COACHING THE POLE IN THE POLE VAULT

Over the years much has been written about pole vaulting technique. There are hundreds of books and videos dedicated to what the athlete should and shouldn't do. Most of the limited information available about poles is focused on how and why materials are used and how those materials are put together so that they will perform for certain styles of vaulting. As a 28 year veteran of the event, 20 years of coaching at all levels and 10 years assisting coaches with questions about pole selection, I realized that in order to be an effective coach you must understand how the pole will effect your technical goals for your vaulter. You must coach the pole as well as the athlete.

Beginners do not bend the pole so the only options are to raise or lower the athletes grip height. The higher they grip the higher they can go but the shallower they will land in the pit. The pole is merely a tool and does not provide any mechanical advantage. Once an athlete begins bending the pole everything changes. Safety first, don't over bend the pole and land in the center of the pit. Over bending the pole increases the possibility of breakage and the possibility of missing the pit. Our performance goal is to grip as high as possible on the stiffest pole possible while keeping the 2 key safety factors in mind.

I frequently get the statement "I need a pole my vaulter can bend". This can be accomplished by taking their highest "straight pole" grip and getting a pole that is 6 to 12 inches longer and is rated at their weight. The weight rating of a pole is based on the maximum grip. The lower the athlete holds on the pole, the stiffer the pole will act. Even when you get the appropriate pole it is still the athlete's responsibility to overcome the resistance of the pole. In other words, until they can run fast enough and plant effectively enough they will struggle to bend a pole rated at their weight. Don't skip straight pole vaulting. This is where they will gain the confidence and experience they need to learn to bend the pole.

The pole contains no magic, it needs to be used properly for success. The most obvious thing to observe is the amount of bend in the pole. Over bending by gripping too high is the most common error. Poles are tested when they are made to about 65% of their unbent length. This is considered a slight over bend based on the material properties and design. Poles can withstand much greater amounts of shortening (bend) but it is not recommended. The only thing that raising the athletes grip does is demand they bend the pole more. If the vaulter is bending the pole a lot then the correction is a stiffer pole. The stiffer the pole the less they will bend it. Once they achieve success with the stiffer pole, raise the grip until the pole is being bent normally and repeat the process. Always increase stiffness first and grip height second. When the athlete reaches the maximum grip on a certain length pole it is time to go to a longer pole. This can be accomplished by increasing the pole length by 6 inches, reducing the weight rating by 5 pounds and using only a slightly higher grip (no more than 3 inches). This "up 6 back 5" rule at a similar grip height will result in a pole that will perform about 5 pounds stiffer. It is never a good idea to make excessive increases in grip height. Small, deliberate steps will prove to be safe and productive in the development of technique.

Another area to watch is the top, or handle, of the pole. The handle of the pole is the area above the bottom hand that contains no bend. At take off it should continuously move forward and up. A sinking or drop indicates a low angle of attack on the last step and will most likely result in the pole being over bent. This part of the pole should not point down towards the runway excessively or for an extended period of time. If it does it indicates that, either the athlete is gripping too high, the pole is too soft, the take off step is under or the athlete is not moving the pole to vertical effectively.

The shape of the bend can be of benefit as well. Regardless of how the pole is designed its shape when bent is a result of how it is loaded by the athlete. A low bend is typically a result of a weak plant and low take off angle. The energy from the run is forced down the pole resulting in the energy being captured low. A high bend can be deceptive. Most technically proficient vaulters bend the pole high initially but as the swing begins the pole has a full/high bend. With less experienced vaulters the high bend stays high and is a result of blocking with the bottom arm making it difficult to swing at all. The optimum shape for a pole is a full even bend. No one small area of the pole is required to store all the energy. It is stored throughout the entire pole, minimizing the demand on the structure resulting in a smooth unbending action.

The chart below is a simple way to make corrections based on the 2 primary safety factors. Note that the chart does not consider bar height. It is common to see coaches raise an athletes grip or go to a bigger pole just because the bar went up. This is a dangerous practice since it did not make the athlete faster or plant better. An optimum standard setting when applying the chart is 24 inches (60cm).

Pole Bend	**Peak Height/Landing**	**Adjustment**
Too Little	Short	Softer Pole
Too Little	Deep	Raise Grip
Normal	Very Short	Softer Pole & Lower Grip
Normal	Slightly Short	Move Standards Closer
Normal	Slightly Deep	Move Standards Back
Too Much	Short	Lower Grip
Too Much	Deep	Stiffer Pole