



Autobraces 2

Tactics and Strategies for Vehicle Stabilization

HJR Equipment is proud to offer you this complete training tool on the tactics and strategies of vehicle stabilization. This document was developed as a result of years of training in the vehicle extrication field. HJR Equipment and its technical staff know that equipment alone does not save lives. Properly trained rescue personnel with the best equipment available provide for the best outcome. We at HJR Equipment take training very seriously and we hope this document provides you with the education, strategies and tactics necessary to perform efficient and effective vehicle stabilization.

For years, fire departments have looked at different ways to stabilize vehicles involved in accidents. Many of the ways to make entry were classified as “Out of the Ordinary” entry points. Fire departments looked at many different circumstances where cars were on their roofs, on their sides, on guardrails or up against a tree or pole. For years vehicle stabilization was an afterthought, mostly as we were sitting around the kitchen table after the call saying “Man we were lucky that car didn’t rollover on us.” Now that

you have purchased the Autobrace2, you have a system that will stabilize most any vehicle and you will never have to wonder again “What would have happened if ?.....”

Vehicle stabilization is something we all know needs to be accomplished before we begin to work on the car. Yet many of us have made up all kinds of excuses as to why we didn't stabilize a vehicle. We have heard them all and may have even used some of them ourselves over the years.

“It was an easy rescue and we were only going to be around the car for a few minutes.”

“I used cribbing instead of the struts, it will work just as well.”

“The car was leaning against a tree, where was it going to go.”

“The tow truck driver hooked a chain to the side of the car, it wasn't going to fall on us.”

“The wood was too long or too short to use so we just didn't bother cutting the right size.”

“The rescue jacks take too long to put up.”

“The rescue jacks are too heavy to carry all the way to the rescue site.”

Do any of these sound familiar to you? We are sure many of you can relate to some, if not all of them. Most of these excuses are a result of the firefighter either being lazy or not properly trained on the equipment or the strategies and tactics of vehicle stabilization. Either case, they are easily fixed by properly training your people and providing a good command structure at the scene that will enforce your Standard Operating Guidelines (SOG's) on the use of the Autobrace2 kit. Most simple vehicle stabilization scenarios shouldn't take firefighters any more than three to five minutes to complete. If it takes your firefighters ten minutes or more to stabilize a simple vehicle on its side, then you need to reevaluate your SOG's, training or techniques. All bets are off when you have a more complex rescue scenario involving two or three vehicles or vehicles on top of one another. These require a little more planning and a lot more ingenuity. Many times

these more complex rescues may require more equipment than the standard two or three strut vehicle stabilization kit contains. Thinking “out of the box” becomes necessary to stabilize all of the vehicles involved. Often times these scenarios require six or even eight struts to accomplish the goal.

We at HJR Equipment have been involved with vehicle stabilization for many years, we have designed, tested, redesigned and now finally produced the Autobrace2 vehicle stabilization system. The Autobrace2 system is patented and is the best all around vehicle stabilization system on the market today. We truly believe the key to getting your firefighters to buy into using a system is it’s ease of use. The system has to be light weight and easily transported to the rescue site. It has to be able to be used in the dark or with very little light. It has to be somewhat preassembled in a carrying case and has to have very few steps involved from start to finish. You must have a user friendly system in order to have “buy in” from your firefighters. The Autobrace2 is the most user friendly vehicle stabilization system available today.

Vehicle stabilization should be performed anytime you feel the vehicle or vehicles are unstable and may collapse, move or shift causing harm to your rescue personnel and / or victim(s).

This is a very simple yet descriptive definition of what vehicle stabilization is all about. It states what we have to do “Stabilize a vehicle ***anytime*** we think the vehicle may move.” It also states why we do it “To protect number one, our rescue personnel and number two our victim(s). Now that we know what it is and why we do it, lets take a look at the characteristics of vehicle stabilization and the Autobrace2 system.

