

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

Coach Greg Glassman defines CrossFit, in his 2002 CrossFit Journal article as,

"a core strength and conditioning program. We have designed our program to elicit as broad an adaptational response as possible. CrossFit is not a specialized fitness program but a deliberate attempt to optimize physical competence in each of the ten recognized fitness domains."

However, with the growth of CrossFit in popularity, the goals, needs and abilities of individuals have become divided into three specific groups:

"Fitness Group"- These are the folks just looking to CrossFit for general fitness. An increase in work capacity across broad time and modal domains is just what the doctor ordered. This is probably 80-90% of the affiliate population at any gym, and the program does not need to be modified.

"Advanced/Athlete Group" - These folks are typically still athletes or former athletes. They are looking for CrossFit to improve their general conditioning and strength. GPP may be appropriate with some tweaks. Generally, however, this group has little interest in competing in CrossFit specific competitions and again, the program does not need to be modified.

"Competitive CrossFit (CCF)" – The sport of CrossFit, while it may not be the largest segment of the growth in CrossFit, is absolutely the most visible. Unlike those in the Fitness and Advanced/Athlete groups, those in the CCF group are training for a known event, at a known time. As CCF matures as a sport, the preparation must become more sophisticated. The program must prepare the athlete to perform optimally for elements they are most likely to see, as well as be prepared for unknown challenges. Because of the constraints of running an organized and televised global sporting event, limits have now been placed on the variety of elements that can make up the CCF events. Thus, in the last three years, HQ has, in effect, given the world a roadmap of directions on how to prepare for competition events.

THE INTENTION OF THIS PROGRAM IS TO PREPARE ATHLETES FOR THE SPORT OF CROSSFIT

With the still ongoing maturation of the sport of CrossFit, what have emerged are patterns in the design of CCF events courtesy of the competition staff at CrossFit HQ. With some study, here are some of the major patterns:

1. **CCF is the 10 minute met-con.** The average time of a CCF event is 10 minutes. In the last three years, the time duration of a CCF event has most often been between 7 and 12 minutes. Further, while many competitors seem more concerned with the "long" met-con, in reality, an event of 20-minutes or more actually occurs *less often than* the event of 5-minutes or less.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

2. **CCF primarily consists of 10-15 movements.** We also know, to a high degree of certainty, the elements the athlete will face. That is not to say we will know all the elements with absolute certainty. The breakdown appears to be as follows: The Olympic lifts and their derivatives account for nearly 30% of CCF events, six movements account for 50% and ten movements account for 70%.

3. **The athlete knows the timing of the event and to some degree, the volume he is likely to see.** The Open will likely continue to be one event per week over a 5 to 6 week period beginning in February. The Regionals will likely continue to be multi-day events occurring in April and May. And the Games will occur in July. While a few exceptions are obvious, like the ocean swim wod in the 2011 Games and the 100s wod in the 2011 Regionals, most wods are at least 100 reps but no more than 200.

Again, what has emerged over the years is a distinction between CrossFit as a fitness regimen and CCF. While one is preparing for the unknowns of the world, the other is preparing to perform optimally in events that will occur in a certain format, at a particular time, with a high degree of certainty. It was once adequate to just follow "main site" workouts. Then, in the last days of Aromas, it was "main site plus a little bit extra". Now, it is clear that even this is no longer adequate. Thus, the preparation or programming for each goal has to be different. The table below highlights the general differences between CrossFit as a fitness regimen and CCF:

<u>Programming for Competitive CrossFit (CCF)</u>	<u>Programming for General Fitness</u>
Macro, meso and micro cycles focusing on baseline conditioning, maximal strength, strength endurance, speed and skill competence	General physical preparedness
Undulating levels of volume and intensity highly dependent on cycle with rest and recovery built into workout	Generally consistent volume and intensity with periodic periods (days, weeks) of rest and recovery
Strength training prioritizing the Olympic lifts above the "Power" lifts	Strength training prioritizing the "Power" lifts above the Olympic lifts
Strength training which directly supports the development of the Olympic lifts (barbell squat, GHD, TGU)	
Strength training distinguishing dynamic effort and maximal effort days; planned changes in volume and intensity	Strength training utilizing consistent volume and intensity
Competence with and consistent exposure to higher order gymnastic skills (muscle-up, hspu, etc)	Competence with lower order gymnastic skills (pull-ups, push-ups, etc)
Competence with secondary elements native to CrossFit competitions (sleds, stones, yokes, etc)	

