Coaching optimal technique in the snatch and the clean and jerk

Part III

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The squat clean off floor (Figures 21, 22, 23, 24, 26)

Once the previous movement has been mastered, the athlete is ready to begin learning the squat clean off the floor. The variation that should be added here is the bounce out of the bottom position. Utilizing weights in the 75 to 85 percent range, the athlete should begin going through a series of movements that reinforce each phase of the squat clean. A set of two reps of each of the following performed sequentially will help to reinforce the correct patterns:

- Deadlift to knees
- Deadlift to knees and shift to power position
- Clean pull
- Power clean and front squat
- Squat clean and recovery

During the catch, the athlete should tighten the musculature

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Figure 21. Begin with bar on floor, arms just outside knees.
Figure 22. Extending the legs only, lift the bar to the knees.
Figure 23. Beginning the power position, weight shifted forward.
involved during the amortization phase and 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 during the lifting of heavy weights (85 percent plus), it should be attempted whenever possible. The use of the bounce may not be advisable during the development of the young athlete 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 are what make the squat clean superior to the clean pull in the development of an athlete. The motor patterns and the subsequent muscular development of the torso and hips developed through 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 (Figure 27). This places the bar more nearly over 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 (Figures 28, 29)

The push press is best learned by first determining the ideal grip width, which may vary from the clean pulling 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 empirical 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 where 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 obtain a stance that will be ideal for the individual.

Coaching note: All of the predetermined grip widths and stance widths will probably need to be adjusted throughout the career of the athlete depending upon the change in body weight. Increases in body weight 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 will have to take place. The bar should be taken from the rack by positioning it so that it rests on the trapezius and deltoid muscles after the appropriate grip has been taken.

Many untrained athletes attempt to support the bar on the first thoracic vertebrae, which is usually an uncomfortable practice that could result in unnecessary injury.

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

Coaching note: 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 problems lifting a bar off the rack if it is set slightly higher, but problems may result when fatigue has set in 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 situated on the balls of the feet, although the heels are in contact with the floor. The hands should be holding the bar firmly, but not tightly since this will inhibit the speed of the arm extension. The head should be craned slightly forward to prevent the bar from striking it during the upward drive.

The dip should basically 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 note: As athletes progress to the point where heavier weights are utilized, a factor that must be considered is the elastic properties of the barbell. 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 when the ends of the bar begin their rebound upward.

Once the legs have 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 a vertical pathway.

After the legs are extended up on toes, they should resettle back on the heels, with the knees stabilized, but not necessarily locked. The bar should now be pressed out to a locked position overhead. The head should simultaneously return back to an erect position. At the end of the lockout, the bar, the ears, shoulders, hips and ankles should be in vertical alignment. This will result in the most stable supportive posture.

The behind the neck push press will teach 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 they will be in an actual jerking movement.

Once the athlete has mastered the push press, progress can continue by employing 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.

The power jerk behind neck (Figures 27, 30)

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 bending of the knees is brought into play. 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-kneed stance in order to develop the correct patterns for balancing the weight overhead before returning to an erect stance.

The split jerk behind the neck (Figures 27, 31)

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 of the ankle with the hamstring resting on the lower leg or calf. If the feet are not positioned sufficiently far 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 portion 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 mediotors. This will prevent the hips from collapsing or the rear foot from pushing out, both common problems in faulty jerks.

The drive for the split jerk is identical to that of the push press and power jerk. The difference here is the movement of the feet into the split. The rear foot should move rapidly backward, 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. If the forefoot strikes first the athlete will be forced backwards, making it difficult to align the bar, ears, shoulders and hips. An imaginary vertical line should be capable of being dropped down through these points to provide the soundest supportive structure.

Recovery should take place leaning backwards slightly and pulling the forefoot back to the line on which the jerk drive originally started. The rear foot is then brought forward until the athlete is in an erect posture.

The 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 that will not be supported by an alignment of the ears, shoulders, and hips. Maintaining the erectness of torso and the straightness of 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 those athletes with an excessively high ratio of upper arm length to forearm

Figure 31. Lunge stance with left leg forward.

Figure 32. Basic dip of push press in front of neck.

Figure 33. Drive phase of push press.
length. I have found that black athletes in particular have a problem in this area, and they often have to 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 would be that involved in a military press. The problem of erect torso maintenance can be remedied through the performance of front squats in an erect position with great emphasis being placed on arching the back throughout the course of the movement.

The push press (Figures 32, 33)

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

The power jerk (Figures 32, 34)

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 employed in the power jerk in order to help develop erect torso position.

Once the two previous movements have been mastered, the split jerk proper may be most easily learned. It might at this point be judicious to practice some overhead lunges (lunges performed with the bar held overhead) in order to reacquaint the feet with the proper stance and balance.

The split jerk (Figures 32, 35, 36)

The split jerk should commence with the dip as mastered previously. The amount of weight that can be utilized in a heavy jerk with a high quality olympic bar will require the athlete to practice a great deal in order to acquaint the nervous system with the dynamics of the bar bend. Once the legs have imparted momentum to the weight, the arms should be used to simultaneously drive the bar overhead and the body below the bar, the elbows locking as the bar and athlete's body stop momentarily. The phenomenon of overjerking must be avoided. In this situation the athlete pushes the body 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. The stopping of the bar, the locking of the elbows, the drop of the body and the placement of the forefoot must be simultaneous for a perfectly executed jerk to take place. The placement of the rear foot should be just slightly prior to the aforementioned stops.

Coaching notes: If shoulder flexibility is a problem, proper stretching must be employed prior to each training session. Athletes with a past history of performing a large amount of bench pressing without stretching the shoulders overhead may find it

Figure 34. Power jerk in front of neck.

Figure 35. Leg and arm movement of the split jerk must be coordinated.

Figure 36. Final position of the split jerk.
particularly difficult to learn the proper overhead posture. Periodic refraining from bench pressing may be helpful.

Correct jerking grip width must be determined, and it is possible that it will vary from the optimal cleaning grip width. During the performance of the clean and jerk, it is permissible to readjust the grip after the athlete has recovered from the clean. Remind the athlete to relax the hands during the dip and drive, as this will result in a 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.

The Clean and Jerk
Once the athlete has mastered the clean and the jerk as separate entities, both movements should now be practiced in tandem to master the lift. 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.

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