Vehicle Stabilization Systems

We briefly spoke about some of the issues we felt were necessary in a good vehicle stabilization kit. Now let’s take a closer look at the Autobrace2 vehicle stabilization system. This system is capable of providing all of your stabilization needs for the following situations:

Vehicle Stabilization

- Passenger Cars
- Pick Up Trucks
- Vans

- Light Commercial Trucks
- Light Farm Equipment
- Small Airplanes
- Recreational Vehicles

- Overhead (Garage) Door Stabilization
- Overhead (Rolling) Door Stabilization
- Stabilize a Fallen Tree
- Stabilize a Utility Pole (after you are sure the electric is off)

Although the primary use for the Autobrace2 is for vehicle stabilization, we can also use these systems to keep an overhead door from coming down on us in a fire. There is a video of a firefighter getting trapped in a garage after the garage door came down during a fire. Have you seen the video? We can use these stabilization kits to keep these types of doors from coming down on us. Whether it is a standard garage door or an overhead rolling door, we can protect our firefighters from these hazards with a simple stabilization strut. All you need to do is install the strut in an upright position and hold the door in place. I recommend using one of the straps to hold the bottom of the strut to the door rail to avoid the hoseline or another firefighter kicking the strut out from under the door.

We can use these systems to stabilize trees and utility poles when necessary during rescues. When you have a tree or a utility pole on a car, we can use the strut system to stabilize the hazard or if necessary actually lift the tree or utility pole. Caution must be taken to assure there is no electrocution hazard before attempting to stabilize a utility pole

Stabilization System Overview

HJR Equipment truly believes the best system for most fire departments is a four strut system. Our thoughts regarding this statement are this: a four strut system gives you the ability to stabilize one vehicle in a three or four point method. The four point configuration utilizes two struts on the top side of the vehicle and two struts on the underneath side of the vehicle. Some may say this is overkill, while it may be, the car is not going to move. Having four struts also gives you the ability to stabilize two vehicles on the scene at the same time with two struts on each vehicle. You will use one strut on the top side of the vehicle and one strut on the underneath side of each vehicle. This is not ideal but can be done when

needed. You want to make sure you place the struts opposite of each other when using the two strut configuration. HJR Equipment recommends placing two ratchet straps on each strut during the two strut set up. If you do not place the struts opposite each other you will simply spin the car around and not gain any stabilization. If you have the ability and room for storage, having six to eight struts is ultimately the best. This way you can place a three or four point configuration on two cars and be totally assured of no movement on either car. Most fire departments can only find room for a four strut system and most cannot find the budget for a six or eight strut system. Any configuration you can place into service will be better than no system at all.

When we discuss the different techniques and how to use them we must start at the beginning. This is when we first arrive on the scene and see that we have the potential for an unstable vehicle. The list of situations we may encounter can be endless as well. Some of the more common situations could be

- A vehicle on its side
- A vehicle on its roof
- A vehicle on top of another vehicle
- A vehicle on a guardrail
- A vehicle against a tree or utility pole
- A vehicle with a tree or utility pole on top of it

As we stated this list could go on and on but this is a good start to the different situations we may encounter during a motor vehicle crash. When we arrive on the scene and find one of these situations, we must first “Read the Wreck.” Reading the wreck simply means doing a good size up and walking around the vehicle(s) to develop a plan of action to get the victims out of the car. When we “Read the Wreck” and figure out we need stabilization, this makes the job of creating an incident action plan (IAP) a little harder. When creating the IAP, we must first decide how and where we want to remove the patients before we place the stabilization system on the vehicle. Many times fire departments position the stabilization system on the vehicle and find the only pathway to remove the patient is now blocked by the stabilization struts. You then have to remove the struts and place them in a different position. We can avoid this problem by reading the wreck and creating a good IAP that incorporates the stabilization equipment

and also provides for a good clean area to remove the victims. No two situations ever seem to be the same, but with well thought out SOG's and good training, vehicle stabilization should be something we can do quickly and efficiently.

