



CAR SECURITY GUIDE

1

Introduction

2

Car Alarms

3

Immobilizers

4

Remote Car Starters

5

Tips

1 Introduction



In 2014 Interpol conducted a study regarding motor vehicle crime all around the world. Each country that agreed to take part in the study was sent a questionnaire. The responses were converted into a report that showed various info such as most stolen car models, transfer route or connection with other crime areas. One interesting statistic was the one about modus operandi or method of operation. It concluded that most vehicle crimes are carried out with non violent methods. This means that the vehicle was not damaged or the owner was not hurt or threatened by the thief. Tricked or robbed maybe, but not injured. Stealing or breaking into a car is a roguish operation that takes place, in most cases, without the owner even knowing about it. And this is why most people don't pay much attention to it. It's a silent crime, there's nothing spectacular about it, the media doesn't even cover car crime that much as there's nothing sensational to report. Maybe once in a while we see a news saying that car crime is either increasing or decreasing. We got used to cars being stolen and we act like it's something normal. About half of the reported stolen cars are found and returned to their owners. One out of two sounds like a pretty good odd but let's dig deeper into this affirmation. A recovered car may be returned to its owner without the audio system, without those new rims, without the GPS system, without all other valuables that were left in the glove compartment or in the trunk. Component parts may be also missing. It can take a while and great deal of money to have a recovered car fixed and ready for use. Not to mention all the hassle with the paperwork and insurance companies. How can we avoid all that? By preventing car crime. We don't need to be superheroes to do that, just some research and a bit of common

sense are all that's needed. And there's another good news: owners can do a lot to secure their vehicles. This short but comprehensive guide covers all there is to know about car security. We'll go through all car security systems, explain how each works, offer guidance on what to look for in a security system and compare them. We'll also give tips on how to keep vehicles safe.

2 Car Alarms



It all started in 1913 with a mechanic who during his time in prison came up with the very first car alarm system. It was something extremely basic but it represented a starting point for car alarms. Nowadays, more than 100 years later, we have different types of advanced alarms. An alarm contains a few component parts: sensors, siren, battery, radio receiver and a control unit. Different types of sensors are installed in the car. The battery makes sure that the alarm will still work even if it's detached from the primary power source which is the car's battery. Radio receivers give owners the possibility to control the alarm with a remote. Sirens give an audio notification. The control unit is basically a computer that processes data received from the sensors and triggers the siren. Classifying alarms is not an easy job because there are numerous criteria. The first thing one should know about car alarms is that there are two main categories: OEM and aftermarket. OEM (original equipment manufacturer) alarms come with the car. Aftermarket alarms are separately purchased and additionally installed by an authorized shop (recommended) or by the car owner (not recommended). The latter is the category we'll be focusing on in this guide but let's discuss OEM alarms a bit before moving on to aftermarket options. An OEM alarm is built into the car when the vehicle is assembled. A smart buyer will also take into consideration OEM alarm when looking for a new car. There are two things a buyer can do: ask the dealer and do research on the Internet. The dealer can tell more about the OEM alarm (when is it triggered, how it is armed or disarmed) and inform the buyer if there are any upgrade options available. The buyer can also look up OEM info for a specific car model with a simple Internet search. There are plenty of people reviewing cars on dedicated forums so finding opinions shouldn't be a problem. An aftermarket alarm offers an extra layer of security but if for some reason buyers decides to postpone getting one they should make sure that the OEM alarm will be enough to keep the car safe.