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

<u>Programming for Competitive CrossFit (CCF)</u>	<u>Programming for General Fitness</u>
Competence with tasks native to popular sport (i.e., throwing, sprinting, changing direction, tossing to target, striking with object, carrying, etc)	
Metabolic conditioning using <i>specific</i> modalities common to competitive CrossFit in <i>narrow</i> time domains rarely over 7 minutes but occasionally as long as 20 minutes and as short as a few seconds.	Metabolic conditioning using <i>broad</i> modalities common to CrossFit (classic CrossFit met-con) in <i>broad</i> time domains of 2 to 45 minutes
Focused aerobic conditioning using no-load, single modalities (running, rowing, swimming, biking) in <i>long-range</i> time domains (7+ minutes) and short/medium-range intervals	
Identification of and bias toward deficiency in any of the 10 general physical skills	No bias in any of the 10 general physical skills
Daily workouts, including warm-up, typically occur over 1.5 to 2 hours and possibly split in dual or triple sessions	Daily workouts, including warm-up, typically occur in less than 45 minutes

Since we know, to some degree, what to expect at a CCF event and we know some of the general differences between CrossFit and CCF programming, we can begin to better utilize and develop a specific training protocol for the unique needs of the CCF athlete. It is helpful to draw from current research which suggests:

1. The interplay between metabolic pathways is more complex than previously thought and not fully understood,
2. An athlete does not in fact train metabolic pathways *per se*, he trains the musculature that feeds the pathway (it's not the gas in the car, it's the fuel efficiency of the car),
3. Aerobic benefits are achieved through short duration maximum efforts (old news),
4. The aerobic contribution to short duration maximum effort occurs much sooner and to a higher degree than previously thought (new news),
5. Short duration maximum efforts contribute to the development of and contractile ability of type II (fast-twitch) and type I (slow-twitch) muscle fibers (making the car even *more* fuel efficient), while endurance training works just type I,
6. Generally, positive adaptations from short duration maximum efforts can be achieved in a fraction of the time of endurance efforts,
7. Recovery from short duration maximum efforts is generally higher than recovery from endurance efforts,

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

8. Gains in muscle strength and sport-specific speed improve performance in endurance-like events. However, gains in aerobic capacity alone (as measured by VO₂max) do not,
9. High-volume, long-duration, aerobically focused efforts provide no anaerobic benefit and in some cases have *muscle-wasting* effects.

What are the implications for CCF?

CCF is an endurance-like sport with both aerobic and anaerobic characteristics akin to middle-distance track and field events. A really good high school 800-meter runner's time in his event is about 2:00 while a really good high school miler will come in at under 4:30. Although the median CCF event approaches 10 minutes, given the starts and stops (transitions between movements, planned and unplanned rests, etc.) inherent in CCF events, the time under tension (TUT) is much less than 10 minutes. Additionally, the interval-like nature of the CCF event lends itself to slight recovery during the event for the athlete. In other words, the physical profile, especially aerobically, of the CCF athlete and a high-level middle distance runner are very similar.

Although CCF is an endurance-like sport, the research suggests that differential gains in endurance-like sports (as well as more explosive sports) are not made by increasing aerobic capacity beyond a baseline level, but by gains in skeletal muscle strength, while limiting TUT and sport-specific speed. This will also be true of CCF. The CCF athlete also needs to be able to develop speed throughout all the functional movements. The importance of developing speed in executing a full-range burpee is fundamentally no different than developing speed in a mile or 100 meter run.

THE BIG IDEA

"Less is more." - Ludwig Mies van der Rohe

Many of the concepts that make up this program are easily acceptable (i.e., focus on the Olympic lifts), however, there is one that will likely prove hard to swallow. And that concept is,

Metabolic conditioning using broad modalities common to CrossFit in time domains of more than 7 minutes are deleterious to performing optimally in all CCF time domains.

While many CCF athletes have embraced strength training programs and the idea of being efficient and swift in functional movement, the recent research further suggests there should be another shift in many of the training protocols of current CCF athletes. And that is:

Conditioning sessions should become shorter in duration with a requisite increase in intensity.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

Anecdotal evidence suggests the opposite has been happening. Athletes have been performing longer and more frequent training sessions. Research suggests this is detrimental to optimal performance. This last statement may seem somewhat sacrilegious. It is common in the CCF community to follow the axiom that to perform well in the 20 minute met-con, one must perform 20-minute or longer met-cons. However the research proves the contrary.