Four Strut Stabilization Techniques

One of the typical scenarios that we encounter when stabilization is necessary is the vehicle on its side. Most cars when they are on their side are going to want to roll onto their roof, not back onto their wheels. This is true provided the car is resting on a level surface and not on a hill or incline. With that being said, we want to think about starting our stabilization on the side of the car that it will most likely want to roll. The next thing we want to look at is the pathway for patient removal. During this type of incident, there are several pathways we can use to get the patient out of the vehicle. We can remove the patient through the front or rear windows. We can flop or completely remove the roof and take the patients out from the top of the car. We can also cut out an area on the under side of the car and remove the patient from this area. All of these choices may be applicable but each one requires us to place the stabilization struts in different areas to achieve the goal.

With the car on its side, during a four strut stabilization deployment, we will place two struts on the top side of the car and two struts on the bottom side of the car. If we plan to remove the patient through the front windshield of the car, we can not place the stabilization strut on the A post of the car. We will need to place the front strut somewhere near the front of the car most likely in the area where the hood meets the fender. This is a solid area to place a strut due to the fact that the front fender is most often connected to front upper rail and this area provides us with a good anchor point. By placing the strut in this area you keep the front windshield area open for patient extrication. On the rear of the vehicle, you can place the strut near the C-post or on in the area where the back fender meets the trunk lid. On the top side of the vehicle there are fewer areas to choose from for anchor points. The two struts we place on the underneath side of the car can be placed toward the front and rear of the vehicle. There are always good areas to use as anchor points under the vehicle. There are several methods to secure the strap to the car. We want to keep this simple yet informative for you, going over all the ways to attach the ratchet straps would take forever. The bottom line is you must have at least one strap on each strut to complete

the system. Secure the strut to the car either by connecting to strap to the car itself or connecting two struts on opposite sides of the car together and tightening the strap. This will secure the struts in place and not allow for any movement of the car or the struts.

Three Strut Stabilization Techniques

Using three struts to stabilize a car is a very good utilization of resources and time. You can save yourself some time by eliminating one strut from the setup and still provide good stabilization of the car. The strut you eliminate is the strut on the under side of the car. You place two struts on the top side of the car and one strut on the bottom side of the car. The two struts on the top side of the car will be placed on the outer portion of the front and rear of the car while the strut on the under side of the car will be placed in the middle of the vehicle. This is a good setup and reflects on the fact we stated above, most vehicles will want to roll onto their roof instead on back onto their wheels. By placing the struts in this configuration you provide good stabilization and you are not allowing the car to roll onto its roof.

Two Strut Stabilization Techniques

Using two struts to stabilize a car is satisfactory but not what I would like to see done on a routine basis. It is a good utilization of resources and time and can be a useful technique if you have four struts and two cars that need stabilized. The setup of this technique is very much like all the others, you place one struts on the top side of the car and one strut on the bottom side of the car.

CAUTION - you must place these struts directly opposite of each other. Otherwise you will spin the car and not create a situation in which the vehicle is stabilized.

The two struts should be placed somewhere towards the inner portion of the front or rear of the car. (1 strut on the A-post or C-post area and 1 strut directly opposite of it on the under side of the car.) This is a

satisfactory setup and it will get the job done but it leaves room for error if you do not get the struts opposite of each other. By placing the struts towards the middle of the car you will gain the most stabilization possible.

The Vehicle on its Roof

When you encounter a vehicle on its roof, the majority of the time it is going to be resting with the hood or engine compartment on the pavement and the rear of the vehicle sticking up in the air. The reason this happens is because the front of the car has the engine in this location and weights the car down in the front. Just like any incident we want to start by reading the wreck. In the scenario we created above you want to stabilize the rear of the car. You can do this and take the patient out the side of the car or the rear of the car. More often than not you will not be able to use the front of the car for this due to the fact that the car is resting on the hood.

This basic instructional document only scratches the surface of vehicle stabilization and is in no way intended to make you proficient at it use. This instructional document is meant to give some very basic information on stabilization techniques. If you are not familiar with stabilization strut use, consult with the professionals at HJR Equipment or your local distributor.