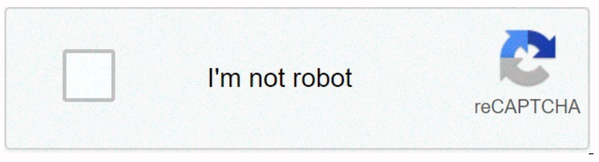

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First focal plane vs second focal plane

All photos Credit: Talus Creative Many people in this industry ask what is better, first or second focus plane. But the truth is, it's simply a matter of finding the right tool for the right job. Not one is better than the other. They both have pros and cons based on the application of the system. Understanding the difference between the two and their benefits can make the difference when purchasing an optic. Many shooters watch the first focus plane as strictly a tactical optic, while second focus plane is just for hunting. What we will discuss in this article is the application of the components in an optical. This is defined by understanding what components or function sets will best suit the needs of the shooter. So let's start by breaking down the differences between the focal aircraft itself. What are focal aircraft? There are two separate locations or aircraft in an optician where all the lights and colors moving through the optical system converge to a single limited point, thereby creating a real image for the shooter's eye to see and their brains to calculate what they're looking at. These two points are called focal aircraft. Each variable power optical has both a first and a second focus plane. Either one of these places could be the housing area for a reticle. Therefore, we refer to a scope as a first or second focus plane optic. We specifically refer to the location of the reticle within the scope. Inside the honorary rector tube of the scope there are two honorary cells. These lenses move forward and back as the shooter turns the power selector ring, causing the image to grow and shrink. The honorary sergeant cells will enlarge and de-enlarge anything that is in front of them. This is how the enlargement works in the scope. If the reticle is housed in the first focal point location, then the reticle enlargement will change in perfect proportion to the image as it is located in front of the erector cells. If the reticle is housed in the second focus plane location, the reticle will remain a single size while the image changes throughout the magnge range. It is very important to understand whether the reticle angle unit of measure subtenses is added to it (Mils or MOA). In a first focus plane scope, the Mil/MOA lines will be accurate and true throughout the entire magnization range. In a second focus plane scope, the subtensions will only be accurate on a specific enlargement, typically the maximum magnation. If you use a second focus plane scope with an enlargement of 5x-25x with a Mil-based reticle, then at 25x every Mil is truly a Mil. But if you dropped the enlargement to 15x – exactly half the magnation range – then every Mil will now level two Milte due to the fact that you have the image to half the size with to the reticle. What is for my needs? It really comes down to the application. The primary application that necessitates first focus aircraft optics is a style of shooting called hold-off. This is where the shooter will simply hold high for height and keep left or right to compensate for wind. If the shooter should be able to maintain a lower enlargement for a larger field of view and still use the Mil/MOA reticle to keep shooting, a first focus plane scope would be the best choice. Most hunters, military and law enforcement shooters move, hunt or fight with the optical on the lowest power environment. It is specifically to have the largest field of view and exit apprentice available to them for a rapid deployment of their firearm. If a hunter steals in tight, thick brush, chances are the shot will be taken from a relatively close distance. In the U.S. in 2016, the average law enforcement sniper was shot at fifty-seven yards. In both cases, it would be safe to say that the shooter would live primarily in a lower enlargement institution. In these two examples, if the shooters had used a first focus plane scope, they would not have had a bold, movable reticle available to them, as the reticle would shrink with the enlargement. So for tight country hunting and for most of the law enforcement sniper community, a second focus plane would be an optimal choice. However, if the hunter is in wide-open country, or the sniper is military as opposed to law enforcement, then hold-off shooting will be a big deal, if not the primary method of engagement. Whether it's switching for altitude and holding for wind, or holding for both windage and altitude, the first focal aircraft scope becomes a much more comfortable tool. When you want to buy a new optical for a firearm, consider the application and select accordingly. Don't let the masses convince you that one is better than the other. It is simply a matter of proper application of components. Watching the Hawke FFP scope in action or SHOP the FFP series NOW FIRST FOCUS PLANE (FFP) First focus plane optical systems have positioned the reticle toward