

## USAMU Shotgun Team – Home Fitting Your Shotgun Pitch

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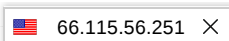
Gold Medal Trap Shooting

Home Fitting Your Shotgun Pitch

by SSG Ryan Hadden, United States Army Marksmanship Unit Shotgun Team ([Website](#))

Hello and welcome to our first attempt at a “pro tip” column for GunsAmerica Magazine from the U.S. Army Marksmanship Unit (USAMU). If you haven’t been following the previous columns on the history and purpose of the USAMU, as well as a great article from the custom shop last month on Cartridge Overall Length, I suggest you check them out.

My name is SSG Ryan Hadden and I shoot on the US Army Marksmanship Unit Shotgun team. As I write this I have just returned from China where I won a bronze medal for US in Men’s Trap. This is the second shotgun event in the International Shooting Sports Federation (ISSF) World Cup Championship for 2010, and my teammates SSG Josh Richmond and CPL Jeffrey Holguin won gold and bronze respectively in Men’s Doubles Trap for the first event in March that took place in Acapulco. We shoot under the governing body of USA Shooting when we compete, but we are all United States Army Marksmanship Unit Soldiers. Medal winners in the ISSF World Cup earn slots for their home countries and this is the first year



*A few quarters in between your pad and the gun will allow you to test the proper pitch so that the*

coming out Army Strong.

*gun is recoiling straight back into your shoulder.*

*This is an example of adjusting pitch in the top*

Today I am going to talk about pitch in a shotgun. *of the stock with quarters.*

Pitch is the angle at which the recoil pad sits on

your stock to direct recoil. It controls how the recoil comes back against your shoulder and this is a key factor in recoil management, shot-to-shot preparation, and overall comfort with shooting your shotgun.

Pitch is something you should take very seriously. Out of the box it is an edge against other competitors who haven't taken the time to adjust their guns properly to their own body ergonomics. And for hunting, if you are practicing with clays or out shooting dozens of doves in a day, when you are shooting a shotgun that feels "on" and "right," most likely it is because the gun is set up close to the pitch of what your body is looking for.

The reason most people don't adjust the pitch on their shotgun is false. It is cost. I've heard story after story that young shooters were told that they needed thousands of dollars for a custom stock, and that they had to bring the gun back and forth the gunsmith to get it right, but none of that is true. You can find your own pitch adjustment with about a dollar in quarters, and it will be perfect, it will not damage your gun, and it will help you become a better shooter almost overnight.

When shooting a shotgun, whether it is in competition or for hunting, there is one of three things that will happen with the muzzle of the shotgun when you fire a shell.

1. The muzzle will recoil upward causing your cheek and head to get hit and to be lifted off the stock. This could develop a flinch and bruising to your cheek over an extended amount of shots fired. This also makes it difficult to achieve a steady and successful follow-up shot.
2. The muzzle of the shotgun recoils downward pulling the shotgun away from your cheek and face. This again makes it difficult for a follow-up shot. It wastes time trying to get your head back on the stock and trying to get that desired sight picture that is needed.
3. The muzzle of the shotgun comes straight back thus absorbing the majority of the recoil in your shoulder and not causing your head and face to be raised off of the stock. This allows for a person to shoot more shots without hurting their cheek and face. They will also have successful follow-up shots due to the fact that their head stays down and they have that desired sight picture after the first shot is fired.

You are probably thinking you need a high speed camera to figure out if this is happening or not.



the side and watch the muzzle of your shotgun when shooting. He or she should be able to see and tell you what way it is recoiling. If you are an avid shooter then you will be able to tell just simply by feel and figuring out where your head is for follow-up shots.



### Signs of Adverse Pitch Angle and How to Adjust It

The biggest warning sign of a gun that isn't set up for you with pitch is that it feels like it is recoiling harder than it should. You feel like you are blown off the gun when you fire, and that follow-up shots are an effort to get back on target.

Let's say the shotgun does not exactly fit you and is recoiling harder than normal. It is driving your face upwards off the stock. This means that you have too much up pitch and it needs to be changed. You can change it by adding quarters to the top of the pad until getting the optimal pitch desired thus driving the recoil and muzzle straight back into your shoulder.

*This is a picture of the quarters in the bottom of the stock. You won't generally use the quarters in both sides because the stability of the pad will be effected, and in a fixed breech gun like an over-under the pad might be damaged. If you feel you need your length of pull adjusted you can get spacers from the gunsmith before you go out to test, and your final adjustment can be added to your final machined piece. If you feel that the overall length of pull needs to be shortened up, that is something you will have to have shaved down gradually by the gunsmith until it is right.*

Let's say again that the shotgun does not exactly fit you and is recoiling harder than normal. It is driving the shotgun downwards pulling it away from your face. This means that you have too much down pitch and it needs to be changed. You can change it by adding quarters to the bottom of the pad until getting the optimal pitch desired thus driving the recoil and muzzle straight back into your shoulder. See Picture.

Once you find the desired result you can then take the stock to a gunsmith having him add the correct spacer dimensions off of what you have achieved with the quarters. I would not recommend continuing to shoot with the quarters in the shotgun. Over time the pad will begin to warp or possibly crack, but you don't need to worry about this for your testing. It will not hurt the gun or the pad. They do sell "pitch spacers" at the major online retails, and you can even find them in gun shops sometimes, but I wouldn't bother with them. It won't be expensive to have a proper spacer made by a gunsmith with a machine shop. A nice clean spacer won't hang up on clothes when you are mounting the shotgun and will feel like a more permanent part of your shooting regimen. By r a safer and cleaner look.



### A Note about Length of Pull

I have included pictures of my shotgun with quarters in both the top and bottom, and another with the finished piece from the gunsmith inserted. Notice that it is thicker than the quarters, but it isn't like that because I put quarters in both the top and bottom at the same time to arrive at that varied thickness aluminum wedge. When I had my wedge made I also added some overall thickness for "length of pull," which is really just the distance between your shoulder and the trigger of the shotgun. Unlike pitch, length of pull is just preference. Your gunsmith should have some spacers you can borrow to adjust your length of pull, and then you can have him machine that thickness into your pitch adjustment wedge as well, as I did in this picture.



*This is the finished machined piece from the gunsmith, which is not expensive to have made.*

*This is the shotgun that I won two World Cups with last year and scored a Bronze in my first*

I hope you get some use out of this "pro-tip." Pitch *match out this year.* is something you are going to want to pay attention to if you hope to shoot your shotgun effectively. It is worth your time and effort to adjust the gun so it fits you right. Until next time, stay Army Strong!