



Using Olympic Lifts to Strengthen the High School Thrower

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A tremendous amount of literature has been produced over the years regarding the most effective approaches of strength training for throwers. A variety of different methods have been used by coaches and, despite their differences, many of these methods have contributed to successful performances by throwers. At the college and post-collegiate levels, various adaptations are often necessary to guide athletes as they continue to pursue their throwing goals while battling age, job demands, injuries, and other variables. However, at the high school level, the coach and athlete have their own challenges to face in the pursuit of optimal throwing performance. Some coaches attempt to get creative and “reinvent the wheel” by developing strength programs with new exercises that nobody has heard of or tried before. On the other hand, some coaches rely on the same old-school strength program that they used when they were throwing twenty years prior. With new strength training research and information being generated every track season, along with the availability of proven methods from the past, how can a high school coach select the perfect strength program for throwers to follow?

This article presents a blend of information from various schools, coaches, and time periods. Ultimately, it is the job of the coach to develop his/her own strength training approach and commit to following the plan. We are all looking for the perfect weapon that will give our throwers an advantage in their pursuit of big throws. Having a wide range of information gives the coach a larger arsenal to pick that perfect weapon from.

Successful Examples and Resources

There is nothing new about using the Olympic movements to enhance throwing performance. The snatch, clean, jerk, and related exercises have been building the foundation for championship throwers for decades. Interestingly, several elite throwers have competed successfully in Olympic Weightlifting competition. American world shot put champion Al Feuerbach won the US National Weightlifting Championship in 1974 with a 341 pound snatch and 418 pound clean and jerk. Two-time discus Olympian Adam Setliff has competed in both the Senior National and American Open Weightlifting Championships. Swedish Olympian discus throwers Anna Soderberg and Kristian Petterson have been national medalists in weightlifting, and the list goes on. However, before any of these tremendous performances were achieved, the Olympic lifts had to be taught as precisely and carefully as the throws.

Unlike collegiate throwers, who usually have some experience with the Olympic lifts when their college coaches begin working with them, high school throwers often have little to no experience in the Olympic movements or any other kind of weight training when they join the track team. In addition to this challenge, the high school coach will often be working with throwers who have very limited athletic ability. The “studs” will pop up now and then, but the average thrower will usually have average talent. Where a collegiate coach can focus on refining a thrower’s power clean technique, for example, the high school coach is responsible for building this technique from the beginning.

Because of this, it is extremely important that the throws coach has a solid teaching progression for the snatch, clean, and any other lifts that will be part of the throwers’ training regimen. The high school throws coach should be as knowledgeable in the Olympic lifts as the throws. USA Weightlifting is the national governing body for Olympic Weightlifting in America. Various books, articles, and videos are available through the USAW website. These videos and articles provide an excellent teaching sequence for the Olympic lifts. Even coaches who have little or no experience with Olympic lifting can master these materials and implement their use in the development of throwers. This article, for the sake of brevity, will not go in-depth with these teaching progressions and their components. It is the task of the coach to seek them out and perfect them, but it is important to know of their availability.

Importance of Teaching Progressions

Teaching the Olympic lifts is a progression, just like teaching the throws. When a coach teaches an athlete to throw the shot or disc, it is likely done with a sequence of drills that lead the athlete through the arm strike, shoulder rotation, hip drive, etc. Teaching the Olympic lifts is no different. The athlete must develop an effective posture, grip width on the bar, stance/foot position, etc. before a proper clean, jerk, or snatch can be performed. One of the best equipment choices a coach can make to teach these elements is PVC pipe weighted with sand and end caps to seal the sand in. Having the athletes use these pipes to learn the pulling movements, squatting movements, and overhead positions serves the same purpose as teaching an athlete the proper discus movements using a cone or bowling pin instead of a disc. Without the physical and psychological burden of a full-sized barbell (or an implement in the throws), the athlete can focus on movement only. If the coach has a strong mastery of the teaching progression, several athletes can learn the movements at the same time.

For example, let us suppose that a coach wants to teach a dozen athletes to perform split jerks. Having that dozen athletes stand in a cluster around you, the coach, while you perform split jerks with an empty barbell and talk them through it while you are doing the jerks, huffing and puffing, and asking a bunch of high school kids, “Do you guys see how I’m doing this?” is a recipe for disaster. Instead, try the following method:

- Have the athletes stand in lines or some other formation so they all have room to work and they can see you, the coach, in front of the group.
- Give each athlete a PVC pipe.
- Teach them proper foot placement for the beginning of a jerk.
- Teach them proper grip width on the pipe.
- Teach them how to hold the pipe correctly on their shoulders.
- Teach them to perform a standing military press with the pipe.

- Teach them to perform a push press with the pipe.
- Teach them to perform a push jerk with the pipe.
- Have them put the pipe down and teach them the proper foot placement and lower body movement of a split.
- Have them jump into the split position with their hands on their hips.
- Have them pick up the pipe and perform a split jerk with the pipe.
- After a hundred reps of solid split jerks with a pipe, they should be ready to try the movement with an empty barbell.

When the athlete has been guided through the teaching progression and can perform a complete snatch, clean, jerk, etc. with a PVC pipe and an empty barbell using consistent, solid technique, the coach can move the athlete along to a weighted barbell. In the teaching stages of the Olympic lifts, the use of light weights cannot be overemphasized. The focus of the athlete has to be entirely on proper positions and speed. When an inexperienced athlete puts too much weight on the bar too quickly, all the time spent in the teaching progression will be discarded and you will start to see the slow, rounded-back, reverse-curl, press out-snatch movements that we have all witnessed in high school weight rooms. These movements are inefficient, injury-prone, and will do very little to improve throwing performance. It will be clear to a coach when an athlete is ready to add more weight to the bar, but it must be added slowly in all cases.

