

the **CrossFit** JOURNAL ARTICLES

CrossFit and Powerlifting

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Council on Strength and Fitness) trainer, and I do a little personal training off and on, usually for friends. I have participated in various types of athletic events, from competing on a relay team in the grueling Canadian Death Race on three occasions to competing at the state level in powerlifting. I consider myself a balanced and well-rounded athlete, and I try to develop these same qualities in all my athletes.

Over the past six years our school's powerlifting team has been quite successful. We have had about thirty athletes advance to state championship contests and eight have won first or second place. Three have gone on to win national championships, and two of

Last year (March '04 CFJ) we learned of Mark Twight's successful application of CrossFit to endurance efforts. This month Calhoun High School's Coach Jason Bagwell shares how injecting CrossFit into his powerlifting program produced record lifts.

My name is Jason Bagwell and I have been the coach of the Calhoun High School (Port Lavaca, Texas) powerlifting team for the past six years. I am also a certified (National

those have made this year's U.S. World Team and will represent the United States at the IPF Sub-Junior (18 years or less) World Championships in September.

Several months ago I came across a link to CrossFit.com, and, after sifting through the site for a while, I was hooked. As someone who appreciates the value of hard work, I knew I had to find a way to incorporate this type of training and conditioning into my team's regimen. I

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will first describe our existing strength training system and then show how we have incorporated CrossFit methodologies to take the program to an even higher level.

Our principal strength training system for the past six years has been based on the Russian style of training of the 1970s and 1980s. Much of the theory of this style of training can be found in the writings of Tsatsouline, Sheiko, Smolov, Medvedyev, and Roman. In a nutshell, it involves low reps (never more than 5 and usually 3 or less) and moderate to high sets with moderate to high intensity. We use the same definition of intensity as the Russians (percentage of maximum) and classify our lifts in 5 different zones of intensity.

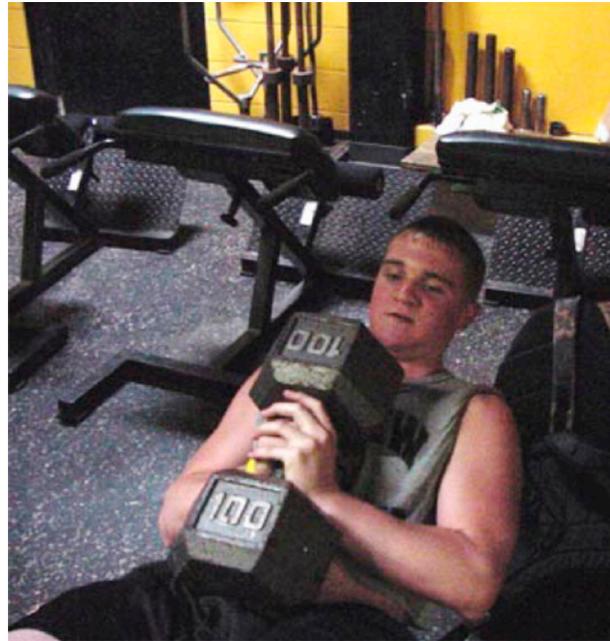
Zone	Intensity
1	51 to 60%
2	61 to 70%
3	71 to 80%
4	81 to 90%
5	91 to 100%

The most important piece of the whole strength training system is the number of barbell lifts (NBL) in each zone, which determines the intensity of a training week or month or other period of time. Here is an example:

Squat:

Week	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	NBL
1	10	20	30	---	---	60
2	10	10	40	10	---	70
3	10	10	15	20	10	65
4	10	20	30	35	---	95

Week 4 has the highest total number of lifts (95), but week 3 has the highest intensity since it has more Zone 5 lifts than the other weeks. Russian research has demonstrated that the number of lifts above 90% of maximum correlates highly with a lifter's overall improvement. However, there is a fine line that has to be observed. One cannot simply say, "Then we will always use weights of 90% and above to train." Constant training with Zone 5 lifts would quickly lead to physical and nervous-system overtraining. The crux of our



entire system, then, is careful planning of the number and timing of Zone 5 lifts. As a general rule, during the preparatory and off-season periods there are very few Zone 5 lifts and much of the athlete's training focus is on achieving high volume. During the competitive season, Zone 5 lifts increase and overall volume decreases as the athlete peaks for competition.

I think this strength training system is one of the best at the current time. Most of the powerlifting teams that we compete against use systems that are based on outdated training principles. A typical routine would be two weeks of 5 sets of 8 reps, two weeks of 4 sets of 6, two weeks of 3 sets of 4, and then repeat the cycle. While these types of routines will certainly make people stronger and have developed thousands of athletes, I feel that they are extremely outdated; the Russians stopped using these types of routines in the early 1960s. Russians, Bulgarians, and others using similar techniques have dominated the sports of weightlifting and powerlifting for the past thirty years. Their systems have clearly developed the strongest people in the world.