From now on we'll only discuss aftermarket alarms so we'll just call them car alarms to keep it simple. One way to classify car alarms is the activation method. There are passive and active alarms. Passive alarms are armed when all the doors are locked and the key is not into the ignition. They are labeled as passive because they don't need a command from the user. Active (or non passive) alarms must be switched on manually. This is generally done by pushing a button on a remote. Active refers to the fact that these alarms don't arm automatically like passive alarms. Let's review some pros and cons on both types. It's obvious that passive alarms are more convenient because the car owner or driver doesn't need to remember to put on the alarm. Insurance companies regard this fact as extra security so it's more likely to get a bigger insurance discount when having a passive alarm. On the other hand, a passive alarm can prove annoying at times because it must be deactivated to open the doors or the trunk. This is the main reason for which some people prefer active alarms. Such an alarm doesn't turn on automatically so a person can open or close the doors and the trunk as many times as wished without having to push a button. The only drawback is that the owner might forget to put on the alarm. The good news is that most alarms come with both methods so drivers can switch between active and passive. When it comes to deciding between active and passive alarms the only two aspects to be considered are convenience and memory. The level of protection is given by the alarm's features. Let's review some of the most common features.

- 1** Audio notifications or that noise that wakes up the entire block. They are just as effective as they are annoying. When the sensors are activated, the control unit triggers the siren that emits loud noises. The audio alarm is usually paired up with flashing the lights. It's also possible to activate the siren without the lights and vice versa. It's advised to have both on. This feature is popular because it discourages thieves. The noise and the lights are so annoying that they will draw attention towards the car causing the thief to run away.
- 2** Two way notification system. The audio feature described above is the most basic form of notification. While it's highly effective there are situations when it's simply not enough. A rookie car thief might be scared by the siren and the lights but a veteran one will not lose his head that easily and may even be able to bypass that system. That's where the two way notification comes into play. In addition to activating the siren and light, the control unit will also send a notification to the car owner. This notification can be a simple blinking LED on the remote or detailed info on the LCD screen if the remote is equipped with one. Two way car alarms have certain advantages. Even if the thief bypassed the basic alarm without anyone noticing the lights or hearing the siren, the owner will still receive a notification. The LCD screen will show if the

thief is trying to access the doors or the trunk. Some two way alarms have additional features such as automatic window roll up or engine start prevention. Working range and additional features are to be considered when looking for a two way car alarm. Check out the most popular two way car alarm options here.

- 3** Sensors. The control unit of a car alarm relies on data received from the sensors. In their early days alarms were easily triggered and that was a problem because they would often go on when the car was not in danger. The solution was to develop more sensor types. Switch sensors installed on doors, trunk or any lid are the most common ones. Shock sensors measure the shock received from outside. Close loop sensors observe if a wire is cut. Pressure sensors activate when the inside pressure is modified as the result of a cracked window or opened door. Tilt and motion sensors detect if the car is moved or tilted. Microphone sensors are placed inside a vehicle and monitor any sound change. Radar sensors detect movement around the car. Advanced car alarms use a combination of sensors to avoid false triggers and to offer extra security.
- 4** GPS tracking. This is a more modern system that allows the owner to track the vehicle. It's not exactly a prevention feature but it's of great help in case of stolen cars. The owner can locate the car online or the GPS alarm can send text notifications.
- 5** Smartphone integration. Some car alarms can be controlled with the use of a smartphone app. The advantage over the traditional remote control is that the smartphone is a better medium when it comes to receiving notifications and it can be used from a longer distance.

The more features, the better the alarm but budget is another factor when deciding on a car alarm. Two way notification system, motion sensors, shock sensors and starter kill are the most important features to be considered when looking for a car alarm. Popular brands like Viper or Python are the most common choices.

3 Immobilizers



Immobilizers are devices that prevent a car from starting or moving. There are two types of immobilizers: electronic and mechanical. An electronic immobilizer is a device that doesn't permit the engine to start without the right token or key so car theft by hot wire is out of the question. A car with an immobilizer will have the systems that allow the car to move disabled. When the driver puts the key into the ignition, a component that is part of the key will send a code to the electronic control unit. If the sent code matches the one stored by the electronic control unit, the car starts. This system proved to be extremely effective and lowered car thefts by almost 40%. The good news is that most cars manufactured after 1998 are equipped with an immobilizer so owners don't need to worry about that. It's very simple to check if a car has a built in immobilizer. A simple Internet search will do the trick. Aftermarket electronic immobilizers can be purchased for older car models. The advantage of an immobilizer is that is cheaper than a car alarm and is one of the best ways to prevent a car from being stolen. The disadvantage is that robbers can still break into the car and steal valuables from it. If the owner remembers not to leave any things of value in the car, an electronic immobilizer should be sufficient to ensure a decent protection level for an old car.

