effective in mitigating the devastating effects of higher speed crashes

Autonomous Emergency Braking technology is said to be one of the most important developments in vehicle safety and its impact is comparable to that of the seatbelt or airbag. According to Thatcham, 90% of crashes are due to human error and distraction and that is why safety technologies like AEB are not only important, but extremely necessary. One could argue that this statistic not only warrants the implementation of safety technologies, but should also warrant a law that makes it compulsory for all drivers to take [defensive driving](#) courses. Again, it needs to be emphasised that even if your vehicle is equipped with all these safety technologies, you can't afford to let your guard down. At the end of the day, it needs to be remembered that technologies like this aren't failsafe.

Interesting Facts about Autonomous Cars

- Since the 1920's, various car manufacturers have been trying to build autonomous cars.
- The first autonomous car was a 1986 VaMoRs Mercedes van. It could only drive in a straight line though.
- * Two Google Driverless Cars did have accidents in 2010 and 2011. Both incidences happened while the cars were in manual mode though and, therefore, the accidents were ascribed to human error.

A SHORT HISTORY OF THE AIRBAG



Aug. 18, 1953

J. W. HETRICK

2,649,311

SAFETY CUSHION ASSEMBLY FOR AUTOMOTIVE VEHICLES

Filed Aug. 5, 1952

Researchers at Eaton (an automotive research centre) develop an airbag. It consists of a nine to ten foot nylon bag that is attached to a container of nitrogen gas. A sensor is triggered and then a detonator releases the gas into the bag.

GM install an airbag system into 100 000 Chevrolet Impalas. However, only 10,321 airbag equipped cars are sold. As a result, the airbag program at GM ends.

US government passes a law that requires all cars sold in the country to be equipped with either an airbag or automatic seat belts.

Airbag is conceived by John W. Hetrick. He has the idea after a car accident.

Airbag comes standard with all Mercedes-Benz cars.

1952

1966

1973

1986

1990

LATE 1950's

1971

1984

1987

1991

Ford and General Motors begin to experiment with airbag designs. They lose interest and conclude that the idea is too complex.

Ford decides to give the airbag a second chance and to use it in its line of full-size Fords and Mercurys. Plan is derailed by Ford's chief body engineer, Stuart Frey. He claims that there are performance problems in the components intended for mass production.

Mercedes-Benz offers the airbag as an option in its models.

Ford offers an optional driver's side airbag on the 1986 Ford Tempo and Mercury Topaz models.

USA congress enacts the Intermodal Surface Transportation Efficiency Act: Both driver and passenger airbags in all new vehicles by 1998.



10. The Impact of Cell Phones on Road Safety

Many awareness campaigns have been launched to highlight the dangers using your cell phone while driving. Despite these campaigns, people are still using their phones while behind the wheel. However, cell phones, have also contributed significantly to road safety. So, to set the record straight, let us look at both the bad and good points of having your phone with you while driving.

10.1 Dangers of Talking on your Cell Phone and Texting while Driving

A study that was recently released by the Michigan State Medical Society claims that texting while driving makes driving six times more dangerous, and the National Highway Traffic Administration puts cell phone use at the top of the list of driver distractions.

Let's face it; the roads are already dangerous enough with the many existing threats to road safety. So why would you want to make the road more hazardous than it needs to be by texting or talking on your phone while driving? Refrain from texting while behind the wheel and, if you need to make an urgent phone call, use a Bluetooth handset.

10.2 How Cell Phones Have Improved Road Safety

Yes, it's true. Cell phones aren't all bad and, if used correctly, can make a significant contribution to road safety. Cell phones enable us to:

- ✓ Plan our trip and ask for directions
- ✓ Call emergency services
- ✓ Access weather and traffic information



- ✓ Communicate information about an accident accurately and speedily
- ✓ Drive without stress as we know that help is only a phone call away
- ✓ Report crimes in progress or other potentially life-threatening emergencies, accidents, or drunk driving while on the road
- ✓ Report bad driving and drivers who might pose a risk to fellow road users
- ✓ Determine coordinates in accident investigation



Interesting Facts about Cell Phones

- The average mobile phone has more computing power than the combined power of all of the computers that were used for the Apollo 11 Moon landing.
- Scientists have found a way in which to charge mobile phones using urine.
- 250 000 separate patents make up the technology behind Smartphones.
- The fear of being without your phone is called Nomophobia.



11. The Emergency Numbers to Keep Handy

✓ **Nationwide Emergency Response – 10111.**

Dial 10111 from anywhere in South Africa and a call centre operator will assign a Flying Squad patrol vehicle, or contact the local police station to attend to the incident.

✓ **Cell phone emergency – 112.**

For emergencies, you can call 112 from any cell phone in South Africa. You will reach a call centre and they will route you to an emergency service closest to you.

✓ **Ambulance – 10177.**

This number can be used in the case of a medical emergency and can be called in conjunction with both the fire and police department respectively, depending on whether or not there are casualties.

✓ **MiHelp Roadside Assistance – 08 600 767 64.**

MiWay's emergency service provides 24/7 assistance such as:

- Towing to the nearest service provider and safe storage of the car.
- Assistance for flat tyres, flat batteries and keys locked inside the car.
- Assistance when running out of fuel.
- Hotel accommodation if you are stranded more than 100 km from your home.
- Paramedics, nurses and doctors that can guide you through a crisis while you are on the phone or provide general medical information and advice.
- Depending on the situation, an ambulance, rapid response vehicle or helicopter can be sent to the accident scene before transferring you to the closest medical facility.

For all of the terms and conditions concerning this MiWay service, click [here](#).



12. Hang With Us

If you have any more questions regarding reliable car insurance, have any suggestions as to what you'd like to see in the 2nd edition of this Guide, or would like to review your insurance policy - get in touch with us on our [Facebook page](#) or send us a [Tweet](#).

We're also on [Google Plus](#) and [YouTube](#).

We'd love to hear from you!

Need to chat? Either call us on 0860 64 64 64 between the hours of 8AM and 6PM during the week, and 8AM and 1PM on Saturdays or send an [email](#) to the relevant department.

Alternatively, log onto [MiXpress](#) to update your policy – 24/7/365!



13. MiWay Infographic Appendix

Infographic 1: *History of the Car*

- <http://www.historyfacts.info/car-short-history/>

Infographic 2: *History of the Seatbelt*

- http://en.wikipedia.org/wiki/Seat_belt

Infographic 3: *History of the Shatterproof Windscreen*

- http://en.wikipedia.org/wiki/Laminated_glass

Infographic 4: *History of the Airbag*

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14. Sources for Interesting Facts

Interesting Facts about Cars

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