Selection of Exercises

The coach can decide which Olympic exercises to use in the strength training program. There are a variety of movements to choose from. At Mountain View, our focus is primarily on the following exercises:

- Power Snatch
- Power Clean
- Power Clean and Push Jerk
- Split Jerk
- Overhead Squat
- Front Squat, Back Squat, Stop Squat (back squat with a one-second pause at the bottom)
- Clean Pulls from hang below the knee
- Snatch Pulls from hang below the knee
- Slow-motion clean pulls- This is a relatively uncommon exercise. The lifter performs a clean pull from the floor as slowly as possible. A full clean pull is performed, finishing with the lifter extending on the toes and shrugging the shoulders, but the whole movement is done slowly. Returning the bar to the floor is also done slowly, with the athlete lowering the barbell in the same pattern it was raised in. Each repetition will take 12-15 seconds. The focus of the exercise is tightness and maintaining solid posture throughout the movement. This is a torturous exercise, but the development of the spinal erectors is amazing. I learned this exercise from legendary Olympic Weightlifting coach Jim Schmitz of California, who calls them the “Clean Deadlift & Shrug.”

This exercise also brings up another important point. Slow movements are not entirely evil in the weight room. Because of the explosive nature of the throwing movements, many coaches subscribe to the theory that every movement performed in a strength training regimen should be executed as explosively as possible. For the most part, this idea is correct. But there are also times when slow, tight movements can

develop strength that will translate effectively into quicker movements. I have seen several throwers incorporate slow-motion clean pulls into their programs and, after five or six weeks, their cleans are stronger and more explosive. I have also experienced this personally in my career as an Olympic lifter.

These are some very general ideas on the use of the Olympic lifts in high school strength programs. There are obviously several other issues to be discussed such as the number of sets/repetitions, yearly planning, periodization, etc. These subjects can be analyzed in future articles. However, remember that the internet has truckloads of information floating around that deals with all of these subjects. All coaches are encouraged to explore this information and collect as many tools as possible.

Complex Movements

Complex exercises are a combination of multiple exercises into the same set. There are several different complexes that can be implemented into an athlete's training program. For example, a snatch complex might look like this: three power snatches from the floor, followed by three overhead squats, followed by three snatch-grip push presses behind the neck. These exercises are performed with no interruption. In other words, when the lifter has completed the third power snatch, the bar remains fixed over the head and the three overhead squats are performed; following the third overhead squat, the bar is lowered to the shoulders and the three snatch-grip push presses are performed. Basically, the complex is one set of nine repetitions broken up into three different exercises.

These exercises were popularized in the late 1980s and early 1990s when Romanian coach Istvan (Steve) Javorek implemented them with the athletes he trained at Johnson County Community College in Kansas. Several articles were written about complex movements, and strength coaches were quick to include them in their athletes' programs. They were sometimes even referred to as "Javorek Complexes." As years have passed, complexes have remained a part of many strength coaches' training programs.

The benefits of these exercises are varied.

- Conditioning- Olympic lifts are difficult, multi-jointed exercises, and performing a set of nine repetitions is quite taxing on the athlete's strength-endurance capacity.
- Multi-tasking- In one set of a complex, the athlete is learning to master three exercises at the same time. This requires mental focus and kinesthetic awareness to concentrate on different movements.
- Stabilizer Strength Development- "Stabilizer Strength" refers to the strength of the body's connective tissues (tendons and ligaments) along with the muscles of the body that stabilize the core and shoulder girdle while performing the Olympic lifts (obliques, rhomboids, deltoids, forearms, etc.) In a set of nine repetitions, the athlete's stabilizer muscles are contracting for almost the entire duration of the set, which could last up to one minute.
- Variety- Complexes are difficult, but they can be a welcome change from the daily grind of cleans, squats, etc. Athletes enjoy variety from time to time, and complexes are a way of accomplishing valuable work while freshening up the athlete's routine.

Here are a few examples of other complexes:

- Three power cleans-three front squats-three jerks
- Three push jerks from behind the neck-three back squats-three good mornings with the bar on the shoulders
- Three muscle snatches-three full snatches-three snatch-grip push jerks

Coaches can use their imagination when combining the movements. Complexes can also be performed with only two exercises, making the complex a set of six (3 + 3) instead of nine. With high school athletes, complexes are an excellent way of teaching different exercises. Light weights, obviously, are a must. Nine reps is a tough task in the Olympic lifts, and the athlete must be able to concentrate on movement instead of possible failure due to overloading the bar. As time passes and the movements become consistent, weight can be added slowly.

Again, there are various other aspects of high school strength training, and the strength training of throwers in general, that can be discussed in other articles. Although this article is focused on the improvement of teaching prep throwers, collegiate and post-collegiate throwers should not be afraid to consider adding some of these ideas. I have trained with several collegiate throwers over the years who decided to add some of these exercises to their routines after we discussed them, and the benefits have been impressive. Regardless of training age or expertise, there is always a piece of information floating around out there in Throwerland that could improve your performance. It could be information that you learned fifteen years ago and forgot, or it could be a new idea that you haven't tried. But the learning process, for intelligent throwers and coaches, is a lifelong road. You never know what nuggets might be laying on that road. All you have to do is remember to look around every once in a while.