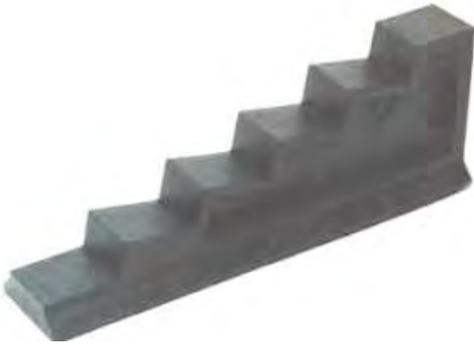


Stability Techniques:

We all have our personnel preferences on what we like to use, or we like to use the same equipment we have made do with for many years, or maybe because that is the only equipment carried on our appliances. This is a page to broaden our thoughts on what and why we do things and question why we use the same old equipment.

What is vehicle stabilisation: Vehicle stabilisation is the prevention or stopping of any movement in any direction of a vehicle following a collision where a casualty is still in situ, or in some cases there may be no one in the vehicle but it has landed in a precarious position which could put others at risk from further movement.

After an impact the vehicle will be in contact with the ground in some form or another and the area in contact with the ground can be measured in square inches, the idea of stabilising the vehicle is to increase the surface area in contact with the ground by the use of various pieces of equipment such as step blocks, blocks and wedges, Acro props and various types of hydraulic systems.



An example of such equipment can be seen in the above diagrams.

There is often some debate about what to use, here we will focus on a vehicle on its wheels. Do we use step blocks or small blocks and wedges. Lets look at some of the advantages and disadvantages.

StepBlocks

Blocks and Wedges

Advantages	Disadvantages	Advantages	Disadvantages
Quick and easy	Can create a trip hazard	Creates a very sturdy base	Takes a bit longer to use than step blocks
Can chock a large gap	If used upside down tend to slide out	Sits nicely under the vehicle out of the way	Limited by the number carried
Can be interlocked	Will still need a wedge to fit tightly	Can be used in small spaces	Many are needed to fill the larger gaps
Used either upright or upside down	Easily knocked whilst working around them	Reduces a trip risk	
	If not thought out, they can compromise the extrication plan by becoming an obstruction	Will give a greater surface area coverage	

The above is a list of some of the differences between the uses of the two, and is aimed to give you something to bear in mind, remember they are both very useful in the right environment and can complement each other greatly. Obviously the situation will dictate what we use to best stabilise the vehicle, on some rare occasions it may mean using other pieces of equipment all together, a way of thinking is that the vehicle is either stabilised or it isn't, regardless of what we use.

However once we have stabilised the vehicle try to avoid having to remove blocks at a later stage during the extrication, unless the type of techniques to be used have considered this as part of the plan, and not through bad planning and having to remove the blocks by misadventure.

As with all RTC's there is a time issue and this must not be overlooked by over cautious stabilisation techniques, keep it simple and fast but use the right equipment for the situation you are faced with.



You can see in the above pictures the difference between the two types of equipment used with regards to trip hazards etc. Both sides stabilised ready for a dash roll. You can see on the right picture that there is also a risk that the rear door may come into contact with the rear step block, it would perhaps have been better placed at an angle, and this picture is just for training purposes.

Do we use a step block upside down for speed and to remove the need to use a small wedge or is it due to laziness and lack of caring? This is a regularly visited topic and has been observed many times at incidents.

The step block is designed to be used the right way up for best results but as we all know can also be used upside down for many other situations, but in this context we are looking at a vehicle on its wheels.

If used upside down, we are not increasing the surface area of the vehicle with the ground because the vehicle is just touching the angle of the step block instead of the flat step if it were the right way up. There is also a greater risk from the step block sliding out from under the vehicle.

Do we use them in this way for ease and speed, or because we don't want to spend those few extra seconds using it the right way up with a wide wedge, a wide wedge is used because we want to maximize the surface area in contact with the vehicle and the ground

With a narrow wedge we are not maximizing the amount of surface area in contact with the ground. We may not carry enough wedges so we may well have to make do with a narrow wedge or perhaps use two narrow wedges next to each other, as with everything in the fire service we may have to improvise with the equipment we have available at the time. (The use of a narrow wedge on the bottom could cause the block to become unstable in itself) so place it on top.

Another very good use for a step block is to put one under the rear of the vehicle in the area of the spare tyre; this offers extra stability where a casualty is being removed out over the luggage area of the vehicle.

Remember keep it simple and effective, create the largest surface area possible with the equipment you have, do not over complicate stability by over engineering what needs to be achieved, this will just waste time.

Side Resting Vehicle:

A vehicle resting on its side can pose significant issues for the rescuer, the main being casualty access in a potentially very unstable situation. How much do we need to carry out in order to get medic access to the casualty.

Do we fully stabilise the vehicle first, how much time will this take, there is a casualty needing medical intervention with a potentially compromised airway, how much time do they have?

Is manual stability acceptable? Its a token gesture that offers minimal controls, however it allows access to the casualty possibly saving a life.

Once we have access full stability can continue, with a full crew on scene casualty access and stability can both happen simultaneously so ideally manual stability is actually for a minimal amount of time, but allows that crucial access to the casualty.

Side resting stability can be carried out using the many types of stability props available today, too many to cover here. The main point is that the use of such equipment must be used in the manner in which it was designed and applied correctly so as not to hinder vehicle access and block extrication paths. All gaps where there can be a potential for structural instability or collapse must be packed. In some cases depending on the situation vehicles can simply be secured to other vehicles or objects with the use of ratchet straps.

