

## Escaping the Kill Zone (Ramming)

Imagine your protection detail traveling en route when around that blind turn, the one that you advanced so well but could not avoid, several cars suddenly pull out and block your path of travel. The only difference from the picture above to this hyperthetical situation is that the picture above is a common training exercise at Tony Scotti's Advanced Driving & Security Inc. and in the real world behind these two cars would stand some pretty serious criminals with big guns. You would only have seconds to make a life or death decision. Seconds count when in the kill zone, your first decision better work because it could be your last.

History shows us that the majority of attacks are conducted in and around vehicles. The reason for this is simply the target is much more vulnerable in the car and the car is a much easier target to penetrate. Even with top-notch threat detection and pre-planning there will be some degree of vulnerability in your daily travels. The attackers will be looking for your weak points. For a variety of reasons even the best protection agents cannot avoid these areas. The terrorist will have superior knowledge of this terrain and never plays by the rules; therefore they possess the capability attack at will.

A well-trained driver will get the car moving and keep it going as long as they can. Your car is the best weapon until you cannot use it any more. Just because you are blocked in does not necessarily mean you cannot use your car to escape. There is always the last resort option, which would be to ram your way through a barricade. If this tactic is done correctly it can be very successful. Ramming a vehicle out of your path of travel should never be sort after as your primary escape route. This technique is only used if all else fails or you are left with no other escape route; a life or death option.

Ramming your way out of the kill zone could cause damage to your car and generally takes longer than backing up or driving around the barricade. Therefore, keep in mind that ramming through a barricade should be used as a last resort when all escape routes are blocked. If proper technique is used you will be surprised that this technique can be quite successful and cause minimal damage to your vehicle. The first step is to stop your vehicle approximately 10 – 15 feet in front of the barricade, very briefly letting your attacker think you are going the other way or giving up. This will cause the attacker to put his guard down a little bit since he starts to think this attack will be easy. As soon as you stop shift your car to the lowest gear and hold the gearshift lever firmly in place, since under pressure it could pop out of gear. Put your foot on the pedal and do not let up. Your vehicle will make contact then push the barricade out of the path of travel.



Vehicle placement is critical. You will need to place the frame of your car, the most solid part, directly into the axle of the barricade vehicle. You will begin to move the barricade since your car is able to build enough force to push the barricade cars out of the way. What is actually happening is that the amount of force that your car has generated is being applied to the only part of the barricade vehicle that is connected to the ground (tires).



After you initially hit the vehicle and break the barricade vehicle's traction you are on your way, making sure to leave your foot on the gas pedal and not let up.



It will be quite surprising the first time you actually try this technique. If done properly it is very effective and a relatively easy technique to learn. However, many things could happen that would alter your success.

First of all in the real world bullets are flying, adrenaline is pumping and the potential for mistake is greater. The only real cure for adrenaline is practice. When your driver is confident in performing these techniques the escape will be a simple muscle memory response rather than a full panic and pray situation. Trained drivers would hopefully not experience problems caused by driver error such as:

- Slowing down after your initial hit. We find that this is a popular first reaction. This will cause the your car to lose it's pushing power/momentum and make it tough to finish the job. You would not want to get stuck, wedged between these two cars. If you did get wedged in you would just start shaking the steering wheel, as this would hopefully cause your car to break loose.
- If the driver inputs too much speed it will cause the cars to collide at a higher speed, obviously causing more risk of injury and damage to you and your vehicle. The object in any attack is to escape quickly and get your principal to a designated safe haven. Colliding at high rates of speed could damage your car to the point of mechanical failure, which would defeat the purpose of trying to escape in the first place.



ADSI would like to thank Mike S. (One of our security instructors) for playing stunt man and crashing into this barricade at about 35 MPH. Yes, making an accordion out of this old Cutlass

seemed to be a lot of fun for Mike. Of course, this picture was staged for your viewing pleasure. (not a correct technique)

Unfortunately, even well trained drivers may run into more technical problems that need to be addressed. Using the Ramming Technique with a newer model vehicle has become a feared maneuver due to the possibility that the airbag could deploy. First of all keep in mind that this technique is a last resort tactic, therefore, you are in such a bad situation that you only have one last chance. After we establish this mindset there are two more issues to deal with. The airbag deploying at this stage of the attack is the least of your worries. Yes, it is a violent explosion and injuries can occur, however, it beats getting shot. The real problem is that after the airbag deploys most vehicles will become disabled. If this happens all of your efforts will be wasted because the vehicle computer will need to be reset. The technique for resetting the computer differs between vehicle models. So before we worry about the computer lets step back and begin to analyze this problem. It may not be as bad as one would expect.

