

Plate Carrier Setup: Ensuring Your Safety in All Situations.

Introduction.

In high-risk situations, you could be facing varied threats and ensuring that you have the right plate carrier setup could make the difference between getting injured or getting clear. Modern body armor systems are defined by the customization that can impact the plate carrier. The Plate carrier fit and the protection offered by the inserts can be altered to give you confidence in any situation, but creating the best plate carrier setup is a fairly precise art.



Shellback Tactical SF Plate Carrier

If you find yourself in a tight spot, it's always reassuring to know that you have the equipment to give you the edge, but with so many possible variations, hitting the sweet spot of protection against weight and manoeuvrability is often a real challenge. In this article, we will look at what carrier plates do and how to set up a plate carrier for a range of different potentially hostile situations.

What is a Plate Carrier?

In simple terms, a plate carrier is the structural part of a tactical vest, to which armor plates can be added to offer protection. Typically constructed from high-quality nylons and polyesters, plate carriers have integral pockets for supporting and positioning armor plates. The armor plates themselves fall into four, broad, material categories.

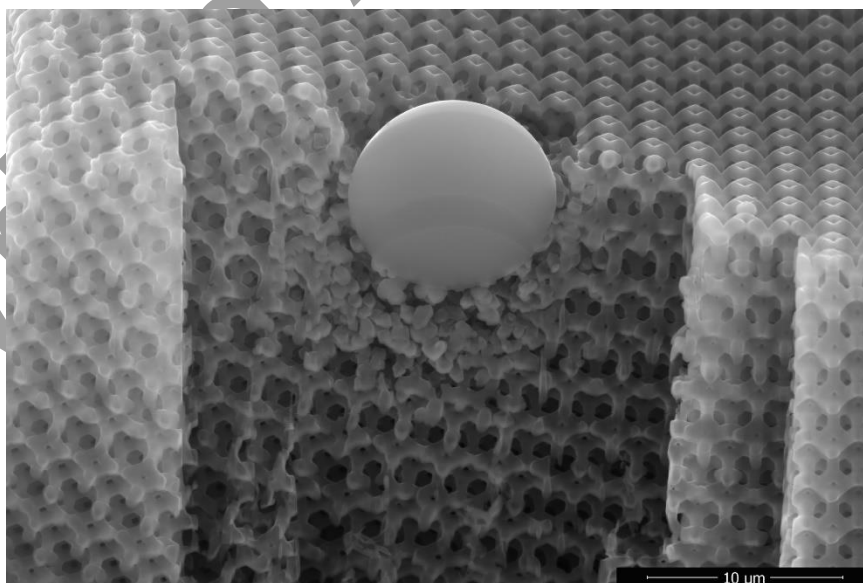
- **Metal.** The traditional choice for stopping even the largest rounds, metal has excellent rigidity and energy-absorbing qualities, but they come at the price of significant weight increase. Metal plates can comprise a huge number of alloys including steels plate, titanium and aluminum alloys that offer an array of properties. Steel plate is generally least favored because it tends to deform less than either titanium or aluminum under

applied force, thereby generating a much greater and potentially debilitating pulse through the metal and into the user.

- **Ceramic.** Modern-day engineering ceramics are typically based on metal or semi-metal oxides such as Magnesium Oxide (MgO). These materials are almost universally composed of the ultra-strong ionic bonding mechanism which makes them extremely hard and difficult to fracture. This unique structure makes ceramics ideal for high stress impact situations where a thinner section of armor is capable of deflecting very high energy rounds, including tungsten core penetrators. While Ceramics are very tough, they tend to fracture under high-velocity impacts and can become ineffective in multi-hit situations.
- **Polymeric.** Otherwise known as plastics to you and me, polymers encompass a huge variety of lightweight materials. Polymer plates are generally based on ultra-high molecular weight fiber weaves that absorb impact and disseminate energy in lower-weight and velocity rounds.

One of the most exciting materials in this class are variations of the ultra-high-molecular-weight polyethylene (UHMWPE) polymer, which can offer impact protection that is comparable to steel but with much greater energy-absorbing properties. The one major disadvantage of polymers is that they are susceptible to increased temperature and can experience significantly lowered impact protection in hotter climates.

