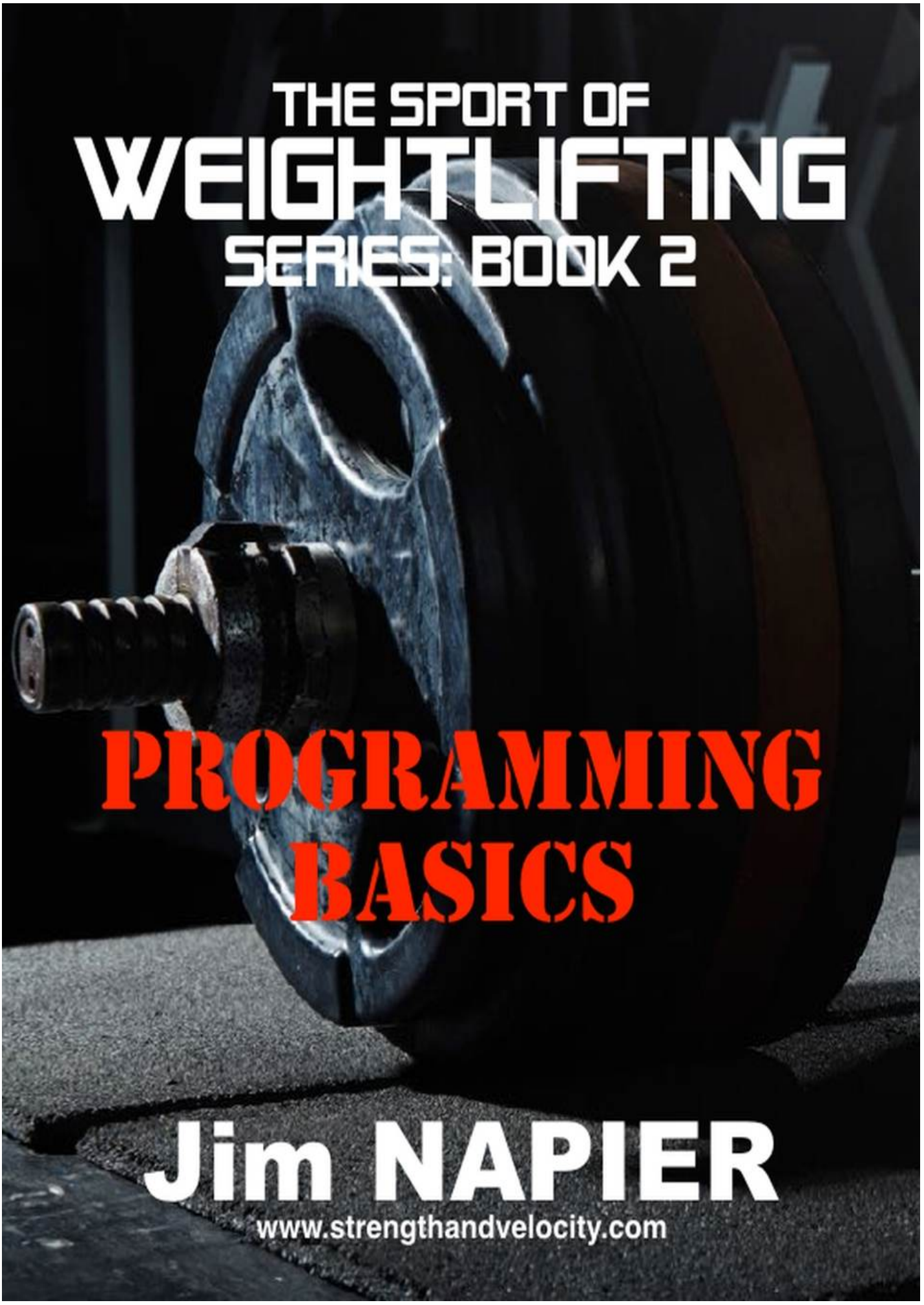
THE SPORT OF
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The Sport of Weightlifting Series Book 2 Basic Programming The Sport of Weightlifting Series Book 2 Basic Programming By Jim Napier • Copyright © 2017 jimnapier@sbcglobal.net About the Author Jim Napier grew up in Fort Worth, Texas. Graduated from Arlington Heights High School in 1963. Was captain of the track team and placed second at the Texas State Meet in the Discus in 1963. Attended Howard County Junior College on an athletic scholarship and placed second in the Junior College Nationals in the discus in 1964 and 1965. Attended TCU on an athletic scholarship. Received a degree in Physical Education in 1968, taking courses in (physics, statistics, biology, kinesiology and Anatomy). Jim was National Weightlifting Champion in 1977 in the 82.5 kg class and placed second at Nationals in 1975, 1976 and 1978. Set four American records in the snatch, including a Pan American Record snatch of 140 kg in the 75 kg class, American Record snatch 142.5 in the 75 kg class in 1978, and National record snatch of 155 kg in the 82.5 kg class in 1979. Set National and World Record in Masters Division. Jim has been a member of Spoon Barbell Club Weightlifting Team since 1974 and inducted into Texas Weightlifting Hall of Fame 2009. Table of Contents Introduction The sport of weightlifting encompasses a unique situation concerning training. Most other sports separate their weight-training with their event(s), i.e., where the athlete perform their event usually is in a separate facility from where they do their weight-training and creates both a physical and mental separation. The separation between the sport and the weight-training is not possible for the weightlifter because they use the apparatus for both their event and their weight-training. The two elements of training and weight-training can be blurred or blended into an overly complicated training regime where the programming can become complex and confusing as well. It can even become detrimental to the lifter if the athlete cannot reconcile these two elements. The weightlifter might feel like training for their sport is the same as doing weight-training. A squat or muscle snatch is the same as doing a snatch or clean & jerk, a snatch off boxes is the same as doing a snatch off the platform, so on and so forth. This paradox is carried over into the programming aspect of the sport, where the weight-training or auxiliary exercises are commingled and woven in and out of that programming as if there was no difference between the events and the weight-training. The list of weight-training exercises for gymnastics is relatively specific and is centered more on the Universal Gym then the free weights. Some track & field athletes, particularly the throwers, might lean more toward weightlifting than powerlifting. Competitive swimmers might enjoy a

mix between the gymnasts and track & field athlete's weight-training regimes. When I was competing in track & field back in the '60s in high school and college, I used bodybuilding, weightlifting, and powerlifting type exercises. A grand commingling of all three, but always the weight-training took second fiddle to my throwing or track events. When I was practicing the discus, there were no thoughts of weight-training rushing through my mind. I could concentrate entirely on the technique, speed in the ring and flight of the implement without a squat rack or set of barbells lying next to the discus or shot-put ring, as a reminder of what might come next. Since the throwing took precedence, there was never a time when the idea of training hard and long in the weight room ever crossed my mind, because I never wanted to do so much lifting it would disrupt my throwing the next day. However, looking back there is no question that I was overloading far too much in the weight room, and while the snatch and clean & jerk improved considerably from high school to the end of my college days, my discus throw improved very marginally. There goes the theory that doing the snatch and clean & jerk will help other athletes. Later I found out it was never the snatch or clean & jerk but the squats and pulls that would benefit my throwing. There is a very sound and common-sense reason for this dilemma. The very same exercises that assist the snatch and clean & jerk are the very same exercises that assist the throwers and many other athletes. That would be the squats and pulls. For if this is not true, why do weightlifters do squats and pulls? It would be a monumental waste of time if it didn't help the weightlifter to progress their events. Conversely, if it helps the weightlifter to improve their events why would it not help other athletes to progress theirs. Now we have two dilemmas, the weight room, the place where the lifter trains their main lifts (snatch, clean & jerk and squats and pulls), and the task of separating the auxiliary exercises from those events to develop a training regime that is meaningful and productive. If all the lifts scheduled are treated as primary events, i.e., the snatch being equal to a muscle snatch or hang clean, the lifter will become mediocre in those myriads of events. Lifting strictly by numbers without knowing what those numbers represent relative to velocity or time-in-motion is how most lifters go about training. The idea that the squats generate a certain amount of force has always been understood and with specific equipment that force can be measured. The idea that it takes a certain amount of time (speed) to stand up out of a clean or squat is somewhat of a foreign concept, at least the lifter doesn't seem to understand the idea of timing the squats enough to know that they should and know how to use that information. It takes more data to manage a weightlifter's training than just by the numbers themselves. Certain times-in-motion need to be measured and understood to be able to manage a lifter's training and correlate the competition lifts to the squats in a meaningful correlation which can be reflective of the training methodology. There are several facets of training that usually go undetected, besides the times-in-motion of various lifts and parts of those lifts, there is the correlation of those times that can be linked to all those lifts and set specific parameters or limitations that will keep the training moving in a linear flow. This book will attempt to address these issues, and more, as programming basics unfold. Chapter 1: Sports vs. Fitness As stated in the introduction, the idea that the snatch and clean & jerk can be a benefit to other athletes is not always an accurate assumption. The snatch and clean & jerk are the weightlifter's events, and other athletes have their events to practice doing so they can become proficient. It makes about as much sense for a competitive swimmer to do the snatch and clean & jerk as it does for the weightlifter to learn how to do the competitive swimmer's events. The most touted strength sport is powerlifting, and I don't ever recall powerlifters needing to learn how to snatch and clean & jerk, nor do I recall anyone claiming that it would benefit them to do so. The snatch and clean & jerk have no practical use at all to the powerlifter. The question arises as to whether the snatch and clean & jerk can be learned sufficiently enough for those events to be of benefit to other athletes. They certainly have to be learned well enough to be able to execute them correctly, so there is no chance of injury so that they can become a benefit. The weightlifter who wants to jump into the pool and swim a few laps doesn't need to learn the complexities of the competitive strokes, swim well enough not to drown. It is highly questionable if there is any functionality in taking the time and effort to learn how to do the strokes used by competitive swimmers. When the coach introduces more complex motions within the training regime of athletes, those complexities will begin to compete with the intricacies of their sport. Most gymnasts do their weight-training on a Universal Gym Set, where they can extrapolate out those complexities so the gymnast can concentrate 100% of their effort on their complex gymnastic routines. For throwers, the difference between throwing a barbell upward and throwing their implement is such a small difference, as far as the general mechanics between lifting and throwing is concerned, it is easy for them to pick

up the snatch and clean & jerk pretty quickly and somewhat proficiently. The throwers receive most of their assistance from the squats, which is why they lean more towards powerlifting than weightlifting. Again, they have their own event's complexities to work on without adding more complexity into the mix by introducing the snatch and clean & jerk, but again throwers can do the snatch and clean & jerk without much disruption to their event. In 1974, Al Feuerbach, world record holder in the shot put, won the National Weightlifting Championship. The most mystical of all is why football players do snatches or clean & jerks. I understand that most strength coaches believe the snatch and clean are speed lifts and the squats and pulls are strength lifts. If those squats and pulls are executed using decelerated actions then they can be defined as strength lifts, but why learn how to move fast doing a snatch or clean and then cause those actions to become slow doing decelerated squats or pulls. Since football players rely just as much on reaction time and quickness as any other athlete, it is puzzling why they use decelerated actions in those squats and pulls and just as puzzling why they think doing snatches and cleans will be of any significant benefit since those particular events are not their events nor included in their skill-sets. All the snatches in the world will not help a football player execute a passing route or throw the ball with accuracy. It certainly will not aid a lineman's blocking or tackling, at least, not near as much as doing speed (non-decelerating) squats and speed pulls will. Again, if those speed squats and speed pulls are used to assist the weightlifter's snatch and clean & jerk, why would those same type of squats and pulls not benefit other athletes, thus leaving the snatch and clean & jerk to the weightlifters. Using the snatch and clean & jerk as a fitness exercise is somewhat disturbing yet hilarious since it merely makes getting fit a rather complex issue. As long as this idea that the lifter can use slight variations of the snatch or clean & jerk as auxiliary exercises, for reasons beyond the actual intent of those exercises, programming will become complicated and unrelated to the sport of weightlifting. It is essential for programming that the snatch and clean & jerk be trained as the sole event, just as other athletes solely train their events and their weight-training is separate from the practice of those events. You will never see a shot putter doing the pole vault as something that will help the shot put, even though it might. The pole vault is too complicated to use as a cross-training exercise, and the shot putter is too bulky for the pole vault event to become much more than a dangerous activity. The parts of the snatch and clean & jerk that make it complicated are the 1st, 2nd, 3rd pull, and the timed rebound when standing up out of the full squat position. In other words, the whole lift, not parts of the lift. It's not the parts of the lift that can be used to benefit the snatch or a clean & jerk because the transitional phases between those parts are left out or executed differently than when doing the whole event, even if slightly. When performing parts of lifts, such as the snatch or clean off boxes, hang snatch or clean, jerk out of the rack, cleans only and other partial motions, those partial motions become akin to exercises and not specific to the lifter's competition events. When one or more transitional phases are left out of the snatch for instance, that not only changes how the lifter approaches the exercise, it changes the very essence of the snatch the way they execute it in competition. In other words, the lifter is attempting to benefit what he does by doing something different. The more we do something, the better we get at doing it. For example, if a shot putter began to throw from the front of the ring, they would get better at that than they would from the back of the ring, at least technically sounder, because they will always throw farther from the back of the ring than the front. Throwing from the front of the ring has always been strictly for warmup purposes and not for setting PRs. This same logic should also be carried over to partial lifts of the snatch or clean or jerk. All partial motions should be considered as warmups or as auxiliary exercises where the lifter uses relatively lightweight, and the lifter can separate the auxiliary exercises from the primary lifts, and the actual programming of those primary lifts, and not mingled in with them or at worst become another event where the lifter attempts PRs. The Concept of Fitness Before there was such a thing as fitness, there were sports. Sporting activities came along well before the advent of fitness awareness, created after WWII. Arguably the fitness industrial complex was designed to sell more products and services during the boom of the 1950s. The act of being engaged in sports creates a certain degree of fitness indirectly, even if in most cases the idea of being fit is the last thing on the athlete's mind, or should be, since becoming fit or becoming an Olympian or professional athlete are two different things. Many sports might promote a healthy body, but in the long run, it can also be somewhat detrimental to one's health, i.e., football, gymnastics, and race car driving. Even fitness centers are not immune to injuries from some of their activities. The way fitness is defined is much narrower in scope than how sporting events are defined. There are no established rules and regulations for becoming or being fit. There are