Mechanical immobilizers are devices that prevent a car from moving. Different options are included in this category. Steering wheel locks and wheel locks are the most popular choices.

Steering wheel locks have been on the market since 1980. They have stood the test of time because of two simple reasons: price and effectiveness. There's really not much to say about a steering wheel lock. It's basically a metal bar that is mounted on the steering

wheel preventing it and the car from moving. The steering wheel lock is secured with a key that is safely stored in the owner's pockets. A steering wheel lock doesn't have additional features so it's pretty easy to choose one. The material is made of (steel) and key lock are to be taken into consideration. The steel should be of high quality and resistant to sawing or Freon attacks. The key lock needs to have an anti lock picking system. The owner should also make sure that the steering wheel lock is compatible with the car model. The best way to decide on a steering wheel lock is to check out customer reviews. While there are several steering wheel lock manufacturers, The Club remains the most popular choice. The Club products are extremely affordable and have enjoyed positive reviews for over 20 years.

Gear locks are another type of mechanical immobilizers. Just like steering wheel locks, they prevent car theft by making it impossible to move the car. A gear lock device is secured with a key. There are different types of such locks. Shifter locks are mounted directly on the shifter preventing gear shifting. Handbrake to gear devices lock both the shifter and the handbrake. These two types of gear locks are even cheaper than steering wheel locks and offer an inexpensive extra protection level. There are also gear lock systems that are installed in order to be invisible. Gear locks are available for both automatic and manual cars. It should be noted that no gear lock device alone can replace a car alarm system.

It's impossible to discuss motor vehicle crime without mentioning wheel theft. Some thieves may only be after tires or rims. It's no secret that wheels and rims, especially custom made ones, can be pretty expensive. Rim theft is as big of a threat as car theft. Luckily, there is a way to prevent it. Wheel locks are mechanical devices installed on rims making it impossible to remove them without using a special key. These wheel locks replace the default lug nuts. Wheel locks are very cheap and they're the best way to secure a new set of rims. The only disadvantage with wheel locks is that there are so many models on the market so car owners may feel overwhelmed when making a choice. Just like with steering wheel locks, the best recommendation is to stick with the tried and trusted brands. McGard and Gorilla Automotive make the most marketable wheel locks. Price is no big issue as wheel locks are cheap anyway, even the ones from consecrated brands. The only thing to consider when buying wheel locks is compatibility. There's no excuse for someone who just got expensive tires or rims not to secure them with wheel locks.

Wheel clamps are mostly used to discourage unauthorized parking in crowded urban areas but they can be a pretty popular choice for large vehicles such as caravans. Most people opt in for a wheel clamp to secure their caravan while camping. Secure has a double meaning here. The first one is to secure the caravan by keeping it in place on an incline. The second one is to prevent it from being stolen. Caravans are used for trips and camping and most of the time they are parked in a garage where thieves cannot reach them. Owners might not feel the need to get an alarm for something that is mostly kept safe. In this case, a wheel clamp is the most basic inexpensive way to secure a caravan.

Immobilizers are not better than car alarms but they are a very cost effective way to increase a car's safety. As the name suggests, their sole purpose is to prevent a car from being moved. There's nothing stopping the robbers from breaking into the car and stealing valuable things like the audio system.