- **Smart materials.** Typified by carbon nanotube-based materials, these offer excellent impact resistance together with a significant weight reduction compared to metals and even ceramics. Smart materials can also include ceramic armor meshed with stainless steel bullet-arrestor sections which offer high impact capabilities and are able to soak up multiple strikes. The real downside to smart armor plates is the cost of manufacture, which gets passed down the line to consumer, however costs are dropping all the time and armor made from smart materials may soon replace many other forms.



Smart-Material Impact.

Image Credits: MIT/Caltech

Modern plate carriers are designed to accept a range of armor plate sizes and shapes, and allow for a range of positions to suit the user and the situation they face.

Assessing Your Needs.

Plainly, there are as many plate carrier combinations as there are combat situations, and getting through a fire-fight will depend upon choosing wisely. But setting up a winning plate combination is much more than just loading up the front and rear. Neither is it always planning for overkill and picking the thickest, heaviest steel plates that you can every time.

Every mission is different and you need to select your plate carrier and armor based on your perceived needs and threats that could occur as you enter the arena. This can be broken down into a five-point plan that will cover the different aspects of your situation. The five areas that need considering are:

- **Plate carrier choice.** Plate carriers can be broadly classified into four categories: sleek, minimalist, medium, and weighty. Based on these definitions, select a plate carrier that can withstand the rigors of the intended mission. Your selection will have a direct impact on the armor you choose.
- **Selecting plates.** This will be one of the major factors that will influence your loadout. If you are planning for a riotous firefight, it may be best to go big and thick or expensive and smart to soak up the impacts, but if you are expecting a less hairy situation then lighter armour may suffice.
- **Sizing and placement.** Modern plate carriers are designed to allow you to have not only a selection of different plates, but also have some flexibility in where they can be placed. Given that your armor is intended to protect the vital organs of the chest and abdomen, make sure that the armor carrier allows for placement in those areas at the very least.
- **Consider your load-out.** You will be carrying a good deal of equipment, much of which will integrate with your plate carrier. You may be needing webbing and combat packs or you could be filling packs with recon or photographic accessories. You may have the need for specialist packs resistant to water or sand ingress. All of these extra pieces of equipment will need to fit in with your plate carrier and not hinder it in any way.
- **Weight distribution and access.** You are likely to have a considerable amount of equipment with you, some of which you will need rapid access to than others; you might be able to pause to reach hydration packs, but are likely to need to be able to reach essentials such as extra magazines or your best camera smoothly and swiftly. While it might be easy to just stow these essentials in front of you, you need to consider flexibility, and that could influence your choice of plates all round.

You will need to consider each and every one of these points both individually and within a holistic context before you enter the mission area. Your choices are going to affect your performance and safety for the whole of the job.

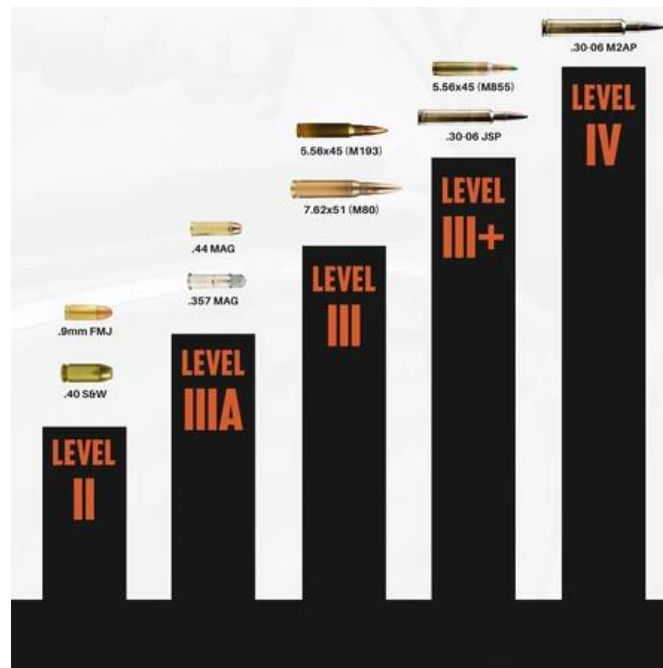
Making Your Plate Carrier Setup Fit the Task.