It is extremely difficult, if not impossible, to maintain an elite level of intensity in efforts greater than a few seconds, let alone a few minutes. However, the CCF athlete who has likely already had many years of physical preparedness under his belt will find it difficult to continue to make gains without engaging in bouts of high intensity training. Shortening the typical time domain of each training effort should in turn force an increase in intensity. Readers should keep the following in mind:

This program is a high level strength and conditioning program. Because the program is so heavily dependent upon the intensity (frequent heavy loads, heavy volume, near maximal speed) that the athlete brings to every workout, the majority of those engaged in CrossFit would not be able to fully benefit from such a program.

The fact of the matter is, they will not be fit, strong or technically proficient enough to be able to sustain the all-out efforts necessary to elicit positive results. In other words, *what works for the majority of CrossFitters looking for fitness and what has worked to prepare CCF athletes for Games past, is no longer adequate.*

THE PROTOCOL

"With CrossFit, we perform whole-body functional movements because those are the movements we need in sport, in life, in battle. We execute those movements at high intensity because that intensity produces all the positive adaptations found with CrossFit and maximizes our work capacity across broad time and modal domains." – Greg Glassman

All positive adaptations are produced through intensity, thus, it should be the goal of any athlete to maximize his ability to train intensely as often as possible. Based on the latest research and the needs of the CCF athlete, the following framework forms the template of an evidence-based, results-driven high intensity training protocol:

1. Development and maintenance of baseline aerobic conditioning
2. Optimal strength
3. Competition conditioning (speed development)
4. Skill competence
5. Testing, data collection and analysis
6. Periodization

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

1. Baseline Conditioning

CCF is most akin to endurance-like events that call on both the anaerobic and aerobic abilities of the athlete. Think 800 meter track and field runners. Here's the irony. Advantages gained in performance for endurance-like events like CCF (or even 5k runs) are not garnered by increases in aerobic capacity but rather increases in strength and sport-specific speed. Research (Weyand, et. al.) has shown that for athletes engaged in events similar to CCF, a baseline level of conditioning is all that is needed. Essentially, if an athlete can run 800 meters in just about 3:00-3:30, he is aerobically conditioned enough to participate in CCF at a high level and is aerobically prepared for this program.

Thus the first aim of this program is to develop and maintain aerobic conditioning at this level through:

Metabolic conditioning at a low to moderate pace using a no-load single modality (running, rowing, swimming, biking) in time domains of greater than 7+ minutes, but typically no more than 20+ minutes.

Conditioning in this manner makes up about 5-10% of the overall conditioning program. Some things are worth mentioning here. The focus on no-load, single modality and the emphasis on moderate pacing are instrumental in drawing the benefits of the aerobic activity while allowing for complete and rapid recovery from the bout. Additionally, the 7 minute time domain should put the athlete at about a mile if running (and 2,000 meters if rowing) which is likely the upper limit in distance for any CCF event and is coincidentally a pace of about 4.2 meters per second, the pace where research says you should be. It also represents, again coincidentally, the upper end of the bottom quartile of time for CCF events. Seven minutes is simply a good marker for regulating and managing endurance/aerobic efforts for CCF athletes.

2. Optimal Strength

"Athletes often miss the point of strength training. Some confuse it with conditioning. Others confuse themselves with powerlifters. The barbell is not there to make you a better man (or woman) by testing your mettle. That is what the court, the field, or the mat is for. The barbell is there to give you a strength advantage over an opponent of equal skill." - Pavel Tsatsouline

Much of the CrossFit world is enamored with maximal strength and the 1RM deadlift in particular. However, most opportunities to demonstrate strength in CCF events come in the form of progressive lifts in a timed event, e.g. the deadlift ladder in 2009 and the thruster ladder in 2011. Other opportunities include a second event that follows quickly before, during or after another event, like the max jerk after double Helen in 2010.

For CCF, the 20RM is more important than the 1RM and the fast 20RM is more important than the slow 20RM.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

Also, as was alluded to earlier, in CCF, the Olympic lifts are king. These lifts and their derivatives make up the lion's share, nearly 30%, of all the movements in CCF events. The power lifts in their purest form rarely appear in CCF events.