Now that we know about all methods that can be used to prevent car theft and robbery, it's time to make a choice. We already decided that a car alarm is a must and an immobilizer offers extra protection at a cheap price but there are many choices in each category so a final decision is still hard to make. The insurance cost for a car gives us a pretty good idea on what security systems to prioritize. The more security systems a car has, the lower the insurance cost. The following list shows us what systems are considered the most secure by insurance companies.

- 1 Alarm and electronic immobilizer. The alarm's features list should include ignition detection, tilt sensors, glass break sensors, two way notification system and additional battery. Basic features like siren and lights flashing are a standard for all car alarms. Passive alarms are preferred by the insurance companies but in the end it all depends on the car owner's personal choice when deciding between an active or passive alarm. The electronic immobilizer is built in on most cars manufactured after 1998. It's possible to install one on older models.
- 2 Electronic immobilizer.
- 3 Mechanical immobilizers that prevent the car from moving. Steering wheel locks and shifter locks are included in this category.
- 4 Mechanical immobilizers that prevent component parts from being stolen. Wheel locking devices are included in this category.
- 5 Tracking and recovery systems. Some alarms have an integrated GPS functions that helps the owner and the police locate the stolen vehicle.

Insurance agents ask owners different details about the car's security systems to calculate the insurance costs. There are alarm features that decrease the insurance cost so owners are advised to look up all features to make sure they get a good deal on the insurance. The above list gives us a pretty good idea about the best car security systems but there are some products that also offer convenience.

4 Remote Car Starters



A remote car starter is a system that starts a car. Extended functionality allows remote car starters to also put on the heating system, lock and unlock door. It's a nice addition that became widely popular because it offers great convenience. No one likes a cold car early in the morning or a hot car that sat in the sun all day. Car starters put on the heating system in advance so the owner doesn't need to wait in the car for the temperature to reach a comfortable value. Some vehicles come with a built in remote starter or one can be additionally installed after purchasing the car. A remote starter has come to be associated with a car alarm. There are systems that provide both an alarm and a remote starter. Basic remote car starters offer features like doors and trunk lock and unlock and heating system control. Advanced ones can be used on multiple cars, have a LCD screen to display info and offer more than basic functions. Let's list some of the extra features offered by advanced systems.

- 1 Two ways remote car starters. This works just like a two way car alarm notification system. The remote car starter system sends notifications to the user. Let's imagine this situation. A person wants the car heated before leaving from work. The signal to start the heating system is sent but is there a way of knowing if the remote car starter received it? Yes, if the remote car starter has two way paging. The car owner receives info such as interior car temperature, if the engine is on or off and if the doors are locked or unlocked.

This two way system is helpful because it also alerts users in case they forgot to lock the doors. If the remote car starter is paired with a car alarm the notification system will allow the user to receive security status updates.

- 2** Smartphone control. Two ways systems work as long as the car and its owner are in a certain range. Newer remote car starters can be controlled with the use of a smartphone. The biggest advantage in this case is a considerably longer range.
- 3** Additional heating options. Some remote car starter systems don't just turn on the heat. The seats can be warmed up and the windows defrosted in advance.
- 4** Keyless entry. If the car doesn't come equipped with a keyless entry a remote car starter with this feature is a pretty handy option. Even if the car has such a system it can be annoying to use a separate key fob to operate the doors.
- 5** Security system. There are systems that provide double functionality: car alarm and remote car starter. We saw that a car alarm is of maximum importance so why not get a system that takes care of two things at a time? Viper has a good solution for those looking for such a system.

Here are some tips worth knowing before purchasing a remote car starter.

- 1** Working distance or range. This is probably the most important thing to consider when looking for a remote car starter. Cars owners should think about the situations in which they will use the remote car starter system. Is the range long enough to cover the distance between the house and the garage or the work building and the parking spot? What about when going to a restaurant, to the movies or when visiting a friend. It should be noted that the range specified on the box is measured in ideal conditions with no walls in between or interference. Range is not a factor that influences the price that much. A longer range than initially planned will prove extremely useful.
- 2** Price and/or brand are good measures of quality. This doesn't mean that a quality remote car starter will cost an arm and a leg. There are basic car starters from trusted brands that come at very affordable price. The price goes up as the features list expands. Extra functionality costs more. Here are some example of remote car starters in various price ranges.

