Coaching Optimal Technique in the Snatch and the Clean and Jerk — Part III

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Editor's Note: This is the third article in a three-part series.

Once the techniques for the snatch and clean and jerk have been mastered, the athlete is ready to begin learning the squat clean off the floor. The variation that should be added is the bounce out of the bottom position. Utilizing weights in the 75 to 85 percent range, the athlete should begin a series of movements that reinforce each phase of the squat clean. A set of two reps of each of the following exercises performed sequentially will help reinforce the correct patterns: deadlift to knees, deadlift to knees and shift to power, clean pull, power clean and front squat, squat clean and recovery.

During the catch, the athlete should tighten the musculature involved during the amortization phase, utilize the elastic components developed during the drop into “the hole” and bounce up into a front squat. While this may not always be possible while lifting heavy weights (85 percent, plus), it should be attempted whenever possible. The bounce may not be advisable during the development of young athletes due to the connective tissues of the knee, but it is a technique that is used at all levels of competition. The catch, tightening and bounce up out of the squat make the squat clean superior to the clean pull in development. The motor patterns and the subsequent muscular development of the torso and hips developed by the squat are superior to the lesser effects obtained by merely performing the clean pull.

The Jerk

The jerk is best learned with the bar resting on the shoulders behind the neck. This places the bar closer to the center of balance and does not involve the torso musculature to the same extent as conventional jerking in front of the neck. It also offers an opportunity to develop the correct motor patterns of the arms and legs without involving the torso musculature excessively.

The Push Press Behind Neck

The push press is best learned by first determining the ideal grip width, which may vary from the clean pull width. Weightlifting rules allow the athlete to change the grip width after the clean recovery from the squat to an optimal grip width for the jerk. This must be determined by supervised experimentation, taking into account the relative levers of the arms and shoulders, as well as the flexibilities of the joints. In the majority of cases in which the jerk grip varies from the clean grip, the jerk grip will be wider.

The foot stance will, in most cases, vary only slightly from the stance utilized during the clean pull. Some adjustment may be necessary to determine the ideal stance.

Coaching suggestions: All of the predetermined grip widths and stance widths will require adjustment throughout an athlete’s career, depending upon changes in body weight, which will require some increase in grip and stance widths.

Jerking movements are best learned by jerking the bar from behind the neck, since this places the weight over the center of gravity and requires less torso strength to support the bar during the dipping phase. As the lifter becomes technically more proficient, a weaning away to the front of the neck must occur. The bar should be taken from the rack by positioning it so that it rests on the trapezius and deltoid muscles after determining the appropriate grip. Many untrained athletes attempt to support the bar on the first thoracic vertebrae, which is usually uncomfortable and could result in injury.

Once the bar has been positioned it should be taken from the rack by standing erect and stepping back from the rack.

Coaching suggestions: Rack height should always be set so that the bar is lower than it will be when the lifter is standing erect. A fresh athlete may have no problem lifting a bar off the rack if it is set slightly higher, but problems may result when fatigued at the end of the set.

The athlete should now be prepared to dip and push the weight overhead. The torso should be erect and the chest expanded: the weight should be evenly distributed on the balls of the feet, and the heels in contact with the floor. The bar should be held firmly, but not tightly since this will inhibit the speed of the arm extension. The
head should be slightly forward to avoid the bar during the upward drive.

The dip should be a bending of the legs until the body is in the jump, or power position. This lowering during the dip should be controlled, and at a speed that does not permit the athlete from dropping out from under the bar. When the deepest point of the dip is reached, the athlete should attempt to jump upward, going up on the toes. If the back is not tightly arched, the force from the legs will not be completely transmitted to the bar.

The athlete must not stop at the bottom of the dip, but rather begin the rebound immediately with approximately the same timing used in jumping.

Coaching suggestions: As athletes progress to heavier weights, the elastic properties of the barbell must be considered. Care must be taken to insure that the athlete is not beginning the upward drive while the ends of the bar are still moving downward. The drive must be timed so that it commences at the precise instant the ends of the bar begin rebounding upward.

Once the legs are extended, the arms must come into place instantaneously, driving upward as forcefully as possible. The elbows should be pointing downward at the beginning of this arm drive. If they are pointing forward or backward they will displace the bar from its vertical pathway.

After the legs are extended up on the toes, they should resettled back on the heels, with the knees stabilized, but now necessarily locked. The bar should now be pressed out to a locked position overhead and the head should simultaneously return to the erect position. At the end of the lockout, the bar, the ears, shoulders, hips and ankles should be in vertical alignment, which is the most stable supportive posture.

The behind the neck push press require execution of the basic mechanics of the dip and drive and the action of the arms, although the timing on the arms will be considerably slower than in an actual jerking movement.

Once the athlete has mastered the push press, progress can continue by performing the power jerk from behind the neck, which incorporates a second bending of the knees and hips to catch the weight. This exercise is much more dynamic and similar to the split jerk.