Looking at your plate carrier setups from the five-point process, you are going to need to start at first principles and build up from there. Probably the most fundamental of these is to consider the threats that you may be facing and the size of the rounds you may be encountering.

Assessing the Opposition.

For more than five decades, the National Institute of Justice (NIJ) has played a significant role in establishing body armor [standards](#). At present, it supervises the sole nationally recognized standard relating to body armor utilized by corrections officers and law enforcement. Additionally, the NIJ oversees a program that evaluates the compliance of commercially available armor with the standards in order to ascertain whether the vests satisfy the NIJ's minimum performance requirements.

Due to the exhaustive scope of the tests, they can also be used to evaluate armor in military and high-risk civilian operations. The NIJ standards encompass five fundamental standards of round from level II up to Level IV. The kinds of rounds that define each level are shown below.



NIJ Protection Levels.

The protection levels range from low-impact rounds such as 9mm FMJ' right up to big-hitting bullets such as a 30-06 M2AP. The range also includes 12-gauge impacts. Knowing what you may be up against is a big step toward selecting the right kind of plates for the job without just going for something big, bulky, and heavy.

Comfort in Combat with Easy Access.

The next issue that you should consider is your comfort in the combat zone, and selecting plates to ensure that you are flexible while being safe. Steel-armor clad knights of the 15th Century typically wore thick plate all over, and most of the French deaths at the Battle of Agincourt were attributed to the wearers becoming trapped in deep mud and drowning. The lesson to be learn here is you need to be a lightweight as possible rather than have total protection but to then become a victim of your environment.

Ideally, a plate carrier ought to connect closely to the chest and abdomen, avoiding any excessive looseness or tightness. It ought to be adjusted so that the front and rear plates are centered on the chest and back, respectively, and that it sits comfortably on the shoulders. The lower straps should to be adjusted in a manner that ensures a secure fit around the waist. Finally, the Velcro tightening straps should be fastened snugly, without obstructing respiration or movement excessively, allowing you to move quickly if necessary.

Ballistic protection should prioritize covering your important upper organs. Position your vest protection to begin just an inch or so below your collarbone, allowing it to cover your chest completely. It is easy to try wearing a plate carrier setup that is too low in order to protect the stomach, which reduces the protection of crucial organs in the upper chest. It is essential to protect the area containing the key organs of the heart and lungs. Get it right and you live to fight another day; get it wrong and you're going home in a bag.

Plate Carrier Loadout and Tactical Gear.

When evaluating mission equipment, it is crucial to have a carefully planned selection of important components. Your plate carrier setup will likely include magazine pouches, medical supplies, communication gear, and other vital items that will help completed the job. Alternatively, if you are running a civilian operation, you may be taking multiple cameras and lenses.

Correct setup of a plate carrier can significantly impact performance and preparedness in intense situations, and allow you to grab what you need quickly. While civilian or Med-Evac missions may have an array of different essential equipment, military-based operations are generally easier to plan for. Let's look at how your combat load-out can be positioned around your plate carrier.

Pistol.

You are likely to have your main weapon combat ready at all times, but you will need your secondary weapon close at hand. Most plate carriers allow for a standard drop-leg holster to fit to the cummerbund or molle area, giving you almost instant access to your handgun.

Comms.

Your Comms are essential but military Combat-Net Radio handsets such as the ICOM IC-SAT100 PTT can be pretty bulky, so need to be both out of your vision-field but close enough so that the push-to-talk function is close at hand. When deciding where to place items on your plate carrier, there are several possibilities to consider. Many people choose to affix the set in a pouch attached to the shoulder strap area of their plate carrier setup, but it may be better to connect it to the side to avoid interfering with regular activities while also maintaining quick access.

Admin.

You are going to need ID cards, maps, and mission specific information. A purpose-made Admin Pouch will connect to your plate carrier and keep all of your essential documentation safe while allowing easy access.

In Conclusion.

A well-considered plate carrier setup is mission-critical. Whether you go for heavier inserts at the front and back and lighter at the sides, or opt for a range of plate types and sizes all round, you should never enter a hot zone wishing that you had taken more time to think your armor through. The (client) range of plate carriers are well-designed and of the highest quality, giving the confidence you need in any type of action.