- 3** Choose a professional authorized shop to install the remote starter on the car. The car's warranty will not be canceled by a correctly installed system. Be wary of shops that ask for a very low price. Asking around doesn't hurt either. Maybe a family member, friend or coworker can name a place. Once again, the Internet can be of great help. Most local businesses have a social media page to advertise their service. Look it up to see what other customers have to say.

We'll wrap this up by saying that not all remote car starters can successfully replace an aftermarket alarm. Car starters can put an extra layer of security over the OEM alarm but a car equipped with only a basic car starter is not considered secure. Car alarms keep the car secure, the remote car starter is just a convenient addition. Luckily, there are products that mix security and convenience without making any compromises. Viper is one of them.

5 Tips



We reserved the end section of this car security guide for some general tips.

1. Parking the car in a personal garage will greatly increase its chances of not being stolen. This seems obvious but surprisingly a great number of people who own a garage still decide to leave their cars parked on the driveway or on the street overnight. They probably rely on the alarm or on the fact that they live in a peaceful neighborhood or simply don't consider car crime such a big issue. No alarm system is 100% theft proof, no area is 100% crime free and we already saw that car crime is a serious threat. Nothing should be left to chance. If someone has the possibility to park the car in a garage they should take full advantage of it. It is indeed convenient to have the car waiting in front of the house in the morning but it's also extremely risky. Sometimes the garage is used as storage for old things. Are those things worth more than the car? Probably not so it's a good idea to use the garage for its intended purpose.
2. A garage should be secured as well. Add some lighting if it's missing. Garage alarms are extremely affordable. Automatic garage doors offer both convenience and security. It's worth considering these two options. Often robbers use the garage as an entry point into the house. A secured garage will not only ensure the car's safety but also provide extra security for the entire house.

3. When parking in a garage is not possible a good quality alarm should be installed on the car. The truth is that not everyone has access to a garage and there are crowded areas where even parking spots are a problem. In this case, an alarm with multiple features is a big necessity. An electronic immobilizer along with mechanical immobilizers for extra protection are highly recommended.
4. Keeping the car safe while traveling. We'll cover various situations here. Obviously, the best thing to do is to lock it up in a safe garage while out of town. If a personal garage is not an option maybe a friend or family member can help out. If the car is left on the street, consider parking it in a illuminated spot with plenty of traffic. Ask a friend or a trusted neighbor to keep an eye on it if possible. When traveling with the car, check ahead for parking options. If the hotel has its own parking spot that's the best (and most convenient) parking space. If this is not an option, park the car as close as possible to the hotel and maybe somewhere where it can be seen from the hotel window. Unfortunately tourist areas attract thieves. People feel relaxed and untroubled while on vacation so they might forget about car security. Mind the pickpockets, store the key in a safe place and don't leave valuables in the car in plain sight. Car thieves usually avoid secured vehicles so consider getting a mechanical immobilizer. Thieves will see it and it will cross their mind that he car has other security systems too so they'll steer clear from it.
5. Budget management. We know that this is a big factor when deciding on a car security system. Basic car alarms and immobilizers come at a very affordable price. Advanced car alarms with many features are expensive but also worth it. Before going for the cheapest product from a shady brand let's imagine for a moment that the car disappeared from the where it was left overnight. What do we do first? Call the police, call the insurance company. Then we start to worry about how are we going to get to work or take the kids to school. A solution to these issues may not be easily found on the spot. We can manage maybe for a few days but in the long run it's nerve wrecking. The truth is that we depend on our cars and it makes perfect sense to invest in something we need.