For the strength portion of the protocol to be useful to the CCF athlete it must draw as many benefits – increased maximal strength, increased speed, increased endurance, etc – while mitigating to every extent possible the downside. It appears that a program focused on the Olympic lifts, with the power lifts as support, is the most beneficial course of action for the CCF athlete. Given that the Olympic lifts make up nearly 30% of CCF events, it is important for the athlete to get strong enough to increase his performance in longer events, but not to the point of compromising his power. He must manage his TUT and maintain if not increase his power.

Thus, the second aim of this program is:

Strength training focused on the Olympic lifts, with the power lifts as support, in a manner that allows for progressive (20RM) rather than maximal (1RM) achievement.

All things being equal, the stronger athletes are faster over short and long distances. In many of the studies, the participants changed one variable in their training: They began strength training, they did not increase their endurance work. **This suggests a shift in what was known about training metabolic pathways.** Previously, it was believed that a reduction in fuel supply to the muscles in the form of ATP reduction was the cause of reduction in speed. The research suggests it is the inability of muscles to create enough tension due to muscular fatigue. **Muscle fatigue is the culprit. It's not the gas in the car, it's the fuel economy of the car. The objective is to reduce the rate of muscle fatigue by increasing the athlete's skeletal muscle strength, not by training the energy system.** This fact is critical to the next piece of the training protocol of the CCF athlete, which is to develop competition level conditioning.

3. Competition conditioning (maximal speed)

Once the CCF athlete is strong, or more accurately, while the athlete is getting strong and has reached a baseline level of endurance, the aim is to get him fast. As Glassman puts it, this is best done through increasing his power output.

"Power is defined as the 'time rate of doing work.' It has often been said that in sport speed is king. At CrossFit 'power' is the undisputed king of performance. Power is in simplest terms, 'hard and fast.' Jumping, punching, throwing, and sprinting are all measures of power. Increasing your ability to produce power is necessary and nearly sufficient to elite athleticism. Additionally, power is the definition of intensity, which in turn has been linked to nearly every positive aspect of fitness. Increases in strength, performance, muscle mass, and bone density all arise in proportion to the intensity of exercise. And again, intensity is defined as power." - Greg Glassman, Foundations, CrossFit Journal, Issue 1

If power/intensity is the time rate of doing work and most positive adaptations come from power/intensity, it stands to reason that the longer the time domain, the less intensity, and the less positive adaptation. However, in the past, CCF athletes have followed a steady

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

diet of broad modalities in broad time domains. In other words, their objective has been to train in all the metabolic pathways with longer workouts.

In the early days of the CCF events, athletes could draw few conclusions about what would appear in those events. So it may have made sense to train broadly. Now, with the maturity of the CrossFit Games, we can draw conclusions and adjust training accordingly. However, an anecdotal review of training regimens of CCF athletes remains dated. With more recent studies, new, improved and more relevant information for the CCF athlete is also available.

- The first type of research shows that single max. efforts become dominantly aerobic far sooner than old models predict (Figuerido, Gatin, Duffield, Dawson, Zouhal), et. al.).
- The second type of research demonstrates a progressive shift towards increasing aerobic contribution during repeated max. effort sprints. (Gaitanos, Putman, Bogdanis, Trump, Parolin, et. al.)
- The third type of research, demonstrates that all out efforts of 120 seconds or less are largely independent of aerobic power. There is no performance degradation in hypoxic environments. (Weyand)
- The fourth type of research observes sprint intervals have similar systemic and physiological effects as endurance training with a fraction of the training volume (Rakobowchuk, Gibala, Krustup, et. al.).

Together, this research establishes that short, intense training becomes predominantly aerobic very quickly and increasingly aerobic during high-intensity intervals. It shows physical adaptations like oxygen uptake can occur in very short but intense bouts. It goes to show that even if these short intense efforts do not increase aerobic capacity (which they do), it would matter little to the types of efforts CCF athletes need to perform. As even in oxygen depleted environments, the body depends very little on the glycolytic pathway for efforts similar to those in most CCF events. Finally, because short, intense training elicits similar results with less volume than long duration training, the athletes' capacity for recovery is enhanced. This has a cumulative effect, as he will be able to benefit from the next workout as well.

With the research above, an approach for competition level conditioning - speed - can be formed for the CCF athlete. The best way to maximize speed is to maximize power/intensity. And as has been shown, the best way to maximize intensity is through short and/or performance focused training (vs. time or task focused). How?