First of all the airbag is a supplementary device used to distribute the occupants force more evenly and help the seat belt stop the occupant more gradually in a frontal crash. Although this force varies, most vehicle manufacturing companies say that a vehicle has to have an impact that generates at least 7 G's before the airbag will be released. An example of 7G's would be similar to driving into a brick building at 9 to 15 miles an hour. Remember the building has no give therefore the airbag will deploy. However, if the obstruction gives way, which would mean that energy is being dissipated between your vehicle and the other object, there would be a chance that the force generated was not great enough to actually activate the air bag. In simple terms, the airbag is designed to deploy when the occupants are in danger of hitting their heads or bodies against the dashboard or steering wheel. Chances are the airbag may not deploy if the forces generated are not great enough.

The reason for this is simply that the airbag will inflate only if your vehicle's rate of deceleration is above the system's designed "threshold level". Inflation is determined by several factors such as the angle of the impact as well as how quickly the vehicle is decelerating during impact. It would be really nice to know how sensitive your vehicle's airbag sensor's threshold level is. Theoretically, if you could ram at a lower force than your car sensors could detect, then ramming would be an easy maneuver to perform. Unfortunately the realistic answer is that the threshold level varies between vehicle model and air bag sensor control systems, not to mention the fact that every year a more sophisticated system is introduced to the market. Currently there are several sensor systems being used on the market today.

The most popular systems are the "electromechanical gas dampened ball and tube design", a "spring and mass design"; the "Rolamite" and some manufactures such as some Toyota models and Jaguars use what is called a "mechanical system". Each one of these design's senses rate of deceleration and activates the bag in a slightly different way. To make things more complicated some of the newer vehicles are being developed with very advanced technology where there will be a "safety or severity sensor". This is basically a sensor that double-checks the main sensors in front of the car. The front of the car may be decelerating quicker than the passenger compartment, therefore, the severity sensor will determine the deceleration rate in the passenger compartment and decide if it is severe enough too deploy the airbag. So technically you could figure out how much force it would take to move two cars out of your path of travel. You could even figure out the maximum speed you could travel without deploying your airbags.

The difficulty comes into play because of the varying factors. Things like the weight of the barricade cars will vary in the real world or how much force will it take to move a van vs. a Mustang. What surface will the attack happen on? Dirt will give you a much better chance than concrete for the simple reason that it will take less force to break traction of the barricade vehicles' tires. Not to mention all the airbag sensor variables I have already mentioned. It would be very difficult for a bodyguard team to plan the success rate of this technique unless all of these factors where covered prior to deployment.

To answer the question can the ramming technique be accomplished with an airbag-equipped car? The answer would be maybe. If the driver could approach the barricade with enough force to move the cars but without exceeding the vehicles air bag sensors threshold level than in theory "yes" the technique will still work. Remember even if all variables are perfect the airbag is a mechanical device and there will never be a 100% guarantee that it will not deploy. The more stationary the barrier is the less chance you have of getting through. Therefore, hopefully the terrorist will use vehicles to block your path of travel; this is a benefit since the barricade will not be a permanent fixture. It does not take much force to push a vehicle sideways once in motion. Also remember if you are put in this situation taking an educated guess/chance may be better than the alternative.

To see these ramming techniques in action check out our training videos at [www.ladsi.com](http://www.ladsi.com), look under the pics and movie menu.

(This conclusion was deducted from all secondary data sources and this information is only as accurate as the sources used. The airbag and their

sensors are only as operational and sensitive as their control systems. This rate could vary between manufacturers and even vehicle models. If this subject is of interest to you, keep an eye out for future articles where I will conduct some of the math equations demonstrating the theories written about above.)

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