the turret of the gun buying, toward the enlargement system. This means changing the visible size of the reticle when adjusting the gunscope's enlargement; the target image behind the reticle will remain in relation to the reticle as the enlargement is adjusted. As such, the reticle's goals are correct at all magnge institutions. At lower magnations, the visible artical size will be smaller. At higher magnations, the reactive size will be larger. Reticle goalpoints remain the same on all enlargements. The reticle aimpoints (or subtents) will always remain the same on all enlargements. This is the main advantage of FFP scope. The advantage of this is that you know, no matter what, your container under purposes for longer (and closer) closer) will always be correct. You do not need to reactivate your goals after adjusting enlargement. It also gives a great sense of confidence and means you don't have to worry about checking your enlargement environment is correct before firing container. Revolver click matches the reticle on all magnations. All Hawke FFP guns are currently designed with Mil spaced reticles. When combined with Mil (MRAD) turves, the click adjustment fits perfectly. Every 10 click equals 1 Mil on the reticle. Since the Mil spacing remains true on all enlargements, the reticle can easily be used to zero your gun buy. E.g. if the point of impact lands 1 Mil space to the right, then the windage turrets should adjust 10 clicks to the left. The reticle thickness also changes with enlargement. When adjusting magnitude, the entire artic increases or decreases in size along with the target you're looking at. That means you don't have a too-large reticle obscuring the view of the target when on low magnation. Second Focal Scope will always look the same thickness as you look at them. This means that when the reticle on lower enlargement will obscure more of the target you're aiming for. Serial finding is made easier as it can be done on all enlargement settings without re-calculating. The spacings on the reticle can be used for the range to find a target, as the size of the gap between each point is known on the reticle. E.g. 1 Mil of spacing equals 3.6 at a distance of 100yds. This is true on all magnation settings, so results can be calculated more quickly. The reticle may appear small on lower enlargements. The advantage of the reticle changing size with enlargement can also prove a disadvantage if used on low magnations. To help overcome this problem, Hawke ensured all FFP scopes are eased, so even if the reticle starts to appear small at the lowest magnge setting, you can turn on the relief and still easily see the goal points. SECOND FOCUS PLANE (SFP) Second focus plane optical systems positioned the reticle to the eyepiece of the gun buying, before the enlargement system. As such, the size of the reticle does not change when the gunscope's enlargement is adjusted, only the object will increase and decrease after vow after void of the enlargement. At lower magnifications, the object size between the goal points will be greater. At higher magnifications, the object size between the goal points will be smaller. Most SFP reticles are designed with their goal points calibrated to a specific magnation. E.g. the Falcons 10x Mil-Dot reticle is designed to give genuine Mil spacing when at 10x enlargement. Reticle remains easily visible on lower enlargement. In examples of hunting are SFP reticles more popular. A reticle that remains the same size as you see it means the and aimpoint is always easily visible. Reticle won't be small when used on lower enlargement so quickly made acquisition easier. Reticle is not over-sized on higher enlargement. On FFP scope, the reticle thickness should be large enough to still be visible on low magnation. This means it will be very thick on high magnation. By comparison, SFP scope has the same reticle thickness on all magnation. This usually means that the thickness of SFP reticles at high magnation is less than the thickness of FFP reticles on high magnation. The reticle will obscure less of the target and be more useful for target applications such as banking shooting, or when shooting at a fixed distance. Reticle goalpoints change with enlargement. The centre goal point (zero) will remain the same at all magnations, but the target distance of each container and container goal points above and below the center will change with enlargement. This means that you need to re-calve the relevant distance from each point of purpose if adjusted between magnations. Reticle doesn't change with enlargement. This means you could potentially have a reticle obscuring your view of the target when it's on lower magnation settings. Find out more technical tips from Hawke here | Learn more about Hawke Life | Like Hawke on Facebook | Follow Hawke on Twitter | Follow Hawke on InstagramClick here to see the full range of first focus plane gun kicks from Hawke optics optics

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