When I initially discovered CrossFit, my first thought was that it would be an excellent way to improve an athlete's work capacity. For example, one standard workout that we perform quite often is 8 sets of 4 reps at 85% of maximum on the squat and bench. Doing these exercises back to back with that intensity level can be

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quite a strenuous workout. An athlete who is not well conditioned is likely to have a hard time completing this type of workout as fatigue sets in and his cardiovascular system becomes more and more taxed. CrossFit has eliminated this problem for us. The conditioning that we have achieved allows our athletes to work harder in the weight room—and a harder working athlete is a stronger athlete.

The first step I took to incorporate CrossFit into our program was to search through the archives for workouts that our equipment would support and that would allow all athletes to exercise at the same time. For example, since we have no rower, all workouts with rowing were eliminated or another exercise was substituted. Next I looked for workouts that include running. While we use all the various types of workouts that CrossFit comprises, we tend to like workouts that involve running, in my opinion, as they are usually more intense. I also looked for workouts that could generally be completed in 15 minutes or less. Since the athletes still perform a strength training workout before or after the CrossFit session, shorter CrossFit workouts help keep the total training time to about an hour. After compiling a database of several hundred workouts that fit these criteria, I began formulating how to plug them into the training process. I came up with two variants that have worked extremely well for us in preparatory and competition phases of training.

In non-competition training, each of the three powerlifting events is trained twice a week and a CrossFit workout is completed daily. Monday's workout starts with CrossFit before the specific powerlifting training; on Wednesday the order is reversed, with the same CrossFit workout following the strength training. Tuesday and Thursday follow a similar pattern, except with a different CrossFit workout. This is "fatigue cycling," a Russian technique wherein you alternate training heavy

lifts either early or late in a workout, some days hitting them when fresh and some days when already fatigued. The first six weeks of our training season follow this format. As you can imagine, this week would be pretty brutal and would definitely be too much for a beginning athlete. Easier or scaled-down CrossFit workouts can be chosen to lessen the intensity of a given week. This variant has given our team the greatest improvement over the past year.

In competition weeks, we still use fatigue cycling, but the number of training days per week decreases from four to three, and the number of CrossFit days decreases from four to two. This type of format is used for 10 to 14 weeks during our competitive season.

In both preparatory and competition phases of training, we scale the intensity and demands of the CrossFit conditioning, like the focused lifting work, to the abilities of individual athletes. Those in the heavier weight classes obviously will have trouble with some exercises such as pull-ups. This problem can be solved by substituting a similar and simpler exercise for the more difficult version (such as pull-downs for pull-ups). The same holds true for the running workouts. A heavier athlete may run laps of only 200 meters instead of 400 meters. With a little thought and creativity, all the workouts can be scaled to fit the abilities and needs of the athletes involved.

Variant 1: Preparatory Weeks

Monday	Tuesday	Wednesday	Thursday
"Helen"	Deadlift 5x3 85%	Squat 8x4 85% Bench 8x4 85%	7 rounds for time: 10 power cleans 15 pushups
Squat 8x4 85% Bench 8x4 85%	7 rounds for time: 10 power cleans 15 pushups	"Helen"	Deadlift 5x3 85%

Variant 2: Competition Weeks

Monday	Tuesday	Wednesday
Squat 10x3 85% Bench 10x3 85%	Deadlift 10x2 85%	5 rounds for time: Run 400 meters 50 wall ball shots 30 pushups
"Fran"		Squat 8x4 85% Bench 8x4 85%

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Overall I have noticed at least three improvements that the inclusion of CrossFit workouts has brought to our program:

1. Increased work capacity. A better-conditioned athlete can work harder, and an athlete who works harder will get stronger. Nothing compares to CrossFit when it comes to developing work capacity.

2. Increased mental toughness. The first time I completed “Helen,” I was about to puke. This level of effort has a way of bringing a person’s concentration into sharp focus. A person who works this hard develops a never-quit attitude and a desire to do well all the time. When our athletes are doing a CrossFit workout, they are going at max speed; they have met Pukie on several occasions, and all will tell you that this intensity has helped them become better athletes.

3. Decreased body fat and increased flexibility. Full-range, high-repetition exercises such as wall ball and squat cleans have helped our athletes increase flexibility and range of motion, and the high intensity workouts have dramatically improved body composition. I estimate that all our athletes below the 220-pound weight category have single-digit bodyfat levels.

I would like to encourage everyone involved in the strength community to implement CrossFit workouts and principles into your training programs. Regardless of your sport or endeavor, it will take your program to the next level. This year we had a 97-pound female athlete squat 260 pounds, a superheavyweight female athlete squat 540, and a 181-pound male athlete squat 600. This represents at least a 10% improvement for each of these three athletes during the past year, when the only change made to our program has been the inclusion of CrossFit workouts and principles.



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