Power Jerk Behind Neck

The starting position and drive for this movement are identical to that of the push press, but the movement varies in the lockout of the elbows as the knees bend. The arms lock dynamically while the knees simultaneously bend until the bar is supported overhead. At the finish of the movement, the arms are actually pushing the body down as much as they are pushing the bar up. The dynamics of the arm movement in this exercise are almost identical to those employed in the split jerk. The athlete should freeze momentarily in the bent-knee stance in order to develop the correct patterns for balancing the weight overhead before returning to an erect stance.

Split Jerk Behind Neck

The stance for the split should be studied to determine the optimal foot positions. The front foot may be either right or left, although it is most comfortable for most right handed athletes to favor the left leg forward. A lunge stance is most favorable. If necessary, the athlete should be able to completely bend the knee forward at the ankle, with the hamstring resting on the lower leg or calf. If the feet are not positioned far enough apart fore and aft, this bending of the foreleg will not be possible. The knee of the rear leg should not be locked during the split movement or the hips will be forced forward and will subsequently cause the shoulders to be aligned behind the bar. The feet should be pointed slightly medially by contraction of the thigh mediators. This will prevent the hips from collapsing or the rear foot from pushing out, both common problems when performing the jerk.

The drive for the split jerk is identical to the push press and power jerk. The difference is the movement of the feet into the split. The rear foot should move back rapidly, skimming the platform before coming to rest; the front foot should lift clear of the platform before coming to rest. The rear foot should strike first, but if the forefoot strikes first the athlete will be forced backward, making it difficult to align the bar, ears, shoulders and hips. An imaginary vertical line should drop down through these points to provide the soundest supportive structure.

The recovery phase of the exercise should begin by leaning backward slightly and pulling the forefoot back to the line on which the jerk drive started. The rear foot is then brought forward until the athlete is in an erect posture.

Split Jerk Proper

The success of the split jerk proper is largely dependent upon the ability of the athlete to maintain an erect torso during the dip and drive phases. A forward bending of the torso during the dip or drive will direct the bar forward, and it will come to rest in a position not supported by alignment of the ears, shoulders and hips. Maintaining an erect torso and a straight drive is facilitated by the selection of the optimal grip width, the angle of the arms during the dip and the strength of the torso. Problems often result for athletes with an excessively high ratio of upper arm length to forearm length. Black athletes in particular have a problem in this area, thus they often hold the bar on the chest with a very high elbow position. This means that the arms will have a very minimal effect on the initial drive, and most of the force will have to come from the leg dip and thrust. The optimal angle of the arms during the dip and drive should be similar to that involved in the military press. The problem of maintaining an erect torso can be remedied through the performance of front squats in an erect position with great emphasis placed
on arching the back throughout the movement.

**Push Press**

The push press (in front of the neck) should be practiced to develop the basic dip and drive techniques, until they are well stabilized.

**Power Jerk**

The power jerk (in front of the neck) should then be practiced to improve the dip and drive techniques and to further enhance the dynamics of the arm movements. Slightly heavier weights should be used to help develop erect torso position.

Once the split jerk proper and the push press have been mastered, the split jerk proper should be easier to learn. At this point it might be judicious to practice overhead lunges (lunges performed with the bar held overhead) in order to reacquaint the feet with the proper stance and balance.

**Split Jerk**

The split jerk should commence with the dip, which was mastered previously. The amount of weight used in a heavy jerk with a high quality Olympic bar will require a great deal of practice to acquaint the nervous system with the dynamics of the bar bend. As the legs drive upward, the arms simultaneously drive the bar overhead so that the body is below the bar, and the elbows lock as the bar and athlete's body stop momentarily. The phenomenon of over-jerking must be avoided. In this situation the body goes too deep into the split and the weight actually drops after reaching its apex, causing a jarring effect that may result in an unlocking of the elbows.

The timing of the jerk is very critical once the drive has commenced. Stopping the bar, locking the elbows, the drop of the body and front placement of the foot must occur simultaneously to perform the jerk properly. The placement of the rear foot should occur prior to the aforementioned stops.

**Coaching suggestions:**

If shoulder flexibility is a problem, proper stretching and warm up must occur prior to each training session. Athletes with a history of performing the bench press using heavy weights without stretching the shoulders overhead may find it particularly difficult to learn the proper overhead posture. Periodic abstinence from the bench press may be helpful.

The correct jerk grip width must be determined, and it is possible that it will vary from the optimal clean grip width. During the performance of the clean and jerk, it is permissible to readjust the grip after recovering from the clean. Remind the athlete to relax the hands during the dip and drive, as this will result in faster arm movement.

The push press, power jerk, split jerk sequence is the most rational for learning the correct technique. Each movement uses different parts of the musculature and nervous system in different ways, and the athlete will benefit from this variation.

**Clean and Jerk**

Once the athlete has mastered the clean and the jerk, both movements should be practiced in tandem to master the lifts. Quite often, the jerk will feel lighter after the clean, the reasons for which I am not certain, but this has been my experience as well as that of many of the athletes I've trained.

While many athletes prefer to split the training of the two phases, some clean and jerk training must be performed each week in order to prepare the body for the tremendous demands placed on it by the double movement. For those coaches interested in utilizing the clean and jerk as a training exercise, they should be aware that it places tremendous stress upon the various systems of the athlete, and as such is an excellent method for developing recuperative capacities for anaerobic sports that require maximal efforts with short recuperation periods.