

EXERCISE TECHNIQUE—A SIMPLE APPROACH TO TEACHING THE POWER CLEAN IN A GROUP ENVIRONMENT

In the years that I have been coaching athletes, one of the hardest lifting concepts to teach has always been the Olympic-style lift progressions. I recall as a young coach, I would call upon the more experienced coaches I was working with to assist in teaching these complex lifts. It was not until I obtained my certification and began practicing the techniques that I was able to truly appreciate the benefit of the lifts and the complexities involved in teaching them.

These complexities extend beyond the strength and conditioning professional's knowledge of the lift; they include the limitations of the lifter with regard to kinesthetic awareness, mobility, and neuromuscular coordination, to mention a few. Many strength and conditioning professionals encounter scenarios where they have to teach a group the clean progression or other variations. This can be a problematic situation because each individual in the group will have a unique set of physical constraints. For example, one may not appreciate what it means to arch their back, another might not be able to keep their shoulders retracted, etc. Typically, the time strength and conditioning professionals have with their lifters is limited, but yet they have to properly teach them the first pull, transition, second pull, catch, and the appropriate progressions. Oftentimes this will result in the strength and conditioning professional running out of time or rushing through the steps so quickly that the lifters do not learn or consolidate the movements thoroughly.

Often strength and conditioning professionals are taught the science and major teaching points of the Olympic-style lifting progressions but the art of teaching said progressions is neglected. The art of coaching is what happens when you have the right mentor, enough personal experience, and creativity to accomplish a task. Over the years, I have been fortunate enough to have several colleagues that have cared enough to provide me with some great feedback that has influenced and helped me to develop and refine the art of my coaching style. The following is my way (albeit not the only way) to accomplish teaching the power clean progression and some coaching cues that can be used to teach sport athletes or the tactical athletes in a group setting.

BACKGROUND INSTRUCTION

In order to do this successfully, the strength and conditioning professional must first provide some background information to cultivate understanding of the lifts. I begin by answering the following questions:

Why Perform the Olympic-Style Lift Progression? In order to increase power, or the rate of force development, for single effort or multiple effort bouts. Also, to increase strength and the ability to do more work over a given period of time. Becoming proficient at these lifts can help to maximize the integration of multi-joint movements into the programming and maximize the amount of time spent in the weight room, especially when under a time constraint.

What are the Benefits of the Olympic-Style Lift Progression? Of course, the obvious benefits from becoming proficient in these lifts is power and strength, however, mobility, stability, and core strength can also be developed. The bottom line is that in order to become proficient in these lifts, the entire spectrum of performance should be addressed, not just picking up a weight and putting it down. The ability to get into the proper position, activate the right muscles, and coordinate the movement of multiple joints to get from initiation to completion will be determined by the amount of mobility and stability in the ankles, hips, torso, and shoulders.

How to Get There? The body can be broken into three major checkpoints: the base, hips, and torso. This can be useful for lifters to be able to make a quick reference to parts of the body and ensure proper alignment. The feet are considered the base since they are in contact with the ground.

TEACHING THE OLYMPIC-STYLE LIFTS

POWER BASE AND STRENGTH BASE (FIGURES 1 AND 2)

There are two types of bases to consider when executing the power clean: the initial base is the power base and the completion base is the strength base. In the power base, the feet should be positioned hip-width apart to optimally produce maximal force vertically. For example, a basketball player would never spread their legs to go for a rebound, and this is because joint position dictates muscle recruitment. The right alignment will allow the basketball player to maximize their vertical displacement.

The strength base is a natural defensive position or a position ideal for stabilizing a large load imposed on the body. For example, a wrestler assumes a defensive posture when sprawling their legs to avoid a takedown by the opponent. The strength base is typically used during the catch phase of the power clean.

The strength base should consist of feet being shoulder-width apart or slightly wider. The hips should be slightly above the knees and the lower back should be flat or slightly concave. The big takeaway for this checkpoint is to understand why the hip position is so important. The position of the hip will dictate the order of recruitment for the three major muscles performing the first pull: the glutes, hamstrings, and quadriceps. There are different schools of thought on this point of performance; however, what I have found is that before starting to make adjustments for the limitations of the lifters, it is beneficial to try to achieve performance based on biomechanical principles first. It goes back to joint position dictating muscle recruitment, such that the height of the hips will determine if all three muscles will work synergistically or as part of a segmented effort. If they work synergistically, then maximal force production from three different sources at the same time can be attained. Conversely, if they work in a segmented fashion, then the potential for maximal force production is lost because they are not working together. Additionally, keep in mind that the weight distribution into the base in the triple flexed position should be equally distributed on the back $\frac{3}{4}$ of the foot to facilitate the hips and shoulders moving as a unit.