no standards, aside from what doctors might tell the public, and those standards can be a bit ambiguous when it comes to general fitness as if there is something called specific fitness. In sports, the athletes can become better at their skills over time, but it's somewhat difficult to measure if they are fitter than they were. The athlete has to be in a good state of health to go through the rigors of training in the first place. Some people are not even fit enough to begin the exercises necessary to start becoming fit. Young men and women don't need that much exercise, certainly anything as rigorous as what an athlete goes through. The Greeks didn't start the Fitness Games in 300 BC; they started the Olympic Games. Even before the Olympics was started back up in 1896, the colleges held track meets and other sporting events. The concept of fitness was tied indirectly to sports and not fitness for the sake of fitness alone. Becoming fit doesn't require someone to run a certain distance in a particular time, or lift a certain amount of weight or swim the English Channel or anything that needs a specific outcome. The sport of weightlifting does not require that the person doing it be fit; neither does any other sport, outside of being in good enough health to do the sport. If fitness were a sport or activity then would happiness be a sport or activity? It might make someone happy to lift weights or run, but there is no such thing as the sport of happiness to see who is the happiest. In other words, sports are an actual activity, and fitness is a state of being and cannot be defined as an activity or sport because it takes certain activities or sports-related actions to become fit. Physical Fitness Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons, including increasing growth and development, preventing aging, strengthening muscles and the cardiovascular system, honing athletic skills, weight loss or maintenance, and also enjoyment. Frequent and regular physical exercise boosts the immune system and helps prevent "diseases of affluence" such as cardiovascular disease, type 2 diabetes, and obesity. It may also help prevent stress and depression, increase the quality of sleep and act as a non-pharmaceutical sleep aid to treat diseases such as insomnia, help promote or maintain positive self-esteem, improve mental health, maintain steady digestion The above definition is rather all encapsulating, but says nothing about an athlete's sport or events, other than "exercise will help hone in athletic skills." More accurately; it will indirectly help assist the athlete in honing in those skills. The primary purpose of exercising or weight-training is to create a healthier body for the weightlifter to engage in their events and the practice of those events. Physical fitness is not the same as athletics, for if it were then playing football where the player is risking bodily injury or a race car driver where they risk injury or death, would be considered a form of physical fitness. The sport of weightlifting should not be regarded as physical fitness where the lifter is plagued by minor and major aches, pains and other serious complications during their career, even surgery. Sporting events could never be confused with doing physical fitness or doing exercises to become physically fit. The weight room is where athletes go to keep their body and mind fit for the sole purpose of being able to become more proficient or skilled at their sport or event(s). The weight room should never become another event where the lifter places excessive energy or effort into those exercises meant to keep the athlete in good repair and condition for their event or sport. Auxiliary exercises are just that…exercises. Exercises should not be mingled in with the training of the primary lifts, but the coach or lifter can schedule most auxiliary exercises at the end of training or in a separate session where the lifter does only those types of exercises. Only the primary lifts should be called lifts or assistance lifts as in the case of the squats and pulls. For example, the lifter should not start training the snatch and then schedule good-morning exercises after the snatch and before the squat. The good-morning exercise should be scheduled at the end of the workout or in a separate session where the coach has not scheduled any primary lifts. The Magical Exercises How many times have you heard a lifter claim that doing such and such an exercise helped some particular problem they perceived to be having, for instance, their snatch or jerk. The lifter sometimes bases those claims on false impressions, or they are misrepresentations of the facts and mostly self-manufactured, because they want it to be true or doing something different had the effect of resting the snatch long enough for it to feel sprier the following workout. As soon as one magical exercise wears off, then there is another one to take its place in a sort of game like Whack-A-Mole. The number of fixer-upper auxiliary exercises are too numerous to mention in anything other than something the size of a phone book. What do all magical exercises have in common? They are all partial lifts or even partial lifts of partial lifts. They are all called auxiliary exercises and each one claiming to be specifically designed to fix some physical or technical weakness of the lifter. Doing something different cannot help what we do, by the mere fact that it

something different. The lifter should not think of auxiliary exercises and partial lifts as fixer uppers or as some magical lift that will be the one that will propel them toward full potential. They are necessary but must be scheduled and executed in a manner that will allow the lifter to progress their competition lifts fully. The only lifts the weightlifter has in their arsenal of weapons are the primary lifts, the snatch, clean & jerk, and the squats and pulls, pulls to a slightly lesser extent than the squats. These lifts are what need to be programmed and what programming is all about; not how many sets of reps can be executed doing a hang snatch or snatches off boxes or how much the lifter can jerk out of the rack. The weightlifter must get it out of their head that doing cleans only and jerks out of the rack have any effect or resemblance to the clean & jerk. The event is the clean & jerk and not the jerk out of the rack. And no points are awarded for just doing a clean in competition. The transitional phase between the clean and the jerk must become a smooth and continuous action as all the other transitional phases must be. The lifter should use the auxiliary exercises for their fundamental intent; for exercising the muscles that they don't use as intensely as they use the primary lifts and thus keeping that muscular system in equilibrium. The Law of Mediocrity The lifter can turn almost any auxiliary exercise into an event, and they can train it as much or more than the primary lifts, in fact, it becomes equal to those primary lifts in volume and intensity, and even PRs are established as if preparing it for a competition. As the lifter adds more and more auxiliary exercises as events which are equal to the snatch and clean & jerk in both intensity and volume, the more the law of mediocrity comes into play. The more events the lifter has to deal with the more those events will begin to average out in proficiency and skill. Just as when the press was part of lifting the snatch and clean & jerk were not as proficient as they would have been without the press. An average proficiency level is due to there being more mediocrity between three events than two, and there is more mediocrity between two events than one. It has nothing to do with being able to spend more time on two events than three. The lifter only has a certain amount of time to train per week so regardless of the number of lifts that time must be spread out over those lifts they are pushing as events and improvement is dependent on energy stores, recoverability of the lifter, and how that training affects subsequent workout sessions. As the lifter adds more and more events to the fray, then the snatch and clean & jerk will become more and more mediocre or less and less proficient. It must be because it must, or the lifter with the most PRs in the most events would be the best at the snatch and clean & jerk. In the decathlon where there are ten events for the decathlete to deal with, those ten events must become mediocre, relative to the single event world records, one not being more proficient than the other. The proficiency of those ten events must be spread out as evenly as possible so the decathlon will become as one event. Since there are ten events, the decathlete has precious little time to be doing much else in training except to train those ten events. Energy spent in the weight room by the decathlete is considerably less than the amount of energy the throwers or sprinters can expend. The weightlifter is no different from the decathlete. The law of mediocrity is at work for the weightlifter, who trains too may exercises as intensely as they do their main events, as it is for the decathlete, and due to their event must train all ten events. You will never see a decathlete trying to train the hammer throw in hopes it will help his discus or shot put. There is no time, outside of doing it as a lark, to spend on anything other than those ten events. Even if throwing the hammer would help the shot put or discus or anything else, there is no time. The weightlifter who thinks they have all the time in the world and can train a voluminously high number of exercises as events will find that gradually, and over time the benefit they might have derived from doing so at first will slowly turn on them. The main events will significantly suffer as they begin to be less proficient at spreading out that proficiency among all those other events. The True Nature of Things The auxiliary exercises are fundamental to the lifter, but only if the lifter treats those auxiliary exercises as something separate and apart from the primary lifts. The importance of doing those exercises is to work those muscles that are not being used in the same way or as much as those muscles used doing the snatch, clean & jerk, squats and pulls. The auxiliary exercises provide a method for the lifter to work all the other muscles, so the lifter does not become stale from doing the same thing over and over again. The lifter doesn't need to execute the auxiliary exercises with little more than half effort to be sufficient for assisting the lifter to progress. Auxiliary exercises must be to the weightlifter what weight-training is to other athletes. Otherwise, one of the greatest paradoxes is created in the sport of weightlifting where the weightlifter has no place to go to do their weight-training after they have trained their events. The weightlifter can wind up doing no weight-training at all. When all exercises become events, then the concept of weight-training is wholly lost to the weightlifter, and

they soon find themselves training for the weightlifting-decathlon instead of the just the snatch and clean & jerk. The weightlifter has to show a considerable amount of patience and not attempt to satisfy their ego by continuously pushing auxiliary exercises past the point of negative returns. The patience a weightlifter needs to develop can be overwhelming, but without certain limitations, the training would become a free for all and every exercise would become like a world record attempt; thus, leading to mediocrity-training and eventually an automatic reduction in the intensity level.

Chapter 2: The Reason for Programming Programming is valid only if it works. Anyone can write a program. The fact of the matter is, there is no way to know if a program is working or not because it is up to the lifter to make those training sessions as productive as possible. Programs never include precision, velocity or how the lifter feels or what their stress levels might be or for sure the non-deceleration requirements in the squats and pulls. Programs do not include the desire and determination of the lifter or their natural abilities. Programs include exercises and numbers. Once these things are written down on paper, the program can seem as if they were passed down by Mosses on a stone tablet, and any changes will be tantamount to committing a crime so severe as to be punishable by death, even if the person is writing it down for just themselves. Why something written down becomes more accurate or sacrosanct than just walking into the gym without a written word is puzzling. Sometimes the percentages given are way too intense for the lifter to achieve that workout as it was written down. The lifts ordered might be wrong or in the wrong order. But because the coach or lifter wrote it down the program somehow becomes unquestionably accurate and beyond reproach. Programming serves the following purposes; 1. Organize the workouts 2. Determine which exercises are scheduled and when 3. Setting short and long-term goals 4. Monitoring those goals 5. Manipulating the volume and intensities through certain limitations 6. Record keeping for future dispensation It is essential for the lifter to organize the training so they will know what to expect well before they get to the gym. The lifter should plan the workouts for several weeks in advance. If the lifter doesn't organize the workouts, then the training will not be organized, and progress could be hindered or completely obstructed. Programming schedules what lifts to do and when to do them based on the level the lifter has reached, their age, gender, and other factors. Even the size of the lifter, because a super heavyweight lifter might not be able to do the volume of a 56k lifter. The order of the lifts is essential, so those lifts and exercises are based on the lifter's needs and are not just generic. Goals are important in all endeavors and especially in weightlifting, particularly during the early stages of the lifter's career when they are trying to make progress as fast as possible in reaching their full potential. The lifter should state their goals in the program, where applicable, such as the lifter meeting those goals on a specific date. The results can then be used to adjust the program if it isn't working or keep it the same if it's getting the desired results. The goals need to be reasonable and attainable and not pie in the sky. A beginning lifter's goals might be a bit loftier than a more advanced lifter. Reasonable goals are more likely to be met, and meeting goals can be a satisfying experience for both lifter and coach. As the lifter advances, those training goals will be geared more toward establishing goals that the lifter can achieve in competition. Manipulating intensities is done to keep the lifter from overloading, by reducing intensities when the lifter is showing signs of losing their precision, velocity or they begin to decelerate. The lifter should make these manipulations to upcoming workout sessions based on the previous session or during the session when these technical problems arise. They should never plow through a workout regardless of erratic motions. It is far more important than precision, velocity and non-deceleration take precedence over erratic motions and decelerated actions and just getting through the written workout, just because the coach or lifter wrote it down. Training programs should never be so specific that the lifter cannot make slight adjustments on the fly. The coach should never make the lifter feel like they didn't train hard enough if they don't complete the workout, as written, regardless of how they feel or how the session is going. Unless the coach is willing to take full responsibility for the wellbeing of that lifter and the lifter is willing to allow their coach that full responsibility, then the lifter must be allowed some responsibility for that success or failure. Programming should always be general so the lifter can keep the elements of precision, smooth and continuous velocity, and non-deceleration to the standards necessary to progress and adjustments can be made to the session as the lifter and coach see fit. Each workout session is a battle, and the lifter is preparing for the war, so it is always better to live and fight another day to be ready for the war (competition). If the lifter strictly adheres to programming then over time, it will wear the lifter down creating a situation where an automatic reduction in intensity will occur, and this can go unbeknown to

both lifter and coach since it can happen gradually as the lifter forces the numbers regardless of precision and velocity. The following is a list of things a lifter should do to fulfill the requirements needed to make the programming as successful as possible. 1. Use the benchmarks of precision and smooth and consistent accelerated velocity to determine how long the training sessions should last and how intense they should be. 2. Never allow the squats or pulls to decelerate at any time during any rep regardless of the sets and reps. 3. Pick a coach that understands how to monitor the elements of precision, smooth and continuous velocity and know when deceleration is occurring. 4. Keep the auxiliary exercises as exercises and never allow them to become events equal to the primary lifts. 5. Separate the auxiliary exercises from the primary lifts when writing a program. All the time taken to write out a program will be for naught if the lifter discards the above elements and programming creates a commingled mess or complicated entanglement of a myriad of exercises and lifts. The whole reason for programming is to give a general description of what the lifter needs to progress, but no one can write a program so thoroughly as to include all those elements that are not possible to write down, such as precision or deceleration or the times-in-motion. The lifter can only include the times-in-motion and precision after the fact and precision noted The program must be as accurate as possible to match the reality of the lifter's ability for staying within those elements described in the above list. Any lifter thinking that hitting the bottom of a snatch and rocking back and forth a few times before standing up is precision lifting is not going to be able to reach their full potential until they understand those actions are not precision lifting. Knowing what actions to take to become more precise is the first step in becoming more proficient. It comes down to how good an athlete is at being able to both change and control those erratic actions. Chapter 3: Elements of a Program The elements that a program needs are different from those elements that should be written down after the workout session. The Lifts to be Ordered (primary lifts) As stated before, the lifter should separate the primary lifts from the auxiliary exercises, so there is a clear delineation between the two and the weightlifter has a valid weight-training session outside those primary lifts, especially the competition lifts. The primary lifts can be arranged in just about any order possible and depending on the number of sessions per day this should occur, so the muscles are evenly worked in all the primary lifts over weeks and months. How long a lifter has to train will determine the number of auxiliary exercises to be ordered and when those exercises are scheduled. It should be understood clearly, that regardless of the amount of time the lifter has with which to train in they should never skip the physical fitness part of that training, that part being composed of specific auxiliary exercises or jogging, walking, swimming or other activities. These auxiliary exercises should be programmed aside from the primary lifts. It can come after the training of the primary lifts or instead of, i.e., on a day the coach or lifer schedules only auxiliary exercises for that session. The auxiliary exercises should never be executed at such an intensity as to cause subsequent sessions to be less effective. Reps and Sets The way reps and sets are written down can be as varied as the number of auxiliary exercises. But for the most part, the sets are written first followed by the number of repetitions in that set with the amount of weight or percentage of PR preceding those sets of reps. Example: The lifter can write 5 sets of singles in the snatch as 5 x 1 or 5 sets of singles in the snatch followed by 3 sets of singles at a different weight would be 5 x 1, 3 x 1. If the two sets repeat, they can write it as can (5 x 1, 3 x 1)2. The percentage or actual amount of weight can be used, such as 80% x 5 x 1 or 80% x 5 x 1, 85% x 3 x 1 or 100k x 5 x 1, 105k x 3 x 1. The sets of reps can become as complicated as necessary to get the work in needed to progress, but not if the lifter disrupts precision and smooth and consistent accelerated velocity or deceleration takes place during parts of the lifts or the ascension of the squats and pulls. Since the lifter should measure those times-in-motion of the snatch and clean & jerk after the fact, they cannot be incorporated into the programming but should be noted on a spreadsheet after the workout is over. Time-in-motion Measurements; 1. The snatch (from the platform to standing up with the weight) should be 2.5 seconds or faster. 2. The clean (from the platform to standing up with the weight) should be 2.5 seconds or quicker. 3. The clean (from the platform till the jerk is fully locked out, not the recovery of that jerk) between 3 and 6 seconds or whatever is comfortable for the lifter to make the transition from the clean to the jerk. A time of 3.5 to 4.0 seconds is relatively common among top lifters. These times should become consistent from session to session and rep to rep. As the weight increases these times usually become slower; therefore, the last set and reps of the top-end weight will be the reps that should be