The third aim of the program is:

Sport-specific speed development in modal domains common to CCF in narrow performance based time domains rarely exceeding 7 minutes. This would make up about 70-85% of the conditioning of the CCF athlete.

General speed development using a no-load single modality short/medium-range (sprints) performance-based (vs. time or distance-based) intervals, making up 5-10% of the conditioning of the CCF athlete.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

Obviously, the 7 minute marker is not etched in stone. It should be viewed as a guideline on the upper limit of an effective time domain for CCF training. As the studies above point out, much of the benefit of longer single efforts, by either time or distance, can be produced in highly intense repeated efforts of as little as 10% of the event time or distance. (For example, 10 x 40 meter sprint repeats for a 400 meter event.) For the CCF athlete this could potentially mean highly intense repeated efforts of 1 to 2 minutes each, which is about 10% of the typical longest events he will face. In total, these repeats should be less than 7 minutes and rarely more than 12 minutes (unless there is a period of rest). Again, 7 minutes is not etched in stone.

4. Skill Competence

In a New York Times Op-Ed piece titled "Genius: The Modern View", David Brooks writes,

"The key factor separating geniuses from the merely accomplished is not a divine spark. It's not I.Q., a generally bad predictor of success, even in realms like chess. Instead, it's deliberate practice. Top performers spend more hours (many more hours) rigorously practicing their craft."

Put simply, the CCF athlete must practice higher-level skills, typically the gymnastics skills common to CCF and the Olympic lifts to some degree, in a deliberate manner to reach competitive level competence. The keyword here is **deliberate**. It is simply not enough to practice these skills more often than the typical CrossFit athlete. It is simply not enough to say, "practice handstand push-ups for 10 minutes." Deliberate practice would call on the athlete to break the movement down into component parts and drill each of those consistently. The CCF athlete must do this in a process-driven manner.

Brooks gives a few examples of deliberate practice:

"...Ben Franklin would take essays from The Spectator magazine and translate them into verse. Then he'd translate his verse back into prose and examine, sentence by sentence, where his essay was inferior to The Spectator's original. Coyle [author of 'The Talent Code'] describes a tennis academy in Russia where they enact rallies without a ball. The aim is to focus meticulously on technique.

By practicing in this way, performers delay the automatizing process. The mind wants to turn deliberate, newly learned skills into unconscious, automatically performed skills... By practicing slowly, by breaking skills down into tiny parts and repeating, the strenuous student forces the brain to internalize a better pattern of performance."

Brooke goes on to say this person would find a mentor or coach to help point out and correct errors and be a general guide toward improvement. He summarizes "genius" in this way,

"The primary trait [geniuses possess] is not some mysterious genius. It's the ability to develop a deliberate, strenuous and boring practice routine."

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

This approach needs to be adopted by the CCF athlete. There is likely an ideal moment to practice what one has learned. Practice too soon and the athlete's time is wasted. Practice too late and the athlete has forgotten the material and has to relearn it. The right time to practice is just at the moment one is about to lose the skill. There is also likely an ideal volume of practice, and certain skills should take priority over others when their difficulty and importance are considered.

Thus, the fourth aim of this program:

Daily skill development based on the relative importance (the frequency with which the exercise appears in CCF events) and difficulty of the movement coupled with consistent feedback from a coach.

5. Testing, Data Collection and Analysis

To any athlete, knowing that the training they are engaged in is allowing them to hit the markers they have set is critical. While this can be done in a "practice" environment under controlled conditions, the athlete should also seek to test himself in a competitive environment in events that mimic the events for which he is training. With that information gathered, he can then tweak his training, if needed, to allow him to meet his goals.

This program is designed with this in mind. Since much of the "training" work will not necessarily mimic CCF-like events (instead the conditioning is designed to *prepare* the athlete for these events), it is important for the athlete to engage in classic CrossFit wods and typical CCF-like events.

The fifth piece of this program includes,

- ***Metabolic conditioning in broad time (rarely over 20+ minutes) and modal domains – classic CrossFit, which will make up 5-10% of the total conditioning of the CCF athlete.***
- ***Occasional participation in "offseason" CCF events.***
- ***Regular training with similarly skilled CCF athletes.***

6. Periodization, Timing & Tempo Techniques

The purpose of training for the CCF athlete is to prepare him for competition. CrossFit's mantra has been to be prepared for the unknown and unknowable. However, as mentioned here numerous times, the CCF athlete knows the timing of his event. Thus it behooves him to cycle his training for optimal performance for his sport.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

That said, traditional linear periodization leaves something to be desired. Although the CCF athlete may need to focus on one or more aspects of his fitness over others, he can ill afford to allow his skills to diminish in any. Additionally, a traditional linear method has proven limited with high level athletes. Enter the *conjugate/Westside system of periodization* developed by Louie Simmons of Westside Barbell Club. The Westside system itself is a hybrid of sorts of the Olympic lifting system developed by Bulgarian lifting coach, Ivan Abadzhiev and the conjugate system was developed in large part by lifters in the Dynamo Club in the old Soviet Union. It was popularized in the 80s by Anatoliy Bondarchuk, 1976 Olympic hammer champion and current National team throw and strength coach (Myslinski, et. al.). In short, the conjugate system:

“...involves successfully introducing into the training program separate, specific means, each of which has a progressively strong training effect, and coupling them sequentially to create favorable conditions for eliciting the cumulative effect of all training loads.” (Zatsiorsky, Siff, et. al.)

Simmons explains that the Bulgarians lifted heavy often but soon burned out. The Soviets, on the other hand, introduced constantly varied special lifts designed to support their main lifts while avoiding burnout. In the conjugate/Westside protocol, the use of maximum efforts separated by at least 72 hours is implemented to avoid stagnation (as might be seen in a linear programs) and CNS fatigue. The conjugate/Westside method also utilizes dynamic/speed efforts to build explosive strength and to allow for CNS recovery as it is much less taxing. Simmons is also careful to point out that his system, which is designed for power lifting, is adapted from Olympic lifting programs. Because the power lifts are more taxing to the CNS than are the Olympic lifts due to TUT, it is important to also implement the system in three-week waves.

The unique features of the conjugate/Westside system include:

1. Lifting heavy often to develop maximal strength,
2. Lifting fast often to develop speed,
3. Segmenting workouts into upper and lower body movements,
4. Constant varying exercise to avoid accommodation,
5. Pendulum waves to avoid CNS fatigue.

This approach works perfectly for the CCF athlete (or any athlete for that matter). However, since the conjugate/Westside system is designed specifically for power lifters, which CCF athletes are not, a few adjustments would be in order as follows:

The focus of the program would be to focus on the Olympic lifts as opposed to the power lifts.

1. Dynamic effort principles would frequently be incorporated into met-cons.

PROGRAMMING FOR COMPETITIVE CROSSFIT: THE USER'S GUIDE

2. Typically, when focusing on power lifts, no more than two max effort days can be tolerated by athletes without eventual burn out. With the shift of focus to the Olympic lifts, CNS fatigue is less of an issue. So the CCF athlete will theoretically be able to handle more frequent max efforts.
3. The original conjugate/Westside method also segments workouts based on body part, upper and lower, or more specifically, bench press, squat and deadlift. The program adapted for CCF would take into consideration movements that are hip, knee or shoulder dominant to achieve greater recovery from workouts but not to the extent of a true conjugate. It is difficult to classify the Olympic lifts into these segments.

Given the unique challenges of CCF, this program would utilize other adjustments/periodization methods throughout the season. For example, a well-timed reverse linear method may aid in development of muscular endurance (Rhea, Phillips, Burkett, et. al.), timing of movements may aid in recovery (Smith, Fulmer, Holbert, et. al.) as well as varying tempo of movements (Gentil, et. al.). This program will use whatever advances the abilities of the athlete toward the goal of performing optimally in CCF events.

Thus the last piece of the training protocol of this program is,

Periodization of training in a modified, Olympic lifting focused, method which will be based on but not be limited to the conjugate/Westside system.

FINAL NOTES

There are many factors that go into the success of an athlete, only one of which is his method of training. Many factors are beyond the athletes control including his genetics and training opportunities lost. However, the training program he engages in today and in the future and his commitment to that program *are* within his control. And while the athlete cannot make up for lost time, or change his divine gifts, failure to adhere to any plan at all will likely guarantee failure. Keep in mind, no training program is a panacea, including this one. But, it is my strong belief if the CCF athlete adheres to this template with consistency over a long period of time, he should improve.

Good Luck,

Benjamin B. Taylor