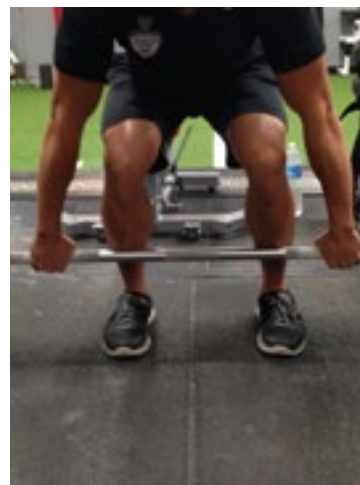


FIGURE 1. POWER BASE



FIGURE 2. STRENGTH BASE

**HIPS PARALLEL VERSUS HIPS ABOVE THE KNEES
(FIGURES 3 AND 4)**



FIGURE 3. HIPS PARALLEL



FIGURE 4. HIPS ABOVE KNEES

TORSO (FIGURES 5 AND 6)

The torso is composed of four sub-checkpoints: the head, lats, arms, and hands. The head should be positioned looking straight ahead or neutral. The lats should be “set.” A good way to think of the lats is as the winch housing the line between two cars where one is being towed. Before the car in front can begin towing the other car, there must be tension in the line to allow the force to be transferred through the line. If there is slack in the line there will be an interruption of force transfer, but if the line is tight then the force will transfer immediately and both cars will move in accord. The same holds true for the bar and the body. When the lats are activated, they set the conditions for the transfer of force from the hips to occur between the body and the bar. When the lats are deactivated, there is a delay in the transfer of force from the hips to the bar. This can lead to a number of errors such as shooting the hips, rounding the back, or swinging the bar forward, all of which have a negative effect on the execution of the lift.

The arms work in conjunction with the lats to transfer the force being produced by the hips onto the bar. The arms should remain fully extended and the elbows should be pointed out. This will influence the bar to move towards the body as the hips and shoulders rise or as the lifter pushes off the ground. A useful coaching cue is that “the bar is a magnet for the body,” which reinforces that the closer the bar is to the source of power, the easier it will be to lift the load. Finally, the hands also play a critical role in the execution of the lift and the bar path. The hands should be curled towards the body so as to keep bar from swinging away from the body and crashing down onto the lifters shoulders.



FIGURE 5. LATS ENGAGED

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FIGURE 6. ELBOWS OUT

STARTING POSITION (FIGURES 7 - 10)

The starting position for the power clean is very important. Note that the starting position does not always have to be from the ground; depending on the lifter's hip mobility, a strength and conditioning professional may consider teaching the lift from the "top down" versus from the "bottom up." If performing a "top down" power clean, position one would be from the top of the thigh, position two would be from the mid-thigh, position three would be from below the knee or top of the knee, and position four would be from the ground.



FIGURE 7. POSITION 1 - TOP OF THIGH



FIGURE 8. POSITION 2 - MID-THIGH



FIGURE 9. POSITION 3 - BELOW THE KNEE



FIGURE 10. POSITION 4 - FROM THE GROUND

WHOLE-PART-WHOLE METHOD

Executing this in a large group setting can be much easier once the lifters have learned quick references, allowing them to make adjustments. This part of the instruction usually takes around 20 min, which allows the rest of the time (preferably an hour) to be spent on executing the progressions. The method I use with my lifters is the whole-part-whole method. While this is not a new approach by any means, there is something to be said about knowing how to apply this technique in different settings and finding ways to achieve various outcomes.

Assuming that there are somewhat limited resources available, a sample progression includes:

- Clean pull to knees (Figures 11 and 12)
- Deadlift
- Clean pull (Figures 13 and 14)
- Clean high pull (Figure 15)
- Power clean (Figure 16)
- Front squat (Figures 17 and 18)



FIGURE 11. CLEAN PULL TO KNEE – START

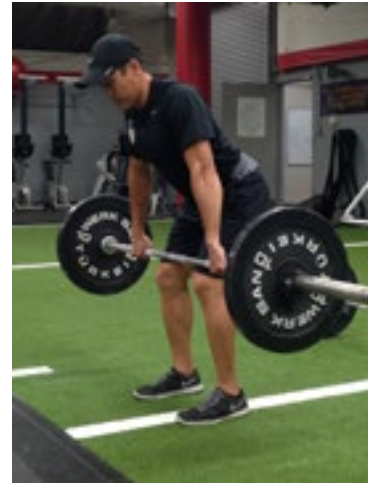


FIGURE 12. CLEAN PULL TO KNEE – FINISH



FIGURE 13. CLEAN PULL – START

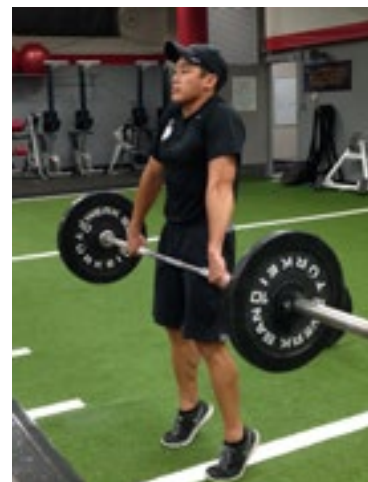


FIGURE 14. CLEAN PULL – FINISH

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FIGURE 15. CLEAN HIGH PULL - FINISH



FIGURE 17. FRONT SQUAT - FRONTAL VIEW



FIGURE 16. POWER CLEAN - FINISH



FIGURE 18. FRONT SQUAT - LATERAL VIEW

SCARECROW CLEAN (FIGURES 19 AND 20)

It is important to note that after teaching the high pull, strength and conditioning professionals may have to demonstrate a supplemental progression that is not part of the actual sequence. Catalyst Athletics refers to this progression as the “scarecrow clean,” (1). This progression will allow the lifter to visually see the barbell’s spinning characteristics and how this will allow them to pull their body under the bar when executing the catch.



FIGURE 19. SCARECROW CLEAN – START



FIGURE 20. SCARECROW CLEAN – FINISH

CRAWL, WALK, RUN METHOD

Begin by setting up six barbells in a row. Ideally, there should be no more than three lifters for each barbell, which will reduce the amount of time the lifters have to waiting for their turn. With a group going through the class for the first time, I am a bit more conservative and usually have each lifter perform three rotations of three repetitions. After teaching in this format a few times, the strength and conditioning professional can be as creative as they want to be in the execution. Keep in mind that the more barbells in use, the greater potential for throughput; however, as throughput increases, it may become necessary to increase the amount of strength and conditioning professionals.

Having an Army background, I use the “crawl, walk, run” method as a teaching progression. During the crawl phase, start with one group of three at each barbell. They will execute each progression in accordance with the specified repetition scheme using the waterfall start (one operator executes while the other two observe, provide feedback, and wait for their turn). The initial load will be light to facilitate learning the movement pattern and making kinesthetic adjustments easier (even if some lifters claim that adding more weight will help technique). If all the points of performance are being properly met, the lifter can transition from the crawl phase to the walk phase by increasing the weight and/or tempo, depending on their needs.

The run phase is executed similarly to a complex routine. Now that the lifter has completed a decent amount of repetitions and has a fundamental understanding of the lift, they can be transition to a faster pace, a greater load, or both if their movement is proficient. During the run phase, a strength and conditioning professional can choose to execute all of the progressions in the complex or any variations that may better benefit the group. A sample complex routine could include:

- Clean pulls (3 x 3)
- Clean high pulls (3 x 3)
- Power cleans (3 x 3)

The lifter will execute three repetitions of each progression to complete one set. The rest ratio would be 2:1 since each lifter would have to wait for their turn. The intent behind the run phase is twofold: to validate the principles that were learned from the instructions, and to show the group how challenging the progressions can be to execute. Once each lifter has completed the prescribed number of sets and repetitions, the strength and conditioning professional can conduct a final review of the material covered to conclude the session.

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CONCLUSION

This is one of many ways to organize a block of instruction in a group setting to teach Olympic-style lifts, each strength and conditioning professional should find what works best for them. There may be situations where part of the group is executing the progressions from the top down and the other half is doing it from the bottom up. This is where the art of coaching and knowing a variety of technical models comes in handy. Just remember to keep it simple, use brief coaching cues that stick, and be flexible with the various learning abilities of the group.

REFERENCES

1. Everett, G. *Olympic Weightlifting: A Complete Guide for Athletes and Coaches*. (2nd ed) Catalyst Athletics: 133-138, 2009.

ABOUT THE AUTHOR

Joe Cruz currently serves as the Head Strength and Conditioning Coach for Naval Special Warfare-Special Boat Team 20 in Virginia Beach. He has over 12 years of experience in coaching athletes to improve their strength, power, speed, and agility across a wide spectrum of sports and civil service jobs. Prior to taking the position with Naval Special Warfare, he worked as a Sports Performance Director with Velocity Sports Performance and the Parisi Speed School. He is an Infantry Officer in the Virginia Army National Guard and has over 21 years of combined officer and enlisted service. He served a tour in Afghanistan in support of Operation Enduring Freedom as a Combat Advisor in 2008. He completed his undergraduate degree in Biology at City University of New York-Hunter College and his Master's degree in Exercise Science and Health Promotion through the California University of Pennsylvania. He is a Certified Strength and Conditioning Specialist® (CSCS®) through the National Strength and Conditioning Association (NSCA), United States of America Weightlifting (USAW) Level 1 Weightlifting Coach, National Academy of Sports Medicine (NASM) Performance Enhancement Specialist (PES), and Functional Movement System (FMS) certified.