measured. 4.Standing up with the snatch and clean out of the rack or from the platform after a clean. The lifter should ingrain the times-in-motion so they are aware of that speed on a conscious level and can perform it in competition or training during a clean & jerk or as an ingrained unconscious effort. The standard in the ascension of the front or back squat should be one-second or where there is no deceleration when standing up. From just above parallel the time should be 0.67 seconds to match the pull to full extension and for the drive in the jerk. The times-in-motion of the pull to the full extension should be approximately 0.67 seconds and 0.33 seconds for the 3rd pull. The lifter should monitor the times but doesn't need to write them down, because the times will be the same regardless of the weight on the bar once the weight reaches about 85% or more. Pulling under the weight to where the arms are locked out should always be 0.33 seconds or faster, but never slower. If a lifter has trouble reaching this particular velocity, when pulling under the weight, they will find it difficult to progress to their full potential if not impossible. Although for the most part this velocity (time-in-motion) is typically achieved as long as the lift is successful. Pulling under the weight is more critical than the pull to full extension. If the timing is missed, then the speed under the weight will be a fraction too slow to receive the barbell before it fully decelerates downward. The lifter should measure the pulls from the platform to the knees (just below the kneecap) and this time should be 0.33 seconds or faster, as long as the lifter has control of those faster times. If the lifter can pull faster than 0.33 seconds with 100% of PR, then they can slow the 1st pull down to around 0.4 seconds and gain more control going into the 2nd pull. If the lifter has to drag the barbell off the platform to achieve the .4 seconds, then the 2nd pull will be slower. The 1st pull is overcoming force, and the 2nd pull is force production, i.e., controlled to gain maximal velocity. Amount of Training Time How much time a lifter has to train will be predicated on several factors; 1. The age of the lifter 2.The level the lifter has reached 3.Lifestyle The Age of the Lifter How old a lifter is will have a great deal to do with how long they could or should train. The younger the lifter is, say under 12, then the shorter the training sessions and more emphasis placed on repeated precision with light weights in all the primary lifts with less emphasis on the auxiliary exercises. From 13 to 30 the training will begin, and the volume and intensity as a percentage will reach full force by age 17 if the lifter started at age 12 or younger. It takes about 4 to 5 years to progress to full potential from age 17 or higher. It depends on when the lifter begins training full bore for the sport, rather than just a passing hobby. If they start the rigors of training at age 22, they should hit full potential at age 27. So, anyone wishing to make the Olympic Team needs to keep this in mind. For master lifters, the amount of training will taper off from age 35 and up. How much will depend on the lifter and how that training affects them. No one can know much about master lifters due to it being somewhat new to the scene. For the most part, the sport should be more fun and less work for the older master lifter from 60 years and up. The Level of Achievement Besides the age of the lifter, the level they have achieved also has a bearing on how many sessions they can program into the training. Making sure that the lifter understands there is a difference between the level of achievement and age. A lifter at age 17 might have reached their full potential and can train up to 10 sessions per day or more while a lifter just starting in the sport at age 28 would only train about 3 to 4 days a week one session per day and gradually build on that depending on how they are progressing. Training two or three times a day is near impossible unless the weightlifter is a professional athlete, and few are. Two sessions a day for 4 days a week is improbable for those lifters who have full-time jobs. The lifter who tries to train in the early morning before going to work and then after work needs to be careful and aware that the early morning session along with their job doesn't have adverse effects on that evening session. These are all severe considerations the lifter must discuss with their coach or trainer or with themselves. Regardless of how long a lifter trains, how old they are or any other factors every lift executed in training must be precise every rep, be smooth, continuous accelerated velocity and no deceleration should ever occur in any lift or any part of a lift. Once the lifter adheres to the elements mentioned above, then the lifter is free to train as intense and as often as they can or until those sessions begin to take a toll on subsequent sessions. Training must be based on cause and effect and not haphazard until the lifter completely breaks down or becomes injured. An injury is always just around the corner with erratic lifting and decelerated actions. Once a lifter becomes overtrained they will have to make drastic changes to the programming to account for that dilemma. It could take several weeks if not months to recover from severe overtraining. Although most sever overtraining is more likely to affect aerobic sports than strength sports, because of the built-in safety factor of automatic reductions in

intensity although this does not keep the lifter from getting injured while they are in a state of being overtrained. While training long and hard, without any regard for precision, smooth continuous accelerated velocity and non-decelerated actions, might be somewhat beneficial in the short run, the results will be less satisfactory over the long term. Slower developed reactions will cause those actions needed not to be able to react as effectively as they would otherwise. Lifestyle Most weightlifters have to work for a living, apart from their weightlifting activity, and the sport is relegated to a hobby or a form of exercise, leaving little time to train adequately enough to reach their full potential. It depends on the type of work the lifter is doing that will decide how much time they can devote to the sport, as well as how much stress there is from their job that might affect the training. Job-related stress can be undetected, even if the person loves their job. The following is a list of those stressors; How long a person has to drive to and from work each day can begin to wear them down, especially if it's a one-hour trip to and from the office. Long drive times make it difficult to get in the training necessary to be able to progress or even be able to enjoy doing the sport at all. The physically demanding the job is the less likely the person will be able to entertain the idea of competing in sports at all, let alone weightlifting. Some jobs are less demanding physically, but coupled with weightlifting training can create even more stress, both physically and mentally. The best job for weightlifting is one where the lifter can sit down most of the time so that they can be resting up before training. Being in a job where there is a lot of problems with co-workers or where the management is demanding of the person's time can be very stressful. Being your boss is great as long as you have people that can do all the work for you, but most self-employed people put in too many long hours to be able to do much else but their job. A lot of job-related travel can be stressful because flying is stressful enough when schedules have to be kept and missing a flight could cost your job. At best the lifter will lose a lot of training time. As seen by the above, the more stressful the job is or, the less likely the lifter will be able to even engage in the sport of weightlifting or anything else other than their job for that matter. Job-related stress or demands has probably kept a lot of athletes from reaching their full potential. Not to despair, anyone interested in competing in the sport of weightlifting can do so, even if their time is limited for such an endeavor. Just three days a week and 1 hour a session can bring forth a measure of success if those sessions are programmed effectively. Besides jobs, there is marriage, children and many other responsibilities that can relegate the sport of weightlifting into the category of a hobby regardless of how much desire and determination that lifter might have. Most top lifters put many of these responsibilities on hold until they have retired from the sport. They alone must decide as to whether it will be worth it or not. As far as the casual lifter is concerned, there is a very enjoyable sport and one an athlete can get a great deal of satisfaction out of no matter the level achieved. Chapter 4: The Devil is in the Details It does little good for a lifter to spend the time writing down everything they do in training, yet that information is never used to asses those training sessions over the weeks and months continuously. Besides the weights, sets, and reps the time-in-motion also needs to be entered. The lifter can enter the times-in-motion at the end of training from the video taken. The main items that need to be listed when programming a lifter's training are the following; 1.Top-end weights in the snatch and clean & jerk 2.The number of sets and reps with that top-end weight 3.The number of sets and reps of the top-end weight in the squats and pulls or the series of sets if applicable. 4.The top-end weight of the pull(s) 5.The auxiliary exercises Only the top-end weights can be pre-written in the program along with the number of sets and reps. The times must be measured and later on, added to the monthly report next to the top-end weight of each lift. All of these top-end weights need to be averaged out monthly or as needed to keep the average monthly intensity at around 80% (see Appendix B). The times should be averaged to make sure they are in line with the lifter's consistent times-in-motion and do not get out of line. The lifter should average the equivalent force for the 1-second squat, so they will know if the squat is staying up with the training of the competition lifts. The equivalent force I explained in my book Weightlifting: Strength & Velocity. Exhibit 1 Date Snatch Clean & Jerk Front Squat Back Squat Snatch Pull Week One Day 1 90k x 5 x 2 115k x 3 x 1 70% of C&J Day 2 Auxiliary Exercises Day 3 105k x 5 x 1 100% of C&J 100% of Snatch Day 4 Auxiliary Exercises Day 5 120k x 3 x 1 140k x 3 x 1 120% of C&J Exhibit 1 is just an example of what programming might look like for a lifter who has a snatch PR of 130k and clean & jerk of 165k. This program was written on a spreadsheet, but it can also be hand written. Three Records to Keep; 1. The original programming sheet (paper and pencil or computer generated) 2. The log book of the lifter's actual workout 3. Monthly Report (computer spreadsheet data base)

The originally written program should only contain the top-end weights or percentages, the sets and reps, the lifts scheduled and the order of those lifts. The lifter should keep detailed records of every lift executed in training, including the incremental increases. The original program should contain any adjustments made during the workout to those top-end weights. All this information should then be transferred over to a spreadsheet and the times-in-motion noted along beside the top-end weights, for a complete and accurate picture of each training session. The lifter should enter the top-end weights and times-in-motion in the monthly report. The programming of the auxiliary exercises should be done separately and only include enough exercises, so the subsequent training session is not negatively affected. Knowing how a session will affect the lifter's ability to complete a subsequent session successfully can only be ascertained through experience and by how certain lifts feel by comparison to previous workouts based on what the lifter did during those last sessions. If the previous session was composed of a voluminous amount of speed squats with 100% of clean & jerk PR, the subsequent session might be affected enough that their might need to be some adjustments made to those top-end weights. The auxiliary exercises should be mixed up over time, so there is plenty of variation to work those muscles that are not used as much or in the same way as those muscles worked during the main sessions. The lifter should remember when doing just auxiliary exercises that those are for the overall physical fitness of the lifter’s muscular system and not for setting PRs, otherwise, the whole point of exercising is lost and wasted, and it could over time have a negative impact on the lifter’s ability to reach their full potential. The lifter should set up the spreadsheet should so the lifter can calculate average intensities for the month and other averages regarding the times-in-motion and equivalent force correlations. The auxiliary exercises can be programmed at the end of the main session if the lifter has no time to do them as a separate session. Data gathering and managing the training time are just some of the devils in the details that both the lifter and coach must sit down and hash out before agreeing on the overall plan that should be followed at the onset and then adjusted as need be. Chapter 5: Deceleration Deceleration: to decrease the velocity of a moving object. When you brake to stop your car, you are decelerating. When a ball rolls on the ground and slows down to a stop, the ball is decelerating. During a snatch or clean & jerk the most common areas of deceleration are: 1. During the 1st pull. 2. Standing up with the weight out of the snatch and clean or full squat jerk. 3. During the jerk drive. The "sticking" point is the area where deceleration takes place. The sticking point is the area from parallel to quarter squat. During a maximal squat, if the lifter comes to a complete stop, it is usually within the sticking point. The athlete cannot work through the sticking point because it is the weakest leveraging point when standing up with the weight or at liftoff and the 1st pull to the knees. The lifter can only overcome the sticking point using non-decelerated velocity. Strength requires slower accelerated velocities and speed requires faster velocities. Most lifters might not realize it is not the weight that is causing the deceleration or the seemingly slower ascension out of the squat, but it’s the velocity of the lifter causing the force being applied to decrease. As the mass increases the speed will decrease and vice versa, as shown in exhibit 2. Exhibit 2 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3 1.4 1.5 100 110 120 130 140 150 155 160 165 170 175 250 260 270 280 290 300 305 310 315 320 325 Exhibit 2 shows the actual weight that two different lifters can back squat in one-second (150k and 300k), and what those times-in-motion do as weight decreases or increases. These results are from the research done on studying mostly men’s times-in-motion, and one-second seems to be the optimum speed for the ascension during the squat. For women, it is more like 1.1 to 1.2 seconds and follows the same principle in track & field where the women 100-meter sprinters are generally about one-tenth of a second slower than the men overall. This differential has to do with reaction time, not the actual weight differential which is anywhere from 70% to 80% of what men can do; however, the one-second squats are still in effect for women as for men. There is more accuracy in those times-in-motion when those times are faster than one-second. As weight increases past what the lifter can do in one-second the times stay somewhat accurate up to about 1.5 seconds, but eventually begin to deteriorate exponentially until the lifter can no longer move and has to dump the weight. The above times are not predicated on the lifter intentionally moving slower at the beginning of ascension and gradually accelerating. In that particular instance, the lifter could still achieve smooth continuous acceleration at times of 1.5 seconds. After 1.5 seconds it becomes more and more difficult to accelerate slower except with weight that will allow that to happen. In the above table the lifter with the 300k back squat in one-second would begin to decelerate at 1.6 seconds and slower; therefore, 325k would be the most the lifter could do without decelerating, and that 325k would be equal in force to the

300k in one-second. The lifter should warm up thoroughly before moving the heavier weights faster by using lighter weights and moving slower than they could otherwise move. Much the same way a sprinter warms up their muscles and joints by first jogging and gradually increasing their velocity as they get ready for the race or for training their event on the track. It is mainly the top-end-weight in the squats that the lifter should execute at maximal velocity or times-in-motion and recorded in the spreadsheet along with those times-in-motion and the equivalent force of that top-end weight to a one-second squat if the lifter performs the top-end weight slower or faster than one-second. The reason for knowing the one-second back squat is to correlate that squat to the clean & jerk using a multiplier of 86%. If for example, a lifter does 190k in one-second they can multiply the 190k by .86 and get their clean & jerk potential of 163k. If the same lifter has a back squat of 190k in 1.5-seconds, then the lifter interpolates the 190k to one-second, which would be 165k in one-second and 86% of 165k is 142k clean & jerk. As the velocity decreases the ratio between the clean & jerk and back squat decreases. 142k / 190k in 1.5 seconds = 75%, instead of 86% at one-second. These times-in-motion (accelerated velocities) are what creates a more accurate ratio between the clean & jerk and back squat. The amount of weight alone is irrelevant if the times-in-motion are unknown to the lifter, and they are simply shooting in the dark without that data. Extreme Deceleration More times than not, lifters will slow grind a PR back squat in times that go beyond anything that the lifter can equate to a ratio between the back squat and the clean & jerk. Times as slow as six-seconds can be achieved and still make the lift. The lifter spends most of that six-seconds in the sticking point; thus, slower times-in-motion become so dysfunctional they produce almost no force at all. Example: A lifter with a 200k back squat in one-second, works up to 250k, but the time-in-motion slows to 6-seconds. Six-seconds minus 1-second equals 5-seconds and 5-seconds times 50k (the overload) is 250k; therefore, the 250k back squat produced almost no force, and the total 250k was overloading. The 200k produced no overloading. The potential clean & jerk from the 250k back squat in 6-seconds would be zero, and the potential clean & jerk from the 200k back squat in one-second would be 172k. Of course, 250k in 6-seconds would correlate to zero amount in the clean & jerk, but the zero-force production represents the proficiency of that back squat, not the actual force produced. The proficiency would be 1/6th of the 200k in one-second. Extreme times in the back squat or front squat are detrimental to the lifter and antagonistic to the clean & jerk. Any times slower than 1.5-seconds could be considered antagonistic and become detrimental if the times-in-motion become the norm, and the lifter executes the decelerated squats habitually in practice. At best the lifter will become stagnant before reaching full potential, and at worst they could sustain injuries. For powerlifters, these slower times are not as much of a problem because they are not doing the squats or deadlifts to increase their ability to snatch or clean & jerk. Nor would they have any need to do such. The snatch and clean & jerk could be antagonistic to the powerlifter since they are not accustomed to moving at those velocities. Deceleration can occur at liftoff or during the 1st pull, usually right before the bar passes the knees, which is the area of the sticking point where the amount of force is greatest. Some lifters bend their arms slightly to get around that area and then straighten them back out once the lifter passes through that position. Generally, this type of deceleration is caused by the lifter not having the ability to overcome those forces. It is not caused by a weakness in some part of the muscular system directly, but indirectly due to too many decelerated pulls and squats. The lifter is unable to overcome the forces necessary to execute the 1st pull correctly or proficiently because they have been training those areas at too slow a velocity. The cure is simple, stop doing decelerated squats and pulls and those squats and pulls will come back in line with the velocity requirements of the snatch and clean & jerk. No magical exercises or fixer-uppers are needed, and the auxiliary exercises can continue being exercises for the overall fitness of the athlete. As long as the weightlifter believes they can defy the laws of physics and use decelerated actions in the squats they will never be able to reach their full potential. They should learn to train the squats and pulls using smooth continuous accelerated velocities. Besides defying the laws of physics, it defies all logic to squat or pull using slower times than those needed to achieve a snatch or clean & jerk. It takes patience and some unconscious efforts to accomplish those velocities, but in the long run, the lifter will be able to reach their ultimate goals. Appendix B shows how the lifter's snatch and clean & jerk progress from a 100k total to a 450k total and how the squats are trained using non-decelerated times, as well as how the lifter links those squats to the clean & jerk. Exhibit 3 Back Squat (Kilos) Time-in-Motion (Seconds) 200 1.0 210 1.1 220 1.2 230 1.3 240 1.4 250 1.5 260 1.7 270 2.0 280 2.5 290 3.0 300 3.5 310 4.0 Exhibit 3: The

Deceleration Graph shows how extreme deceleration can exponentially become slower as the weight increases passed what the lifter can achieve in one-second. The ascension times are relatively stable from one-second to 1.5-seconds, but after 1.5-seconds the times begin to become less stable and increase exponentially or at a quicker rate, and many times faster than shown in the graph. The lifter might not even be able to stand up with 240k, even though they can do 200k in one-second; due to the number of fast to slow twitch muscle fiber development or distribution. If the lifter has more fast twitch fibers, then the times-in-motion will drop off sooner than if they have a majority of slow twitch fibers. The very reason some athletes are better suited for powerlifting over weightlifting. Chapter 6: Programming the Pulls It is somewhat difficult to execute the pulls with the same velocity to full extension as when doing the snatch or clean full movement. Without the 3rd pull, the momentum begins to decelerate sooner, and the lifter will float upward and be in the ankle extension phase longer, but the barbell will be descending faster. There is no way to remedy this. About all the pulls can do is create some additional control during the 1st pull, but beyond that, it is difficult to measure the time-in-motion of the pulls and get any meaningful data. The only useful measurement the lifter can make when doing the pulls is the time it takes for the barbell to go from the platform to just below the knees (kneecap). Without having a real-time feeling of the momentum produced during the change in direction between the 2nd and 3rd pull, makes it difficult to know when the force production is less than the ability of the lifter to make the weight. For example; a lifter could conceivably be doing pulls with 95% of PR, but if they were trying to snatch it instead, they would have no way of knowing if the lift would be successful. The lifter must rely on their feelings when doing pulls rather than being able to measure those times to full extension, in the same way, the lifter times the squats. The height the barbell travels after a pull is irrelevant because the arms should still be straight until the lifter pulls under the weight to secure it overhead. Like the squats, the pulls decelerate gradually as the weight exceeds 100% of PR. The only viable use for doing pulls is to maintain those velocity requirements with at least 100% of PR. Doing more than 105% of PR will cause overloading and harm the training of the competition lifts. The notion that doing slow grinding squats and pulls with massive weights will make the lifter faster is the greatest misconception of all in athletics. The athlete will only get slower if they move slow and primarily if they train their muscles using decelerated actions. Fortunately, for most natural athletes who possess a more significant amount of fast twitch than slow twitch fibers or possess exceptional reaction time, they almost cannot grind out lifts and are spared by what I call “dumb luck” from the problems that come from deceleration. Any athlete that trains slow will never be able to speed up or control more speed. The throwers in track & field are acutely aware of the need for speed and being able to control maximal speed is their ultimate quest. When throwers are unable to control that velocity, the results show up in the flight or trajectory of the implement. The implement can go just about anywhere but in the desired direction or distance. Usually, uncontrolled velocity will cause the thrower to foul. For the weightlifter, the same things can occur as they do for throwers when the velocity is not controlled (smooth continuous accelerated velocity). The trajectory can be out of position or less weight can be put overhead than usually can or the lifter will foul by running off the platform. Pulls: Auxiliary vs. Primary There should be a distinction between using the pull to develop the ability to overcome force during the 1st pull over the pull to full extension. The lifter is overcoming forces during the 1st pull and producing force during the 2nd and 3rd pull. When standing up with the weight, the lifter is overcoming force up to the sticking point, and they should be producing force through the sticking point. It is doubtful that the athlete can use the pulls to increase the proficiency of both the 1st and 2nd pull. The pull cannot aid the 3rd pull. If the lifter can push the pull or maintain it at 105% of Clean & jerk PR, and the time-in-motion of those pulls to the knees is faster than 0.33-seconds, this will go a long way in helping the lifter generate maximum force during the 2nd pull and consequently the 3rd pull. Anytime the arms are bent after the lifter reaches a full extension and the bar is pulled higher than what is part of the usual mechanics, the pull becomes an auxiliary exercise and not a primary lift. I make this distinction, so the lifter doesn't put unnecessary stress on the arms and shoulders. Any amount of arm-bend would be overloading, and this overloading can occur well before the weight reaches 100% of PR. The snatch or clean high pull is primarily a warmup exercise using the empty bar for the snatch or clean & jerk and the lighter incremental weights. When doing a snatch and clean pull the lifter should go to full extension and do a shrug while on the toes, but not bend the arms any more than can be avoided due to the momentum produced. The lifter should never forcefully bend the arms when doing pulls with maximal weights (70% to over 100% of PR). The lifter

should ride-out the momentum by bending the arms, but they should not forcefully bend the arms. The pulls to the midsection are a variation of the pulls to full extension. These types of pulls work the legs, back and hips a little more than the pulls to full extension do, and should be considered a primary lift where a little more than 100% is possible, and the velocity to the knees will stay intact at 0.33-seconds or faster with considerably more weight than the lifter can pull to full extension. Deficit pulls, pulls to a pin or any variation of the pull to a full extension where the arms will be intentionally bent, the lifter should classify as auxiliary exercises. The goal of auxiliary exercises is the overall fitness of the lifter and not for fixing any problems, perceived or real, or for directly creating a more technically proficient athlete, or by creating a combination where they create a new event for the sole purpose of notching another PR on their belt. As stated before, most if not all problems the lifter can associate with their technique in the snatch or clean & jerk are due to executing the squats and pulls using decelerated velocities, thus causing the lifter to be out of equilibrium with the snatch and clean & jerk velocities. Slow decelerating high pulls would be the same as doing slow squats or pulls. The athlete should make a precise determination between which lifts are primary and which are auxiliary exercises. The lifter might believe they can commingle all the myriad of lifts into a complex system of training, and somehow magically reach their full potential. The most common exercises to be trained as a primary lift are the snatch off boxes and jerks out of the rack and variations of those lifts, such as placing the boxes at different heights or executing behind the neck jerks. None would be legal to perform in competition. It might also be said of the squats and pulls, but the squats and pulls are events in powerlifting, and those squats and pulls came out of the sport of weightlifting in 1964. Before that time there was no argument about which lifts were primary and which were auxiliary (bodybuilding at that time). Function of Pulls The primary purpose of doing pulls is to assist the 1st pull to become more efficiently lifted off the platform to the position where the 2nd pull begins, approx. mid-thigh. It is somewhat doubtful the pulls can be used to increase the overall pull from the platform to full extension since the lifter begins to decelerate sooner toward full extension than when the lifter executes the full movement. There is no way I know to simulate the full extension when doing the pulls as opposed to doing the full movement. The lifter should use the snatch high pull or muscle snatch as a warmup exercise and not exceed 50% of snatch, because the lifter should never bend the arms until they reach full extension. If the lifter handles too much weight in those lifts, then the overloading can harm the precision of the full movement. Exhibit 4 Date Snatch Snatch Pulls Clean & Jerk Clean Pulls Back Squat Front Squat Snatch Pulls Clean Pulls Week 1 Day 1 75% 80% 75% 100% Day 2 85% 85% 120% Day 3 85% 80% 105% Day 4 80% 85% 85% 95% Day 5 85% 110% 90% Programming Pulls Exhibit 4: The coach or lifter should schedule the snatch pulls after the snatch and the clean pulls after the clean & jerk or they could program the snatch pulls after doing clean & jerks. The pulls to mid-thigh or the midsection, are variations to the pulls. When doing the pulls to mid-thigh or midsection, the pull to the position of the knees should be as fast as possible so the lifter can overcome the 1st pull forces using greater control. In exhibit 4, I based all the percentages on the snatch, or clean & jerk meet PRs. I left out the sets and reps to show how the snatch pulls can be ordered depending on intensity. When the coach or lifter orders the pulls after the snatch, the intensity should be less than 105% of PR so that the lifter can maintain the same times-in-motion the achieved in the snatch. Chapter 7: Measuring Times-in-motion With the accessibility of very inexpensive video equipment or the ability to take video with a cell phone, it is inconceivable that most lifters do absolutely nothing with their video except to put them on social networks. I have benefited greatly from those videos of top lifters on YouTube because I could measure the times-in-motion in the squats and then calculate what the lifter did in one-second concluding how much those lifters can clean & jerk and this is usually always accurate within plus or minus 5k. From the most inexperienced lifter to the world record holders, the results are still the same. Mainly because they have to be close to accurate due to the laws of physics where mass and accelerated velocity are concerned. The equivalent force has more to do with the mass vs. gravity than the lifter. The lifter is merely the machine that moves that mass against gravity. How to measure time from video recordings; 1. From the Platform to Standing Up The instant the bumper plates leave the platform, not when the bar bends right before those bumper plates move off the platform, start clicking the forward arrow to advance the video and also start counting those clicks. When the lifter fully stands up where the upward movement of the barbell stops then stop forward clicking and write down the number of clicks and divide that by the number of fps (frames per second). Most cameras are 30-fps, so divide the total forward clicks by

30, and you will arrive at the overall time-in-motion of either the snatch or clean. Besides the video, a stopwatch can also be used to get a general idea of those times a little faster than having to replay and measure each video. Those times also need to be recorded in the lifter's log book and on the monthly spreadsheet report. 2. From the Platform to Locking out the Jerk. The same method for measuring all lifts. The lifter should measure overall time in the clean & jerk from the platform and the time stops the instant the arms lock-out overhead regardless of the position the lifter is in or what the lifter does after their arms lock-out. 3. Back Squat From the lowest trajectory point to where the barbell begins to decelerate as the lifter is coming to a stop at the top of the trajectory. The lifter can have the legs bent slightly at the top of the squat. The lifter can time the complete set of reps from start to finish, but these times will not yield much data since the downward motion need only be smooth and controlled and slower than the ascension times. 4. Front Squat Same as the back squat 5. Pull to Full Extension During a snatch or clean the pull to full extension can be measured, from the platform to where the top of the lifter's head reaches the highest point. This particular time-in-motion should be consistent from about 80% to 100% of PR or more than 100% if the lifter establishes a new PR. Most lifters a time of 0.67-seconds is achieved and maintained regardless of the weight on the bar. 6. Snatch and Clean Pull From the platform to just below the kneecap the time should be consistent and controlled, but never intentionally slower than what the lifter can achieve using maximal controlled acceleration. Measuring snatch pulls to full extension is difficult because the lifter will decelerate much more than when the 3rd pull is applied. The pull to the knees takes about .33 seconds, and the lifter should be able to achieve this time with nearly 105% or more of the snatch or clean PR. The measurement to the knees does not mean the lifter only pulls to the knees, although this can be an auxiliary exercise. 7. The Third Pull Pulling under the weight should take about .33 seconds or 10 clicks from where the lifter's head begins to move downward, and the arms are fully locked out. The main measurement will always be the squats because that particular lift is significant for most if not all of the functions contained in the snatch and clean & jerk. The necessity of increasing the squats along with the clean & jerk progression cannot be stressed enough. One lift should not overly precede the development of the other, but the squat in one-second should mirror the progress of the clean & jerk which the lifter should achieve in 2.5 seconds or faster from the platform to standing up with the barbell. Both the overall time-in-motion of the clean and the one-second squat must be in equilibrium at all times as the lifter is progressing toward their full potential. If the lifter begins decelerating their squats and allowing overloading to occur too frequently the 2.5 second overall time-in-motion will become harder to achieve. Once those overall times go past 3-seconds, the lifter will be left will little room to progress, aside from moving slower than 3-seconds, but this causes the lifter to attain stagnation sooner. The following spreadsheet shows how to record measurements and what to do with them once recorded. Exhibit 5 Date Snatch Clean & Jerk Back Squat Equivalent Force Day 1 90 x 5 x 2 (2.2) 115 x 3 x 1 (2.1) Day 2 Auxiliary Exercises Day 3 105 x 5 x 1 (2.3) 165 x 3 x 2 (1.0) 180 Day 4 Auxiliary Exercises Day 5 120 x 3 x 1 (2.45) 140 x 3 x 1 (2.35) 198 x 1 (1.1) 188 Exhibit 5 incorporates more than just the top-end-weights and equivalent force. It has the overall times-in-motion of the snatch and clean & jerk (only the clean portion of the lift). I added the number of sets and reps in the back squat to keep track of the volume and intensity as that relates to the equivalent back squat in one-second. The times-in-motion should be averaged at least monthly to make sure those times do not creep up over 2.5 seconds. The coach or lifter should monitor the times-in-motion as diligently as all other facets of training. Not knowing these crucial times is like an Ostrich sticking its head in the sand or a track or swimming coach not timing their athletes during practice. Not anything good could ever come from that scenario. Why should weightlifting be any different? Or better still, what's to lose one way or the other? The equivalent one-second back squat is, so the lifter will know that their volume and intensity is lining up closely with those one-second squats for one rep. Over time the equivalent squat should increase along with the clean & jerk. Since it's impossible to correlate all the various sets of reps and different weights and percentages used when squatting, mainly when the lifter uses extreme deceleration on some of those squats, the only way to know how those squats are progressing is by knowing what those equivalent squats in one-second are. Another reason to know the equivalent back squat in one-second is so the 86% can be applied to it, and the equivalent clean & jerk can be determined. In the above hypothetical the 180k back squat and 188k back squat can be averaged at 184k, and 86% of 184k is 158k for the clean & jerk, and this tells the lifter that the volume and intensity of the back squat is in the right proportions for both the back squat and clean & jerk training. Too much squat volume

during the week can harm the practice of the clean & jerk and vice versa. Again, if the lifter uses precision and smooth, consistent accelerated velocity then the volume will be the primary factor that aids the lifter in reaching their full potential. Squat Separation The importance of timing the squats and establishing the one-second equivalent force is to eventually build some separation between the clean & jerk and the equivalent clean & jerk from the back squat. Example: A lifter has a 200k back squat in one-second, and 86% of that is 172k. Separation occurs when the equivalent clean & jerk is greater than the actual competition clean & jerk PR. This lifter has a meet PR of 172k in the clean & jerk, and after a couple of months, their squat goes to 210k in one-second, which is equal to 180k clean & jerk. The lifter might be able to clean & jerk 180k, but the main thing is lifter's top-end weight in the clean & jerk can be increased. The separation between the one-second squat and the clean & jerk can be as much as is possible, but the lifter should still base it on the 2.5 second overall time in the clean portion of the clean & jerk. PR Chasing When lifters go to the gym and try and set PRs in any of the myriads of lifts, a lifter can create with a barbell; they are engaging in PR chasing. The lifter is satisfying their ego, when they grind out a big back squat in 3-seconds or jerk more weight out of the rack than they can clean & jerk. They are not engaged in training that can correctly and adequately be focused on improving overall proficiency or successfully prepare for a competition. PR chasing cannot be programmed. Training is not about going into the gym to see how much weight the lifter can handle, regardless of the times-in-motion or precision. The lifter should base the programming on specific training protocols, not willy-nilly training and PR chasing. All lifters irrespective of their level achieved deserve to be trained using correct training protocols and should never be allowed to walk into the gym and start banging away at any lift using 100% efforts. Satisfying one’s ego should only come from what they can achieve in competition, not in the gym. The training that goes on in the gym must be self-satisfying on a different scale. The lifter should control the training, and be precise and measured, not wildly pursued on an extroverted level, as if every lift is the greatest ever made and must be put out on the social network as proof of one’s magnificence. Glory is fleeting as well as titles and records. The pursuit of athletics has to come from the inner feeling of satisfaction that one has done the best they can at the time and that feeling should be enough to feed one’s ego. Chapter 8: Average Monthly Intensities It is essential for the lifter to know and understand what their average monthly intensities mean and how to use that data to make changes, as needed, in the scheduled programming. Spreadsheet (Average Monthly Intensities) Exhibit 6 Date Snatch Clean & Jerk Back Squat Equivalent Force Week 1 Day 1 90k x 5 x 2 (2.2) 115k x 3 x 1 (2.1) Day 2 Auxiliary Exercises Day 3 105k x 5 x 1 (2.3) 165k x 3 x 2 (1.0) 180k Day 4 Auxiliary Exercises Day 5 120k x 3 x 1 (2.45) 140k x 3 x 1 (2.35) 198 x 1 (1.1) 188k Week 2 Day 1 95k x 5 x 2 (2.4) 110k x 2 x 2 (2.3) 110k x 5 x 3 (.60) 180k Day 2 Auxiliary Exercises Day 3 105k x 5 x 1 (2.3) 150k x 5 x 2 (.70) 205k Day 4 Auxiliary Exercises Day 5 105k x 3 x 1 (2.25) 140k x 3 x 1 (2.3) 140 x 5 x 3 (.80) 190k Week 3 Day 1 90k x 5 x 2 (2.2) 115k x 3 x 1 (2.1) Day 2 Auxiliary Exercises Day 3 105k x 5 x 1 (2.3) 170k x 3 x 1 (.80) 200k Day 4 Auxiliary Exercises Day 5 120k x 3 x 1 (2.45) 150k x 3 x 1 (2.6) 180k x 1 (.90) 190k Week 4 Day 1 90k x 5 x 2 (2.2) 135k x 3 x 2 (2.1) Day 2 Auxiliary Exercises Day 3 120k x 5 x 1 (2.25) 130k x 5 x 3 (.60) 200k Day 4 Auxiliary Exercises Day 5 120k x 3 x 1 (2.6) 140k x 3 x 1 (2.35) 200 x 1 (1.0) 200k Average 105 / 80% (2.3) 130 / 79% (2.23) 192 Exhibit 6: Both the top-end weights are averaged in the snatch and clean & jerk regardless of what the previous sets were and regardless of the sets and reps of those prior sets. Just the most weight lifted in the snatch. The lifter should tie volume into the average time-in-motion. As the volume increases the average time-in-motion should remain constant. If the volume causes a decrease in the average times-in-motion, then the lifter should make some adjustment to the volume rather than the weight. These will be indicators for the coach or lifter to study and see where they can make some small adjustments in the program to the next session(s). Repetitions in the snatch and clean & jerk are considered to be some inducement to progress, but the lifter should not count the volume (additional sets) into the spreadsheet. The volume can have an impact on subsequent workouts and even the current workout as to how well the lifter can maintain their precision and specific times-in-motion. The volume would be inconsequential for determining average monthly intensities but the lifter should The equivalent force of all the sets and reps with the top-end weight in the squat averaged 192k, and 86% of that was 165k or right at the lifter’s PR meet clean & jerk. Only meet PRs should be used as indicators. The best equivalent squat for the month was 205k which is equal to 176k clean & jerk; however, it’s the average that counts not the one-shot deals. Training should be measured; by the average, not the one-time big lifts that might

not come again for several months, depending on where the lifter might be in their progression. At this point trying to clean & jerk anything over 165k would constitute overloading, since there is nothing to indicate those overall times-in-motion would stay at 2.5 seconds or faster with more than 165k. Programming is not just about numbers and sets and reps. There are a lot of other elements to consider both when writing a program and when looking at the data after the training for that week or month has ended. The whole point of training is to get the lifter ready for competition; therefore, the goals of training must be centered on preparation for certain lifts to be successfully executed enough times in practice, so the 1st and 2nd attempts in the snatch and the 1st and 2nd attempt in the clean & jerk are almost assured. To keep from overloading the average intensity should be around 80% for both the snatch and clean & jerk monthly, (see Appendix B for more details). As the average intensity rises the average proficiency of the training will decrease. After a few months of higher averages, such as 85% to 90%, there will be an automatic reduction in that percentage or 90% will begin to feel and be 100% effort. The concept of being able to adapt to higher monthly averages in intensity is not viable. Since the lifter should base those percentages on the lifter's current PRs any attempt to force progress by merely increasing the average monthly intensity will be futile in the long run. Lifters who train using two sessions per day or three will have to use the top-end weights executed in the main training session, or the highest top-end weight handled that day. These averages should be based on daily maximal and not averages of the two or three sessions. The reason for this is that some of the earlier sessions could be extremely light, and that would skew the monthly average enough to cause the lifter to overtrain if they tried to stay at 80% to 85% then the top-end weights might need to be raised to 90% or more to remain at 80% or 85%. Multiple Sessions 1 Exhibit 7 Date Snatch Clean & Jerk Week 1 Day 1 Morning Session 1 70% 5 x 1 70% 5 x 1 Afternoon Session 2 85% 5 x 1 85% 3 x 1 Top-end 85%% 85% Exhibit 7: Only the top-end weights from the afternoon session would be used to arrive at the percentage for that session in both lifts. The lifter should ignore the morning session unless those top-end weights were greater than those in the afternoon session. Multiple Sessions (Average Intensity) 2 Exhibit 8 Date Snatch Clean & Jerk Week 1 Day 1 Morning Session 1 70% 5 x 1 (2.1) 70% 5 x 1 (2.0) Afternoon Session 2 85% 5 x 1 (2.3) 85% 3 x 1 (2.4) Top-end 85% (2.3) 85% (2.4) The lifter should record both the top-end weights and the top overall times-in-motion from the main daily session. These become benchmarks or indicators of what is to be expected precision and time wise at each particular percentage. At 90% the overall times might drop slightly (2.4), but should not drop drastically (3.0 or slower) as this could be an indicator of too much overloading in previous sessions or some fatigue from too much volume. Whatever might be causing the problem, it would need to be explored and then corrected by manipulating the volume and intensity levels. Since the squats and pulls are limited by time-in-motion over the amount of weight, those squats and pulls should not cause any adverse effects to subsequent training, unless the volume gets out of hand, which can easily be corrected by backing off the volume. Chapter 9: Equivalent Force Tables The following tables can be used to readily access what a squat slower than one-second would be equal to a one-second. The one-second times are in bold type and those corresponding weights along with the times from 0.5 seconds to 2.5 seconds are noted. Exhibit 9: Equivalent Force Table 1 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3 1.4 1.5 25 35 45 55 65 75 80 85 90 95 100 30 40 50 60 70 80 85 90 95 100 105 35 45 55 65 75 85 90 95 100 105 110 40 50 60 70 80 90 95 100 105 110 115 45 55 65 75 85 95 100 105 110 115 120 50 60 70 80 90 100 105 110 115 120 125 55 65 75 85 95 105 110 115 120 125 130 60 70 80 90 100 110 115 120 125 130 135 65 75 85 95 105 115 120 125 130 135 140 70 80 90 100 110 120 125 130 135 140 145 75 85 95 105 115 125 130 135 140 145 150 80 90 100 110 120 130 135 140 145 150 155 85 95 105 115 125 135 140 145 150 155 160 90 100 110 120 130 140 145 150 155 160 165 95 105 115 125 135 145 150 155 160 165 170 100 110 120 130 140 150 155 160 165 170 175 105 115 125 135 145 155 160 165 170 175 180 110 120 130 140 150 160 165 170 175 180 185 115 125 135 145 155 165 170 175 180 185 190 120 130 140 150 160 170 175 180 185 190 195 125 135 145 155 165 175 180 185 190 195 200 130 140 150 160 170 180 185 190 195 200 205 135 145 155 165 175 185 190 195 200 205 210 140 150 160 170 180 190 195 200 205 210 155 145 155 165 175 185 195 200 205 210 215 220 150 160 170 180 190 200 205 210 215 220 225 Exhibit 10: Equivalent Force Table 2 0.5 0.6 0.7 0.8 0.9 1 1.1 1.2 1.3 1.4 1.5 155 165 175 185 195 205 210 215 220 225 230 160 170 180 190 200 210 215 220 225 230 235 165 175 185 195 205 215 220 225 230 235 240 170 180 190 200 210 220 225 230 235 240 245 175 185 195 205 215 225 230 235 240 245 250 180 190 200 210 220 230 235 240 245 250 255 185 195 205 215

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Squats executed just above parallel can be interpolated to a full squat by adding 33k to the numbers in the table above. Since it takes about 1/3 of a second from the full squat position to just above parallel; then, 0.33 x 100 = 33k; thus, a 290k full squat would equal; 290k + 33k = 323k in 0ne-second or 290k – 33k = 257k in 0.67-seconds. The 0.67-second 257k back squat would be; 257k x 86% = 221k clean & jerk equivalent. The 0.67-second time-in-motion assures the lifter can clean & jerk 221k. If the 257k is one-second, then the lifter would only be assured of the clean not the jerk. Again, each lifter will need to determine their relationships between their one-second squat max and other squats of different masses or times, to calculate the equivalent clean & jerk in 2.5 seconds or faster. My calculations from the formulas I derived from years of studying lifter's and their times-in-motion relative to their maximal squats. The lifter should understand that these are time equivalent, and they should not use them to forecast a squat executed in one-second to a 2-second squat, as this would depend on the ratio of fast to slow twitch fibers and how the lifter has developed those fibers. The longer the lifter trains using non-decelerated velocities the harder it will be for them to achieve greater weights using decelerated velocities, even though the table above might indicate they could. The tables can be used to forecast a squat executed in 1.2-seconds to a one-second squat. For example, a squat of 230k, executed in 1.2 seconds would more than likely allow the lifter to squat 170k in 0.5 seconds. 230k – (1.2-1 = .2 x 50) 10k = 220k, and 220k – (.5 x 100) 50k = 170k Once the lifter can identify their times-in-motion, they can multiply 86% to their one-second back squat max or a lift that is equivalent to one-second and find out what their clean & jerk potential is and calibrate the Equivalent Force Table. Being mindful that not only the clean & jerk be 86% of the one rep max back squat, but that it be achieved in 2.5-seconds or faster. Otherwise, the lifter could skew the clean & jerk toward a slower than one rep max back squat. (See Appendix A for the equivalent clean & jerk to one-second back squat) The challenge in the squats must center on velocity instead of just the amount of weight regardless of that velocity. Trying to set a PR back squat in 0.5-seconds can be even more of a challenge than setting a max back squat with times slower than 1.5-seconds. Faster times-in-motion are more challenging for the lifter, but far

less stressful to the muscles, joints and adrenaline system. Even though the squats and pulls (deadlift) were extracted out of the sport of weightlifting to form the sport of powerlifting, it doesn't mean those same squats and pulls should be trained the same as they are in powerlifting. The mechanics and methodology between powerlifting and weightlifting are completely different as is the velocity requirements. The Front Squat Some top lifters don't even do front squats aside from those they do when executing the clean & jerk. Some do front squats, and some do both. I guess it depends on how those two particular squats affect the lifter's ability to progress and, in some cases, how they affect the lifters joints. Doing clean & jerks and front squats do seem to be a bit redundant, but can't argue with success or necessity. The front squat follows the same law of equivalent force production as the back squat, but the lifter will handle less weight than they handle in the back squat. Normally a one-second front squat should be equal to the lifters clean & jerk meet PR. Usually not much more than 110% of clean & jerk can be done in 1 second out of the rack. 110% would be an excellent separation between the front squat in 1 second, and the clean & jerk meet PR. In all cases, the ratio between the back or front squat and clean & jerk leaves out the time-in-motion of those squats. It is not possible to correlate a squat to another lift based on absolute amounts of weight where the time-in-motion, during ascension, is wildly different from one rep to the next and from one PR to the next. Without knowing those times, it becomes more of a guessing game or those correlations matchup out of pure luck, but not from any scientific reasoning. Usually squats achieved in times slower than 2-seconds are used to produce the 80% ratio that seems to be widely accepted. The following will explain why this is irrational. Example 1: A lifter has a back squat of 240k, and they achieved it in 2.5-seconds. His clean & jerk is 168k and is 70% of back squat, not 80%. The equivalent force of the 240k in 2.5 seconds is; 240k - (2.5 - 1.0 x 50) 75k = 165k The back squat in 1 second and the clean & jerk would be 165k x 86% = 142k. Since this lifter was able to do 168k clean & jerk the equivalent 1 second back squat would be 168k / 86% = 195k. The 240k back squat was less forceful than his clean & jerk by 26k and is overloading by the difference between the 195k and 240k or 45k worth of overloading. Another factor would be the overall time-in-motion of the 168k clean & jerk which was probably over 3-seconds because the lifter decelerated during the 240k in 2.5-seconds and the lifter has learned to squat more weight slow, which transfers over to the clean & jerk by way of the 1st pull and the ascension during the clean. The jerk could also be affected. As anyone can see by the above example, those correlations are all over the place when the times are slower than 1 second. The following shows how the lifter can Determine equivalent force when they execute multiple sets with different weights and reps along with different times-in-motion. Example 2: A lifter does a squat workout by doing the following; 200k x 3 @ .7 seconds = 200k + 10k + 30k = 240k in one-second 205k x 3 @ .7 seconds = 205k + 10k + 30k = 245k in one-second 210k x 2 @ .8 seconds = 210k + 5k + 20k+ = 245k 215k x 1 @ .8 seconds = 215k + 0 + 20k = 235k The average times-in-motion can be easily calculated by adding them up and dividing by the number of reps; 3 reps x .7 = 2.1, 3 reps x .7 = 2.1, 2 reps x .8 = 1.6, and 1 rep x .8 = .8 2.1 + 2.1 + 1.6 + .8 = 6.6 / 9 reps = .73-seconds. The lifter must first determin which set gave the best equivalent back squat in one-second. The lifter should only use the best set out of multiple numbers of sets for the spreadsheet. The 2nd set resulted in the best equivalent back squat in one-second, and the lifter should enter this into the spreadsheet, and discard the other sets, but note them in the journal for future reference for determining volume. The 245k in one-second would be equal to a; 245k x .86 = 210k clean & jerk. The above averages are comparable to a lifter with a 210k clean & jerk, and the volume of those the squats would be used to determine what effect they had on subsequent sessions. Speed (m/sec) vs. Time-in-motion (t) A lot of research is carried out in sports science regarding speed or m/sec as an indicator of a particular performance or to define different performances. Top-speed is also used in drag racing to denote how fast the driver covered the quarter mile trek; however, the top-speed in drag racing is not used to determine who won the race. The time it takes to get from the starting line to the finish line is used to determine the winner, i.e., whoever crosses the finish line first. The same in track where the times from start to finish are used and not who achieved the fastest speed during the race. Top-speeds can be meaningless if the athlete doesn't achieve a smooth continuous accelerated velocity from start to finish, and is true for all sports. In the shot put the thrower can move at a higher speed than another thrower during the spin but might not out-throw the other athlete who moves with a smooth continuous accelerated velocity. Now if that faster thrower were to be able to apply his faster speed with a more smooth and continuous accelerated velocity, he would have a better chance of winning, because all other things being equal

the faster athlete will always win, including strength sports, weightlifting, and even powerlifting. There is nothing wrong with knowing what the top-speed of a lifter is, from a research standpoint, but they should understand that most athletes are trained using a stopwatch, not a radar gun, except a baseball pitcher. But even the baseball pitcher must deliver the throw with a smooth and continuous accelerated velocity for him to be able to throw the ball at 93 mph accurately and consistently. Chapter 10: Auxiliary Exercises As mentioned earlier, auxiliary exercises are for the overall fitness of the lifter and not necessarily to fix something or directly cause the primary lifts to become more proficient. Becoming a little more fit for one's sport is direct cause enough because it will always be how the athlete goes about training their events that will be the ultimate factor in how that athlete progresses. Auxiliary exercises are to the weightlifter as the Universal Gym set is to the gymnast. It is essential that auxiliary exercises take on the distinction of being exercises, as the name implies, and not events where the lifter trains for PRs as fervently as they do the snatch and clean & jerk. Since the 1960s, I have seen many faddish exercises come and go, such as snatch from boxes, the muscle snatch, snatch balances, combinations, behind the neck jerks, and many others. Most being relegated back into the realm of just plain old exercises where they belong or stopped being part of the lifters arsenal because they soon come to find out those exercises don't fix what they are sometimes claimed to fix. When those auxiliary exercises are pushed to maximal efforts too long and too hard and become events that wind up competing with the primary lifts causing mediocrity. Another thing that happens is the lifter will go from one fad to the next in some quest to find something that will work that isn't as hard to do as what does work. For example, many times lifters do the clean without a jerk and jerk out of the rack instead of the clean & jerk. Doing separate cleans and jerks is easier than executing the clean & jerk; however, this only boosts the ego of the lifter and could fool them into thinking they can put those separate lifts together at the same weights in competition. Of course, this never works, but the lifter never blames it on not training the clean & jerk, because that is too hard. Doing clean & jerks is hard. The hard is what makes it great. The real quest of the lifter is trying to find something that will work and assure them of the progress they deserve because of all the long and hard training they have been doing. The athlete sees top lifters doing specific auxiliary exercises, and assume those exercises are what made those top lifters great. Top lifters are already great, so anything or any lift or exercise they do is likely also to be and look great. Auxiliary exercises are those things we have to do, like eating and breathing, but those things alone will not make anyone a great athlete. Auxiliary exercises are necessary to go through the constant rigors of training. As much as anything else, auxiliary exercises are used for warmup and warm down purposes, and during a conditioning phase after a lengthy rest period from a major competition. Trading Energy Store Athletes not only have the same number of hours in the day to train, but they also have the same amount of energy to use. Everyone starts on a level playing field; some might be luckier than others when it comes to talent, fast reactions, flexibility and a job that allows them to train like a professional athlete, even so, almost everyone can become the best they can if they have the desire and determination. Auxiliary exercises should be programmed, but they do not need to program them as thorough as the primary lifts. These exercises can be randomly chosen out of a group of favorites or be a little more specific. The lifter must be mindful not to allow any these exercises to creep into the category of an event where the lifter attempts maximum efforts or PRs. The available energy stores for each lifter and each session is not infinite. Most of the energy will be spent early on in the session and on the first lift, usually the snatch. If the lifter comes off a prior session where much of their energy stores were exhausted that will cause the next session to be less effective. It is essential for the auxiliary exercises never to become stressful or taxing, but they should be invigorating and always have a positive effect on subsequent sessions. Auxiliary Exercises The following list is just some of what should be considered auxiliary exercises; Snatch off Boxes Snatch off boxes has been around for decades and seems to have become staunchly engrained into the events category. This one will need to be assessed by each lifter, some lifters swear by them, and others don't do them at all. Snatch Balance This particular lift has it in the name that it fixes something, in particular, the balance of the lifter when in the full squat position in the snatch. The claim that it can fix a balance problem is puzzling since most balance problems occur from the platform and aside from that, the snatch balance is more of a squat jerk out of the rack with a snatch grip. More likely to aid the full squat jerk than the snatch, but it is still an exercise, as well as a warmup exercise, and should be addressed as such and not as an event. Even so, working one's balance would require using less weight and more volume to lock in that precision of motion. Jerk

Out of the Rack or off Boxes The jerk out of the rack is another exercise that has been around forever and has reached epic proportions as an event. The jerk out of the rack is comparable to the bench press in powerlifting for its ego boosting ability. Again, some top lifters do them, and some don't. The main problem is that overloading can occur when the lifter jerks more weight from boxes than they can clean & jerk. Behind Neck Jerk out of Rack or off Boxes Purely a magical exercise with little or no purpose for the sport of weightlifting. It usually passes as a strength stunt for many super heavyweights who have retired from the competition platform but want to continue to shine in something else. This exercise places the lifter in an almost perfect position to not only do the dip and drive, but it affords a more stable platform from which to jerk the weight from, i.e., a rigid upright torso from start to finish with the bar starting from the same position it will be in when the weight is overhead. Hang Snatch and Clean Another stunt lift, for the most part, i.e., Klokov and his hang snatches. These are probably one of the best exercises, but, more times than not, the lifter turns them into an event, or they handle too much weight for them be productive. Press Athletes no longer contest the press, but it is still a useful exercise if there is no deceleration anywhere as the weight is moving to the lock-out position. Bench Press Be very careful with this one. It can be extremely brutal on the shoulders and rotator cuff when the lifter handles too much weight for long periods and sometimes it doesn't take that much weight or that long a time to do its damage. This lift tends to become a stunt lift among retired lifters and some who have not retired. Again, less is more when it comes to this exercise. Behind Neck Press The behind the neck press is a good exercise when the lifter uses relatively light weights. I have seen some lifters use a snatch grip, but I would warn against that even with light weights it can put a lot of stress on the arms and shoulders. Push Press As long as the weight is locked out without much effort or any deceleration, these are good exercises. Muscle Snatch (Stiff Leg Snatch) As long as the arms lockout without any pressing motion these are good exercises but are mostly used as warmups in the early stages of the incremental increases. Little more than 50% of snatch PR can be used doing this exercise before the weight begins to decelerate and cause a grinding pressed out action. The lifter should avoid those decelerated pressing actions. Good-Morning Exercise The good-morning exercise is one of the best movements around, that deserves to be called an exercise. If executed correctly and with some velocity, this exercise will keep the lower back muscles, used during the 2nd pull, in good shape and condition. Stiff Leg Dead Lift These are good as a warm down exercise at the end of training, but never should be turned into an event or anything over 100% of clean & jerk be used. The list of auxiliary exercises is endless, and those lists are readily available on the internet. Regardless of what the athlete calls it an exercise if it's not a primary lift it is just an exercise and not a fixer upper or something that can directly help increase the progress of the lifter or cause the lifter to become more proficient. They will indirectly benefit from these auxiliary exercises by being a little more fit for their events from working those muscles that don't get worked as much as they do from the primary lifts or in the same way as those primary lifts. Auxiliary exercises also help the lifter during a conditioning phase and a lengthy active rest period. Chapter 11: Programming the Auxiliary Exercises When the coach or lifter schedules auxiliary exercises on a day when they are not executing primary lifts, it makes it a lot easier to order those lifts. The volume, reps, and sets must be commensurate with how that volume affects subsequent sessions where the lifter will be executing the primary lifts. Besides auxiliary exercises, the lifter can add to the mix, some forms of bodybuilding exercises, jogging, and short sprints. Auxiliary exercise day should be relaxed, calm even light-hearted. It should not create any stress, anxiety or frustration. The exercises, however, should be executed with precision and smooth, controlled velocity, but not so fast the lifter can manhandle the weight causing the precision to be thrown off. Each rep should be the same in both precision and time-in-motion from the first till the last rep and first to the last exercise. Those lifts such as snatches off boxes and jerks out of the rack should be shifted over to the days the primary lifts are scheduled, so those don't interfere in the auxiliary exercise training, and they can be ordered instead of the snatch or clean & jerk. But be mindful that doing something different from what we do and doing it at the same intensity can bring about mediocrity, causing both the snatch and snatch off boxes to progress slowly if any progress can be made at all, especially during the later stages of the lifter's development. The auxiliary exercises are beneficial for ingraining precision over a wide range of different motions, which helps the lifter to become more mobile in their actions. If the lifter executes auxiliary exercises using erratic movements, velocities and deceleration those exercises will do more harm than good, because those same actions will be carried over to the primary lifts. Precision lifting (repeated trajectories) must be

ingrained so when the lifter is erratic they will feel those erratic motions, and they can make corrections on the next rep or set. Sample of Auxiliary Exercise Schedule Exhibit 13 Date Auxiliary Exercises Week 1 Day 1 Snatch off Boxes 60% 5 x 2 Press 40% 3 x 5 Good Mornings 60% 5 x 5 Stiff Leg DL 70% 5 x 5 Day 2 Hang Clean 60% 5 x 2 Push Press off Boxes 60% 4 x 3 Muscle Snatch 50% 5 x 1 Snatch Balance 60% 5 x 1 Week 2 Day 1 Snatch Balance 60% 10 x 1 Snatch High Pulls 40% 5 x 3 Hang Clean 60% 5 x 2 Press 40% 5 x 2 Day 2 Back Squat 50% 5 x 5 Snatch off Boxes 60% 5 x 2 Push Press off Boxes 60% 3 x 3 Good Mornings 60% 5 x 5 Exhibit 13: The lifter should base the percentages on either snatch or clean & jerk depending on which aspect of the exercise is more characteristic of those events. The lifter should base the snatch off boxes, muscle snatch, and snatch balances off the snatch. The others they would base off the clean & jerk; as this is much easier than basing them off their own PRs since auxiliary exercises to stay exercises, the lifts must not ever become events where the lifter contests them for PRs. The good-morning exercise can be up to 70% of clean & jerk PR; it depends more on how efficiently those can be executed not how much weight the lifter loads on the bar. The stiff leg DL can be as much as 100% of the clean & jerk, but 80% might be more effective. If the lifter schedules the squats as an auxiliary exercise, they should be for stretching out and with 60% or less of the clean & jerk. The lifter should never know how much they can back squat as far as absolute amounts are concerned. They only need to know how much they can squat in one-second and the equivalent clean & jerk is at least 86% of that one-second back squat. Fixing Problems When specific auxiliary exercises are used to try and fix some problem or weakness a lifter might be experiencing with their technique or force production, the lifter should no longer think of those exercises for the sole purpose of creating a more fit lifter. Those exercises become something akin to a tool, such as a screwdriver or a drill. So immediately if the lifter sees all these myriads of exercises as tools, they will always see them that way and not merely as an exercise. If the lifter is not having any problems, then they might conclude that they don't need to do those exercises. The idea that an athlete can fix a problem by doing something different from what they do is as an odd concept, and stems from the notion that if the lifter is doing something wrong in the snatch then the problem will not show up when doing something else that is claimed to be a fixer-upper for that problem. Great logic, but is it logical? If the lifter can do all those fixer-upper exercises with such precision and velocity, then why would they have a problem with the snatch itself? And if they cannot do those fixer-uppers with precision and velocity how will that magically be transferred into the snatch as a remedy, once they are able to achieve precision in those fixer-uppers? Most problems with the path of the bar trajectory being erratic are caused by deceleration when doing squats and pulls. The remedy for this is simple, but first, the lifter must understand the source of the problem, whether it be deceleration or because subsequent workouts were too extreme or produced too much overloading. The coach or lifter creates many of these fixer-upper exercises for the snatch or clean by eliminating the 1st pull or even some of the 2nd pull. Every time a lifter, who lifts erratic off the platform, does a snatch or clean from the hang or off boxes it will be more precise than off the platform. Partial motions will always be more precise than full motions, but they cannot fix a problem with non-repeating precision, because those problems originate from the platform or during the 1st pull or the transition between the 1st and 2nd pull or transition between the 2nd and 3rd pull. Eliminating those transitional phases cannot help fix a lift which includes them. Snatch or jerk balances can only fix the lifter's snatch or jerk balance exercise not the snatch or clean & jerk. Erratic motions cause balance problems and again doing a snatch or jerk balance will always be more precise than the full movement. Those snatch and jerk balances cannot be transferred over to an erratic lifter and presto the erratic lifting is gone, perhaps for the moment, but those erratic motions will revert when the weight gets close to the lifter's 100% efforts. Unfortunately, erratic lifting (non-repeating precision) might not be able to be cured. It depends on the athletic ability of the lifter and the desire to become precise in all the lifts and exercises, not just the snatch and clean & jerk; however, anyone can strive to be more precise in every lift and exercise. Chapter 12 Training vs. Peaking There may not be that much difference in training and peaking for beginning lifters as there will be for the more advanced lifters. These distinctions can be blurred even for the advanced lifters. Training is what occurs between meets and can include conditioning and peaking, as well as tapering. For those lifters that take time off after their major competition, they will come back to training by doing some conditioning work, which consists of light weights and high reps for as long as is needed until they feel they are ready to start the rigors of regular training by gradually increasing the intensity load. To keep the lifter's body and mind in good

working order some period of rest and conditioning should occur after each competition on a scale commensurate with the lifter's level of achievement in the sport. When coming off a conditioning phase that lasted a month or so, the intensity levels might be between 60% and 80% for a month and gradually increase back up to 70% to 90%. The training phase will constitute the greatest amount of time spent around the 70% to 90% area. The average monthly intensity should be around 80% during this phase. The precision and velocity (times-in-motion) should still be the same regardless of the phase of training. The lifter should move in a smooth and continuous acceleration. Average intensities will increase from 75% to close to 88% depending on the level the lifter has achieved. See Appendix B. Peaking is generally the long process of going from conditioning to competition, and some lifters might experience increases during this time. About two months away from the competition the intensity might not average more than 80%, but the lifter might execute the highest at 95% or more instead of 90%. A month away the highest percentage should drop back to 90% and 80% or less the week out. During the peaking phase, the volume in the squats can stay about the same, but the lifter can reduce the pulls in both volume and intensity. The volume in the auxiliary exercises should be cut and mostly eliminated. Lifting off boxes and jerks out of the rack should be reduced considerably if not eliminated to allow the snatch and clean & jerk to be honed in as proficiently as possible from the platform. The lifter should carefully monitor the peaking phase, so the overall times-in-motion in the snatch and clean & jerk do not overly vary. If this occurs, the lifter should reduce the intensity and volume until those times come back into line. Slower times are usually a reflection of too much volume and/or intensity in the squats and pulls or too much overall volume relative to the overall intensity levels. Whatever the reason the lifter needs to generally back off till those times come back in line. Exhibit 14: Program - Peaking Phase Date Snatch Clean & Jerk Back Squat Week One Day 1 100 x 5 x 1 127 x 3 x 1 Day 2 Auxiliary Exercises Day 3 115 x 5 x 1 135 x 1 180 x 3 x 2 Day 4 Auxiliary Exercises Day 5 120 x 3 x 1 140 x 3 x 1 198 x 1 Week Two Day 1 110 x 4 x 1 110 x 2 x 1 110 x 5 x 3 Day 2 Auxiliary Exercises Day 3 123 x 1 135 x 1 150 x 5 x 2 Day 4 Auxiliary Exercises Day 5 123 x 1 155 x 1 180 x 2 x 2 Week Three Day 1 105 x 5 x 1 135 x 3 x 1 Day 2 Auxiliary Exercises Day 3 120 x 1 170 1 x 3 Day 4 Auxiliary Exercises Day 5 115 x 1 150 x 3 x 1 180 x 1 Week Four Day 1 110 x 1 140 x 2 x 1 Day 2 Auxiliary Exercises Day 3 105 x 1 132 x 1 165 x 1 Day 4 100 x 2 x 1 127 x 1 165 x 1 Exhibit 14: The programming will not contain any times-in-motion or averages until those are recorded after the end of each session and then placed into the spreadsheet. Unlike the training phase, the lifter will taper the volume during the peaking phase. The intensity may or may not increase, or it might increase just slightly over the training phase, at least concerning the number of lifts between 90% and 95%. The lifter should avoid 100% efforts during the peaking phase, so the lifter will not have to back off for too long afterward. The peaking phase is not a testing phase to see how much weight the lifter can lift so they will know how much they can lift in the meet, or usually how much they will not lift in the competition. The peaking phase is used to hone in the snatch and clean & jerk to the highest levels of precision and velocity as is possible and begin tapering the volume in all the primary lifts and cutting back on the auxiliary exercises and those volumes and intensity. Tapering cannot be achieved in one week, especially if the lifter has been overloading the squats and pulls and jerks out of the rack or doing decelerated squats and pulls with too much weight. The lifter tapering one-week out works best when the athlete is in their best shape of the season. Being in good shape does not mean that a PR snatch or clean & jerk has to be set two weeks out. It says they are peaked to do those PRs in the meet. Peaking does not mean anything other than the lifter will be at their most proficient level during their competition. Once the lifter has completed the peaking and tapering phase, they will have all the data they will need to begin programming the training for the next competition. Exhibit 15: Monthly Report - Peaking Phase Date Snatch Clean & Jerk Back Squat Equivalent Force Week 1 Day 1 100 x 5 x 1 (2.2) 127 x 3 x 1 (2.5) Day 2 Auxiliary Exercises Day 3 115 x 5 x 1 (2.3) 135 x 1 (2.45) 180 x 3 x 2 (.80) 195 Day 4 Auxiliary Exercises Day 5 120 x 3 x 1 (2.3) 140 x 3 x 1 (2.5) 198 x 1 (1.0) 198 Week 2 Day 1 110 x 4 x 1 (2.1) 110 x 2 x 1 (2.0) 110 x 5 x 3 (.50) 190 Day 2 Auxiliary Exercises Day 3 123 x 1 (2.35) 135 x 1 (2.2) 150 x 5 x 2 (.75) 200 Day 4 Auxiliary Exercises Day 5 123 x 1 (2.3) 155 x 1 (2.45) 180 x 2 x 2 (1.1) 185 Week 3 Day 1 105 x 5 x 1 (2.05) 135 x 3 x 1 (2.3) Day 2 Auxiliary Exercises Day 3 120 x 1 (2.25) 170 1 x 3 (.80) 200 Day 4 Auxiliary Exercises Day 5 115 x 1 (2.2) 150 x 3 x 1 (2.4) 180 x 1 (.85) 195 Week 4 Day 1 110 x 1 (2.0) 140 x 2 x 1 (2.25) Day 2 Auxiliary Exercises Day 3 105 x 1 (2.1) 132 x 1 (2.15) 165 x 1 (.70) 195 Day 4 100 x 2 x 1 (2.0) 127 x 1 (2.1) 195 Average 112 / 86% 135 / 82% n/a 195 Exhibit 15: The peaking report

might be different from what was programmed if the coach or lifter adjust the weights in various sessions. Other than that, the peaking report will include the times-in-motion of the lifts and squats. In this particular report, the lifts lined up as they should, the only problem might be where the lifter trains the snatch at a higher monthly average percentage (86%) than the clean & jerk (82%). This alternating could be an indication that the lifter might do better in the snatch than the clean & jerk or do about the same in the snatch but not as well in the clean & jerk. These revelations will not be made known till after the meet is over and the lifter can cross-check the results against the monthly report or peaking report. However, the lifter should use some caution when the lifter is warming up in the clean & jerk to make sure the right starting attempt is selected. Nine times out of ten the coach will know within a kilo how much their lifter will be able to achieve in the meet if they possess all the information from training needed to make those determinations. Without knowing the times-in-motion and average monthly intensities, it becomes more of a guessing game. Chapter 13: Tapering for Meets The last two weeks before a major competition is the most critical. The lifter must go into this phase ready to compete, but the lifter should make no efforts close to 100% in the snatch or clean & jerk, in fact, the lifter would be well advised to stay under 90% of PR. The emphasis should be on honing in the precision and those smooth and continuously accelerated velocities in the snatch, clean & jerk and squat(s). Not trying to get in a last-minute ditch effort snatch, clean & jerk or squat PR. That can and often does cause the lifter to be unable to live up to those PRs in the meet. Both muscular and adrenaline fatigue could take longer than two weeks to recover from depending on how hyped-up those PRs were and how difficult they were to execute. The tapering phase is also for the lifter's muscles and adrenaline systems to receive some rest by reducing the volume and intensity of all the primary lifts and reducing or even eliminating most of the auxiliary exercises that contain a snatch or clean & jerk motion. The pulls can be eliminated or reduced significantly. It takes some confidence in one's training and ability to be able to back off the type of training that was going on before those two weeks out. Most PR attempts within those two weeks come from a lack of confidence in one's ability to produce those results without actually having to do them. In the early stages of a lifter's development, there must be a level of confidence instilled so they will not feel the need to test themselves two weeks or sooner before a meet. It takes time for an athlete to recover after a major competition where they set PRs or near PRs. It would stand to reason, that if the weightlifter set PRs two weeks out or less from their major competition they would also have to recover. Recovery after a major meet can take at least two weeks and sometimes longer, depending on how intense the overall training was before that meet. The problem in setting PRs a week or less out from the competition is there is not enough time to recover from those PRs. The lifter will be going into the meet somewhat fatigued from overreaching. Not much good will ever come from PR chasing too close to a major competition. Tapering the Squats and Pulls Two weeks out the lifter should hold the back squat to 100% of clean & jerk PR for singles or triples and emphasize velocity. The lifter should reduce the volume somewhat, but the training of the squat should not be that voluminous, to begin with, unless the lifter is also a powerlifter. The lifter should execute enough volume to either progress the lifter to their full potential or maintain their highest level achieved. The lifter should h front squat should be held to 100% of clean & jerk PR or less, and the volume similar to that of the clean & jerk during this phase. Again, nothing good can come from testing the squats in some last-ditch effort to gain some additional strength for the upcoming meet. There is not enough time to gain squat proficiency, but there is time to become overloaded and unable to recover in time for the competition or instead of getting more proficient the lifter gets slower because of heavy decelerated squats. Since the pulls are redundant and should be more of a cross between a primary lift and auxiliary exercise, the lifter can eliminate the pulls the last two weeks, and all that additional energy can go into honing in the snatch and clean & jerk to perfection. If the lifter feels the need to keep doing pulls during this time they should reduce the weight to under 100% of PR, such 90% to 95%, and do singles or doubles, working on velocity. Tapering induces a healing stage where slight twinges, aches, and pains might go away and give the lifter a bit of extra force production during the competition. If the lifter doesn't taper enough, the healing stage will not occur. It is far better for the mind and body to be 100% than to do 100% efforts in the gym those two weeks out and go into the meet feeling 90%. Exhibit 16: Programming - Tapering Phase Date Snatch Clean & Jerk Back Squat 2 Weeks Out Day 1 80% / 105 x 5 x 1 (2.05) 82% / 135 x 3 x 1 (2.3) Day 2 Auxiliary Exercises Day 3 92% / 120 x 1 (2.25) 103% / 170 x 1 (.80) Day 4 Auxiliary Exercises Day 5 88% / 115 x 1 (2.2) 91% / 150 x 3 x 1 (2.4) 110% / 180 x 1 (.85) 1 Week Out Day

1 85% / 110 x 1 (2.0) 85% / 140 x 2 x 1 (2.25) Day 2 Auxiliary Exercises Day 3 80% / 105 x 1 (2.1) 80% / 132 x 1 (2.15) 100% / 165 x 1 (.70) Day 4 Auxiliary Exercises Day 5 77% / 100 x 2 x 1 (2.0) 77% / 127 x 1 (2.1) Exhibit 16: The above training was first programmed and then recorded in the lifter's training log and from there entered into a spreadsheet along with the times-in-motion and equivalent force (not shown here). The lifter executed the snatch at 92% of PR two weeks out on the 3rd day so the clean & jerk was not scheduled. Had it been the intensity should have been less than the intensity of the snatch so there would be no overloading. The auxiliary exercises should be lighter than usual, less volume and probably eliminated the week before the meet on day 4, or just empty bar work scheduled. 110% of clean & jerk should be sufficient enough two weeks out for the back squat, 100% might even be better. The idea being that the lifter cannot make changes in the muscular system close to a meet, but the muscles and adrenaline systems can be negatively affected before the upcoming major competition. The lifter should only alter the overall training during the tapering phase by the volume and intensity, not the routine or regimen of that training, so those ingrained incremental increases can also be honed in for the meet, and a more unconscious effort can be achieved during the warmups and on the platform. I talked about the conscious and unconscious efforts in my book: The Sport of Weightlifting Series: Book 1 Conscious vs. Unconscious. Erratic lifting, inconsistent velocities, and deceleration during parts of the lift will all cause the lifter to lift on a more conscious level, and conscious actions are slower than unconscious actions. The importance of ingraining precision, consistent accelerated velocities and non-decelerated actions in training are so those qualities can be carried over to the competition platform, allowing the lifter to be more efficient in their motions. Chapter 14: Incremental Increases Incremental increases are those sets executed from the empty bar to the top-end weight or last warmup in a competition. The incremental increases will depend on the level the lifter has attained in the sport. As a rule of thumb, the incremental increases should be about 2k to 3k for a youth lifter age 12 and under with totals less than 100k. Lifters with totals of between 100k and 200k should use 3k to 5k increases and for lifters, with totals over 200k their increases can be up to 10k but should taper down to 5k when the weight goes over 80%. The lighter incremental warmups might even be 20k for the top lifters and taper off to 10k after 80% of PR is reached. The incremental increases from the bar to about 40% or even less, (depending on the weight class of the lifter), are composed of various auxiliary style exercises, such as the muscle snatch, snatch high pull, behind neck press, snatch balance, power snatch or clean and so on. The lifter should cease these types of exercises once satisfied they warmed up enough to begin increasing the weight for the snatch or clean & jerk. The incremental warmups and increases should become a well-ingrained regimen that doesn't ever change in the gym or competition. The lifter should ingrain the feeling, precision and speed (time-in-motion) with each incremental increase up to and including the top-end weights. The repeated precision with the incremental increases should become habitual regardless of the variations the lifter executes during the warmup process. Taking too large an incremental jump can cause the muscles to be jarred, and the warm up process and ingraining of the mechanics can be disturbed. There should always be a smooth transition between the first incremental loading and top-end weight or the last warmup in a meet. The incremental increases need to be habitual so those increases do not have to be written down in the programming of the lifter every time they train the snatch and clean & jerk, as this would be a waste of time. The lifter only needs to record the top-end weights and sets. Tables of Incremental Increases Youth, Junior, Open and Master Lifters 100k Total Exhibit 17: Incremental Increases: Youth/Master - 100k total (45 and 55) Snatch 20 23 26 29 32 35 38 41 42 43 44 45 Clean & Jerk 20 24 28 32 36 39 43 46 49 52 54 55 Exhibit 17 - 100k Total: As the lifter's proficiency increases the number of incremental increases should not increase, only the difference in weight between increases will increase. If the lifter needs more warmup reps at any time during the process, they can do a particular increment for a double or 2 singles. 150k Total Exhibit 18: Incremental Increases: Youth/Master - 150k total (67 and 83) Snatch 20 25 30 35 40 45 50 55 60 63 65 67 Clean & Jerk 30 35 40 45 50 55 60 65 70 75 79 83 Exhibit 18 - 150k Total: For those lifters who are totaling around 150k, the increases will become more uniform at 5k per increase. As the weight gets closer to their PR smaller jumps can be added. Again, the number of increases does not change only the weight of those increases. 200k Total Exhibit 19: Incremental Increases: Senior/Master - 200k total (85 and 115) Snatch 20 30 40 45 50 55 60 65 70 75 80 85 Clean & Jerk 40 50 60 70 80 85 90 95 100 105 110 115 Exhibit 19 - 200k Total: As the lifter advances in the sport, the incremental increases will change corresponding to the level they have currently

reached. In the case above the incremental changes went from 5k to 10k up to halfway through the warmups and drop back to 5k up to the top-end weights. This process is done to get in additional work and to keep those 10k increases from jarring the muscular system as the weights get closer to the lifter's PRs. 250k Total Exhibit 20: Incremental Increases: Open/Master 250k total (110 and 140) Snatch 20 30 40 50 60 70 80 90 95 100 105 110 Clean & Jerk 20 50 70 90 100 110 115 120 125 130 135 140 Exhibit 20 - 250k Total: Even though the total has increases by 50k from the 200k example, the incremental increases are still closely matched, just fewer 5k increases as the lifter gets closer to their PRs. 300k Total Exhibit 21: Incremental Increases: Open/Master 300k total (135 and 165) Snatch 20 40 60 80 100 105 110 115 120 125 130 135 Clean & Jerk 20 60 80 100 110 120 130 140 150 155 160 165 Exhibit 21 - 300k Total: The major change is in the first incremental increase after the bar work, which went from 30k to 40k. The incremental jumps are still about the same as the 250k total, just the 1st incremental increase from the empty bar is the greatest difference. These changes in the weight of the incremental increases happen gradually, over time, as the lifter's moves toward their full potential. Getting used to the same number of increases, from the empty bar to the top-end weight, should become instinctive to make the adjustments necessary for the lifter to stay around ten increases from the 1st incremental increase after the empty bar to the last increase right before the lifter's PR. 350k Total Exhibit 22: Incremental Increases: Open/Master 350k total (155 and 195) Snatch 20 50 70 90 100 110 120 130 140 145 150 155 Clean & Jerk 20 70 90 110 130 140 150 160 170 180 190 195 Exhibit 22 - 350k Total: The major change is there are less incremental increases at 5k to the top-end weights. More 5k increases can be added if the lifter wants to get in more work at the lower weights before hitting the top-end weight. 400k Total Exhibit 23: Incremental Increases: Open 400k total (180 and 220) Snatch 20 70 90 110 130 140 150 160 165 170 175 180 Clean & Jerk 20 90 110 130 150 160 170 180 190 200 210 220 Exhibit 23 - 400k Total: In the above instance, the snatch has only 3 incremental increases from 160k to the incremental increase before the lifter's snatch PR, but no 5k increases in the clean & jerk. Rather than do smaller jumps the lifter might just do the same weight again, in order to make sure they are sufficiently warmed up before doing their top-end weight or fist attempt in a meet. The above tables show how those incremental increases might be ingrained as well as getting in some additional work while moving toward the top-end weight for that session. However, these increases are sliced they should stay the same and become a habit for both training and competition. The overall time-in-motion should also be part of those warmups and stay about the same from the first loading to the top-end weight. The first loading would be where the auxiliary type exercises stop with the empty bar, and the snatch or clean begins. 450k Total Exhibit 24: Incremental Increases: Open 450k total (200 and 250) Snatch 20 70 90 110 130 150 160 170 180 190 195 200 Clean & Jerk 20 90 110 130 150 170 190 200 220 230 240 250 Back Sq Equiv. 100 130 150 175 200 220 235 255 270 280 290 Exhibit 24 - 450k Total: The super heavyweights with totals around 450k will have few if any incremental increases in the 5k range and many will be in the 20k, tapering off to 10k about halfway through those incremental increases. The equivalent back squat to clean & jerk was added to the 450k total table to show which weights should be handled in the back squat after the lifter completes the clean & jerk. These particular squats will start fast at .6 seconds and when they reach the top-end weight corresponding to their clean & jerk PR those times will be closer to one-second. These tables are good to have handy during training for the coach to keep an eye on those times or any deceleration occurring at those top-end weights in the back squat. Every rep in the back squat must be the same time-in-motion regardless of the weight or number of sets, i.e., 290k x 3 @ 1.05 seconds or 280k x 2 @ .9 seconds. Divide each back squat incremental increase by 86% and round up or down to the nearest 5k. The lifter can also match the best back squat in one-second to the meet PR clean and Jerk and come up with their ratio, but remembering that those decelerated actions in the squats must be ceased in training so that ratio will be adjusted correctly over time. Chapter 15: General Programming Guidelines Programming is more complicated than just putting down weights, percentages, reps, and sets to paper and ordering exercises. Programming becomes more predictive than the actual reality of the situation concerning the individual athlete. In other words, the program is predicting what the lifter will do on any given day and that they will do everything written down with precision and velocity on that particular day precisely as the coach or lifter wrote it down. The probabilities that this will occur are greater than winning the lottery twice in a row. Programs are not only predictive; they usually are predictive at the high end, making it even more certain that the lifter will not achieve most of the workouts as written. When the lifter gets through the workout as

written, it is said to be a good day, and when they fail to achieve the workout as written, that then becomes a bad day. However, it wasn't the failure of the lifter that produced the bad day; it was the failure of the program. If the program is causing good and bad workouts to occur, like being on a roller coaster, then the program needs to be adjusted so the workouts are smoothed out and there are no good and bad days, just overall proper training. The coach or lifter should not write the program as something the lifter must do exactly verbatim to induce progress out of the lifter. That approach cannot work and will not work. The lifter should be coaxed gently towards progress. Most bad days are caused by the decelerated squats and pulls, which overload the lifter's muscular and adrenaline systems making subsequent workouts less effective and creating an automatic reduction in the intensity levels of the snatch and clean & jerk. Meaning an 85% snatch or clean & jerk might be closer to a 100% effort, or the snatch might not be as affected as the clean & jerk. Decelerated squats, depending on how extreme they are, can cause all sorts of havoc with the training of the snatch and clean & jerk. Once the lifter stops executing their squats using deceleration and achieving times-in-motion in the 0.5 to the 1.5-second range for the squats, and when they feel those times slowing down they halt the action, then they will see a marked difference in the training patterns, as far as having good and bad days is concerned. Those good and bad days should be smoothed out, and the lifter should direct the training toward the snatch and clean & jerk, instead of trying to achieve a colossal back squat by using extreme deceleration or erratic times-in-motion when doing reps. The lifter will discover that non-decelerated squats can eliminate the need for squat routines, aside from the routines the coach or lifter builds into the programming using the speed squats. For any program to work effectively the following conditions should be adhered to; 1. Become Proficient Technically The lifter must learn how to lift correctly before beginning the rigors of, or they will forever be trying to fix things with magical exercises. There is no point in programming a lifter until they have mastered those mechanics of the snatch and clean & jerk (from the platform), and the assistance lifts: the squats and pulls (using accelerated velocities). 2. Becoming Precise If the lifter doesn't master the technical aspects of the lifts, they will be more inclined to become erratic in their motions when doing those lifts. If the lifter doesn't correct the inconsistent lifting from the get-go, it too can cause problems in the long run and make it difficult for the lifter to progress to their full potential. Again, the lifter should not be training under a formal program until they have eradicated most if not all erratic lifting. 3. Use Smooth Consistent Accelerated Velocity Smooth accelerated velocities are mandatory for producing proficiency in the primary lifts. It goes hand in hand with precision. A lifter cannot be precise and technically proficient, yet generate the necessary force to be able to lift what they are capable of lifting. Smooth accelerated velocities will create a skilled and precise lifter and vice versa. 4. Non-decelerated Motions Programming the squats and pulls as in powerlifting is a big mistake and the sooner this is corrected, the better. Nothing good can come from decelerated squats and pulls. They might make the lifter stronger, but not faster, and faster is what the lifter needs to progress to their full potential. 5. Time the Primary Lifts Just as in track and competitive swimming the coach uses a stopwatch to time and record the races or laps of the athletes. Weightlifting should be no different. 6. Habitual Incremental Increases Much of the training should become routine or rote. For athletes to get better at what they do they must do it over and over so they can execute repeated precision and speed on more of an unconscious level. Having to decide how much weight to load on the bar every workout takes away from those unconscious actions the lifter needs to incorporate into the snatch and clean & jerk. The squats would be the same. 7. Calm and Relaxed Training Sessions Going into the gym all hyped-up or anxious about how the training will go or how much they are going to lift does little to progress the lifter. Becoming a good athlete requires a certain amount of relaxation of the muscles and a calm demeanor for each lift to be executed with precision and smooth velocity. Training is never about how much weight the lifter can lift in the gym, but how they lift that weight and how that will affect subsequent workouts. The reality of training as an athlete is doing the bare minimum to make the most progress. This approach keeps the athlete in good condition and fresh for every workout where they can have the most efficient workout possible. Trying to adapt to long and hard overloaded workouts is futile and does nothing but slow the progress of the athlete down. The following charts are examples of some different ways a coach or lifter can write a program. Incremental increases and pre-warmups need not be included in the program once the lifter has established them as permanent. Exhibit 25: Programming by Percentages Date Snatch C&J Back Squat Front Squat Cl Pulls Sn Pulls Week 1 Day 1 70% 70% 100% Day 2 Auxiliary Exercises Day 3 80% 80% 90% