Teaching Techniques #1:

The Power Clean

1. When instructing proper exercise technique for the power clean weight training exercise, list some of the common technique errors observed in the beginning lifter.

Huegli:
A. Uneven grip or a grip that is too wide.
B. Feet too far apart. The feet should be shoulder width or just greater.
C. Having a round back when positioning to pick up the bar is a common error. The arms should be hanging straight down from the shoulders and over the bar. The bar should be over the balls of the feet with the feet flat on the ground. The shoulders should be arched back and higher than the hips.
D. Lifting the bar off the ground with the back is another error. The athlete should be strong through the back and stomach and lift the weight with the legs so that the shoulders and hips rise together. You don’t want the hips coming up, the legs straightening and the shoulders rising with the back pulling the weight up.

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E. Pulling the weight with the arms and shoulders before driving the weight upward with the hips and legs. This can often be corrected by having the athlete arch his shoulders and maintain a flat back while lifting the bar from the ground to the power position. Then, powerfully extending the body straight, keeping the arms straight, shrug the weight up along the body and begin the pull with the arms as the body drops beneath the bar.

Burgener: At Rancho Buena Vista High School, I teach the power clean in four base segments initially, dealing with common mistakes in each of the segments or phases, which I will discuss below. However, I think it is important for the reader to understand that most of our work in the power clean movement is from the hang position (just above the knees). Secondly, I feel it is critical for the reader to understand that before we start using poundage in the power clean, the lower back must be trained and strong. We use the glute ham bench as well as the good morning exercise to train this area. Technique is taught using a broomstick handle while the lower back is being worked.

Power Clean Coaching Points:
A. Starting Position: 1st Phase
1. Feet under the bar
2. Bar touching the shins
3. Back flat (concave) and very tight
4. Shoulders over the bar

The common mistakes in the starting position are:
1. Bar away from the shins
2. Shoulders are behind the bar
3. Back rounded and relaxed

It’s important to note that our athletes and students alike never pick up a bar until they can demonstrate to me the correct starting position using a broomstick handle.
B. First Pull: 2nd Phase
1. Pull the bar from the floor slowly
2. Shoulders remain over the bar
3. Back is extremely tight and concave
4. Butt stays down
5. Bar stays close to the body

The purpose of the first pull is to bring the bar into proper pulling position. For this reason, the velocity of the bar off the floor is slow, bringing the position to the "athletic position" that so many strength coaches refer to. It is here that the explosion of the clean commences.

Common Mistakes:
1. Butt comes up first
2. Bar is jerked off the floor
3. Back is rounded rather than being flat

C. Second Pull: 3rd Phase (the hang position)
1. Shoulders are thrust forward and up in a violent, explosive action
2. Hips are thrust forward and up in a violent, explosive action
3. Legs are straightened and extended. One tries to get as much extension as possible, going high on the toes.
4. Shrug the shoulders up violently
5. Keep the bar close to the body

Common mistakes of the 3rd phase:
1. Butt comes up too far and too fast
2. Back rounds and becomes relaxed
3. Bar is jerked off the floor
4. When all of this happens, the bar is not in the proper position to allow the body to gain full explosion

In the beginning we'll stop here, forgetting the rack. There is really no functional reason for the rack other than completing the last phase of the power or hang clean.

✓ Coach’s Checklist

The Power Clean

Before You Begin
☐ Well marked power clean area
☐ Dry surface, preferably with mats under the weights
☐ Clean area, no loose plates
☐ Olympic style straight bar with revolving sleeves
☐ Evenly loaded bar with collars

The Start
☐ Shoulder width stance, feet flat on the floor and toes pointed slightly outward
☐ Shins very close to bar or lightly touching
☐ Overhand grip (pronated) slightly wider than shoulder with thumbs around bar and wrist flexed
☐ Arms straight with elbows pointed to the sides
☐ Knees inside arms
☐ Back is straight or slightly arched and rigid
☐ Head facing straight forward
☐ Shoulder blades pulled together, and chest held up and high, trapezius muscle relaxed
☐ Shoulders over or slightly ahead of the bar
☐ Inhale before bar leaves the floor to ensure a tight torso (do not exhale until after second pull)

First Pull
☐ Smooth, slow, easy pull off the floor
☐ Extend the knees
☐ Knees move back
☐ Hips and shoulders rise at the same rate. Angle of the back remains constant.
☐ Bar comes up straight (not around legs) and stays close to body
☐ Arms stay straight, shoulders back
☐ Shoulder remain above or slightly in front of bar
☐ Head facing straight forward or slightly down
☐ Back straight or slightly arched
☐ Knees move back under bar (double knee bend, scoop)
☐ Feet remain flat (should be able to "wiggle toes")

Second Pull
☐ Athlete has reached the power position
☐ Bar brushes against the middle or top of the thighs
☐ Back is straight or slightly arched
☐ Arms straight
☐ Head facing straight forward
☐ Feet are still flat
☐ Bar is pulled explosively as legs completely extend in "jumping" action
☐ Shoulders stay over or in front of the bar as long as possible
☐ Bar pulled close to body
☐ Shrug trapezius to elevate bar
☐ Continue upward pull by pulling with arms
☐ Keep elbows high, moving up and out, elbows over the wrists
☐ Pull as high as possible

Rack and Recovery
☐ Quickly shift feet slightly to each side
☐ Rotate elbows around the bar
☐ Rack the weight across front of shoulders
☐ Move elbows forward and keep them high
☐ Bench at knees to absorb weight of the bar in the catch phase
☐ Exhale
☐ Stand up straight when lift is complete
☐ Bar positioned on anterior deltoid and clavicle
☐ Elbows up, torso rigid, chest held high

Lowering the Bar
☐ Lower bar under control, to top of thighs
☐ Bend at the knees and hips, squat down, bringing bar to the floor
☐ Keep back straight

Thanks to Bruno Pauletto, C.S.C.S., for his initial work on this checklist.
D. The Rack: 4th Phase
1. Good feet movement, spread far enough to allow a good solid base.
2. A bending of the knees (softening) and hips, almost in a quarter or half squat position.
3. Elbows up and in front of the bar, allowing the bar to rest on the anterior deltoids.

Common Mistakes:
1. Foot movement—either too wide, too narrow, or not at all.
2. Reverse curling the bar, not driving the elbows to the ceiling, and not keeping the bar close to the body.
3. Elbows not coming in front of the bar—swinging the bar.
4. Not bending the knees to catch the weight.

Bieliš: Some errors we have seen can best be illustrated when the power clean is broken down into phases. The phases are stance, first pull, second pull, receiving and recovery.

A. Stance
When preparing to lift, many times the athlete’s stance is too wide. They feel their knees may collide with the bar as it is lifted upward. An approximate eight inch heel to heel (inside of heel) relationship is correct, with a 15 degree toe out position. This stance distance is advantageous to positive vertical forces generated during the first and second pulls.

Begin with feet approximately 8 inches apart, toes pointed out at a 15° angle.

The hand spacing when gripping the bar is sometimes a problem. A shoulder width grip is considered best. Reasons for this width are so the grip passes outside the knees and during the receiving of the bar, the hands will be outside the bar to shoulder contact points.

While in the stance, athletes tend to allow the bar’s position to be too far in front of the shins and the shoulders behind the bar. The bar should be over the mid-foot with the shoulders in front of the bar. Having the athlete shift his or her weight forward while maintaining a flat foot contact with the floor helps to attain this position. The bar and shoulder positions influence virtually all principles associated with the advantageous vertical forces interacting with the bar.

The back position during the stance is of critical importance, as are most positions during the stance. Athletes may allow the hip position to be high in respect to the shoulders. Allowing the hips to sit too high decreases the tremendous influence the thigh and hip musculature has in the first pull. When the legs are taken out of the lift, the weaker back assumes the majority of the lifting forces.

As the angle of the back plays an important role, so does a rigid straight back. Athletes sometimes forget to keep the back tight and straight. A rigid back in all phases of the lift plays an important role. The back as a rigid lever directs the positive forces produced by the large muscles of the body into the bar. A tight back also protects itself from injury. During the stance, a coach’s hands on the shoulders and hollow of the back may help set the back.

When observing the arms and shoulders, athletes sometimes bend their elbows, having them pointed toward the rear. The proper position is having the elbows turned out and straight with the shoulder girdle down and back. This arm and shoulder girdle positioning sets the stage for later bar shrugging and bar to body positioning. Just prior to initiating the next phase, the athlete should pull on the bar by pushing into the floor with the thighs and hips. This action sets the back and shoulders.

B. First Pull
A common fault during the first pull is an excess bar-to-body separation. The bar should travel close to the shins. This is to provide a position of leverage. There are a few reasons for the separation of the bar from the body.

Pull the bar close to the body, keeping shoulders in front of the bar.

A common reason for a bar-to-body separation is the drifting of the shoulders to a position of above or behind the bar. This drift can occur prior to or during the first pull. The shoulders should stay in front of the bar during the first pull. Concentration on correct position should help alleviate the drifting of the shoulders.

During the first pull, the back angle to the floor may not stay relatively constant. This is caused by the hips rising too fast or slow compared to the shoulders’ upward movement. If the hips rise faster, the back will be overloaded and the knees prematurely straightened, and the bar may drift from the legs. This problem may be caused by a “jerking” of the bar off the floor. The bar should be “squatted” off the floor utilizing the thigh and hip musculature. The coach may instruct “squeezing” the bar off the floor.

If during the first pull the athlete’s shoulders rise faster than the hips, timing will be lost during the second pull. The timing problem may cause
bar-to-body separation or difficulty in the "scooping" action at the start of the second pull. Coaches should emphasize keeping the shoulders in front of the bar, and a body weight shift from the toes to the mid-foot.

During the first pull and in the initial second pull, athletes tend to bend the arms. The arms should not bend. This will absorb the positive vertical forces needed to lift the bar upward, especially coming off the latter shrug. Tell your athletes their arms are "hooks." When pulling a stalled car, strong chains are used, not springs.

Male athletes tend to be "arm conscious." They use the arms too early when first learning the pulling movements. Female athletes, on the other hand, tend not to be overly conscious of their arms. Their arm pull timing is more acceptable compared to the male athlete in the beginning stage of learning the technique.

C. Second Pull

When the bar passes the knees, athletes sometimes do not explosively extend the back. Due to the action-reaction principle, an explosive back extension causes the knees to rebend and move under the upwardly moving bar. This rebending of the knees loads the extensor musculature of the lower body. The loading is a stretching of the involved musculature increasing their potential for a rapid, forceful contraction. While the knees are rebending, coaches should emphasize a body weight toward the balls of the feet.

Combining the back's extension and the lower body extension brings about the most explosive total body upward movement of the lift. Athletes not demonstrating this rapid acceleration may not be aware of the urgency for maximal effort needed, or may be committing an error in one or more of the previously mentioned movement patterns.

Athletes commonly do not attain full body extension prior to pulling themselves under the bar. In the receiving phases, full body extension allows a greater time and distance for the body to apply positive vertical forces into the bar. Also, the greater height the bar attains, the easier it is to receive the bar.

Athletes may not effectively utilize the trapezius musculature near the end of the second pull. This may be due to an awareness problem, a loss of the down and back initial position of the shoulder girdle, hyperextension of the neck or a premature arm bend. The coach should emphasize the violent shrug and point to the other position factors. A violent shrug generates the final positive vertical force into the bar and aids in pulling the athlete under the bar.

The receiving and the recovery phases of the lift. The back should be flat and rigid. With a tight back, no forces are lost in the supporting of the bar. A forceful and full rotation of the arms "elbows up" and a "chest up" position aids in a strong receiving and recovery of the bar.

In receiving the bar, athletes sometimes rack the bar on the upper chest and neck. The bar should rest on the front and top of the shoulders. This bar placement is a natural shelf. Telling the athlete to shrug and roll the shoulders forward will provide a good shelf. If flexibility is a problem, a narrower grip and/or a slight release of the bar is recommended.

Full body extension using trapezius muscles with elbows out provides necessary leverage.

Shrug and roll shoulders to provide a good shelf for the bar.

When dropping down to receive the bar, sometimes the bar crashes onto the athlete's shoulders or it may make initial contact on the chest and then roll up onto the shoulders. The bar and shoulders should meet in a controlled fashion; not doing so usually is a timing problem. The coach should emphasize timing the shoulder meeting the bar at its apex.

During the receiving of the bar, athletes may catch the bar in an improper stance position. The athlete's feet may be placed too narrow and on the toes. The athlete should attain a flat-footed, slightly

Previously mentioned was the premature bending of the arms in the pulling movement. It should also be mentioned that if the elbows are not turned out during the correct timing of the arm pulling action, a reverse curl movement occurs. This incorrect elbow action due to the action-reaction principle launches the body away from the bar. Again, if the bar-body distance increases, it takes away from the proper leverage.
wider stance than was used previously in the pulling phase. A wider stance with the feet flat on the floor helps with balance and a stronger position during the recovery.

Feet should be flat on the floor, slightly wider apart than at the start.

2. Are there any special safety and/or spotting considerations for the beginning lifter learning the power clean?

Huegli: The most important safety aspect when learning the power clean is to begin with light weight and learn proper technique.

Our athletes use a weightlifting belt for the power clean. We feel it provides psychological and to some degree physical safety for the athlete.

We will spot the heavy lifts by standing behind the lifter to prevent him from getting into trouble as he attempts to catch the bar. The spotter must be alert because he may be required to help balance the athlete by supporting the waist just as the bar is caught.

Bielik: No spotting should be used in the power clean. For safety, the lift should be performed on a platform. A platform serves as a natural "stay clear" boundary for the other athletes. After the completion of a repetition, the bar should be lowered to the thigh and then dropped to the platform. The platform should have a rubber contact area and the weights should be bumper plates.

3. Are there any prerequisite strength or skill requirements before beginning lifters should include the power clean in their workout?

Huegli: The athlete should have a base of total conditioning. Exercises like sit-ups, hyperextension, upright rowing and shrugs are valuable in the conditioning of the athlete for power cleans. Additionally, I like to have the beginner competent with the dead lift using a power clean grip. The athlete learns how to properly lift the weight off the ground using his hips, legs and back and at the same time develop those muscle groups. The purpose of the lift is to help learn and prepare for the power clean, not to emphasize development of the deadlift.

Biergen: First of all, at our high school we do not spot in the power clean. I tell my kids to never save a weight. If the student/athlete has to struggle with a weight then the weight is too heavy for proper technique.

Safety--yes! We feel, like I noted in question 1, that the lower back and power zone (hips and thighs) need to be trained before we allow the kids to lift poundage in the power clean. This is the biggest safety consideration of the clean.

Bielik: We have no special strength requirements prior to starting the power clean exercise. Of course, with our weaker athletes, the lift is harder to master. Strengthening the difficulty is usually associated with the lower back and thigh musculature. In that case, back hyperextension, good mornings and squatting variations are emphasized.

Our predominant problem with the power clean concerns wrist and shoulder complex mobility. Without a fair amount of flexibility, critical technical problems will occur. Athletes should utilize a few specific stretches paired with the front squat exercise (clean grip) and the power clean. Within two weeks, most of our skill problems associated with shoulder complex and wrist immobility are eliminated. Below are a few flexibility exercises specific to the shoulder complex.
4. Are there any particular instructional methods you have found helpful when teaching the power clean to your athletes?

Huegli: To prevent injury and to ensure that the athletes properly understand and can perform the power clean correctly, they learn first by using a broomstick, then the bar and then they add weight. The early training with the power clean involves breaking down the lift into components and training each part. Dead lift, hang power shrug, hang pull, hang power clean and power clean are the components and the sequence that we teach in putting the power clean together. This allows the athlete to understand and safely learn each part of the lift.

Burgener: Being a former Olympic lifter, I feel I have a knowledge and technique advantage over other strength coaches. This has given me the ability to demonstrate the clean to my lifters. This demonstration, I feel, has been the best tool for my lifters in learning the proper action of the clean. Basically, I use the reverse method of teaching the clean—I start backwards. Let me say, however, that I do teach my athletes how to pick the bar off the floor first.

Bielik: We primarily use verbal communication when instructing athletes in the power clean. Frequently we get on the platform and touch the shoulder, back or arm to emphasize a position. Trying to communicate effectively is a never-ending process and necessary for a lift as technical as the power clean.

5. Do you use any audio-visual aids or special equipment to assist in teaching your athletes how to perform the power clean?

Huegli: We use blocks for the lifter to learn from the power position or at a height greater than floor level.

Burgener: Yes. I try to use visualization. Videos, charts, magazines, and personal demonstration. The United States Weight Lifting Federation in Colorado Springs has an excellent wall chart depicting the various stages of the power clean and drills to go along with each stage. The NSCA has a video that breaks down the proper sequential action of the power clean.

Bielik: Using a broomstick to ensure a proper body-to-bar relationship and bar path during initial technique training is helpful. Periodically, the broomstick is part of the warm-up when athletes mimic the power clean prior to using the loaded bar. In the platform area we have several photo sequences and illustrations under plexiglass. These pictorial illustrations aid in visualizing the proper technical stereotypes.

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