

Why are short rest periods between sets recommended? The nervous system remains responsive to the explosive efforts if the rest time is minimal.

Explosive strength and acceleration are at least 50% of our success at Westside. By now you know that we train our squat between 50 and 60% of our contest best. We do box squatting below parallel in training, and we use supportive gear at the meet.

When using weights over 90% in the classical lifts (bench, squat, deadlift, snatch, clean & jerk), troubles often occur in neuromuscular coordination. However, knowing what your box record is will provide some interesting information.

Dr. Tamas Ajan and Prof. Lazar Baroga advise doing speed training between 65 and 80% to accommodate the relationship between force and velocity. Todd Brock's best record box record is 730. His training weights with just the bar weight range from 455 to 565. This represents 62.5-77.5%, slightly under their recommendations. However, Todd does wear groove briefs. If less weight than 455 is used, the bar speed is too great to produce adequate force. If more than 565 is used, the bar speed decreases, and thus force is decreased.

The force that is developed doing the lift is proportional to the weight of the barbell and the speed of execution ( $\text{force} = \text{mass} \times \text{acceleration}$ ). That's why you can stand on thin ice, but you can't jump on it. It is known that by using only 154 pounds, as much as 264 pounds can be generated by increasing velocity.

How do we increase acceleration? We use three methods. The first is stripping weight off the bar during a lift. We use Kowalczyk's Weight Release device to do this. This is the simplest and safest way we have found. On dynamic squat day, with the weights at 50 and 60%, Todd will use 10-20% more than his normal squat weight. This is 50-100 extra pounds on the 60% week (480) in the eccentric phase of the lift. When the weight releases on the floor, he then raises up the original 480. Because this is such a contrast, he will explode upward without that additional 100 pounds. This is known as the contrast method. With the additional weight in the eccentric phase, muscle mass is easily gained.

After 5 weeks, the Weight Releases are dropped and chains are introduced for 6-10 weeks or until their training result is diminished.

Dave Tate and Joe Amato like chains very much, because the chains raised their squat from about 800 to 870 and 865, respectively.

# TRAINING

## SPEED STRENGTH

as told to POWERLIFTING USA by Louie Simmons



Chris Baxter does board presses with the flex bands (Courtesy Sims)

Their training weights ranged from 52.5 to 62.5% of 870. These percents are based on the regular bar weight plus the amount of chain weight that remains on the bar while sitting on the below-parallel box. With Dave's and Joe's strength level, they use 160 pounds of chain, 80 pounds of which remains on the bar after deloading. The weights are 375 plus 80 pounds of chain, roughly 53.5%, or 455, for 10 sets of 2 reps, waved up to 62.5% (465 bar weight plus 80 pounds of chain, or 545).

Let's look at the function of the chains. When standing up with 375, the full 160 pounds of chain are in effect, equalling 535. While lowering onto the below-parallel box, the weight is reduced to 455, or roughly 52.5% of 870. The deloading process occurs eccentrically. After sitting on the box statically, the concentric phase begins and the re-loading proceeds, until the full weight of the chains plus the original bar weight is once again 535.

At 62.5% the bar weight is 465 plus 160 pounds of chain, equalling 625, at the top, and in the yielding phase it is reduced to 545. The percent is measured while sitting on the box. By using this method, we are accommodating resistance per-

fectly. This is a great way to increase acceleration.

But is there a better, more effective way to build explosive strength plus acceleration? I say yes. It is done with strong rubber bands (Flex Bands) that are attached to the bar and to the bottom of your power rack or Monolift.

Machines cannot accomplish this accommodation to resistance. Garhammer, an expert in the exercise field, tested single-joint strength curves by using a variable-radius cam and found just a small amount of success in strength gains. The studies were developed on the assumption that a maximum effort uses muscles only at the point known as the minimax, or sticking point. This is known as the peak contraction principle. The research showed that the variable-radius cams held no advantage over traditional barbell training, largely because normal human movement or sports activities do not match the movement done with the cam device and because different lifters have different strength curves because they possess different leverages at any point of the lift. Two men may deadlift 700, but one may be stronger off the floor and one may be stronger at the top. No testing has

been reported on multiple-joint exercises.

However, by using chains and bands, I believe we can match the strength curve and accommodate resistance very effectively. The lower the box, the less weight can be used, and the higher the box, the more weight can be used. Chains and bands can deload and reload the weight during the squat movement to maintain resistance at all positions.

Two things can be accomplished with the rubber bands: (1) more actual bar weight can be used while sitting on the box; (2) if lowering, or yielding, contributes to raising, then with the addition of bands that literally pull you down, the stretch-reflex system is greatly stimulated and kinetic energy is transferred into the muscles. This kinetic energy is released in the eccentric portion of the lift. Greater muscular force occurs as a result of the bands.

Again, place the Flex Bands around the bottom of your power rack or monolift and loop the other end around the bar, one on each side. When an 800+ squatter is using the bands, the tension should equal 150 pounds at the top and 80 pounds while sitting on the box. As you will note, the loading and deloading process in pounds is very close to chains. The main difference and an advantage is that the bands pull you down in both the eccentric and concentric phases.

It is advisable to use a combination of chains and weight release devices, bands and weight release devices, or chains and bands. The last combination works well for the bench press as well. A platform is available for the Flex Bands. It is perfect for pulling, both for deadlifting and clean and snatch pulls.

It has been said that when you get old, you slow down. But you can also slow down when you are young by training too heavy or slow. Neither the young nor old need to slow down if you keep acceleration in mind. Remember that the speed of movement is controlled by external resistance. So concentrate on explosive strength and learn to accelerate with chains and bands. Then and only then will you recognize your true potential.

Remember that short rests between sets work best (45 seconds for squatting and 60 seconds for benching). Why? The central nervous system remains responsive to the explosive effort if the rest interval is minimal and, of course, if your general physical preparedness is high. One must maintain a high work capacity, i.e., sports fitness, something we all must have.

To order the Flex Bands, call Jump Stretch, Inc., at (330) 629-2511.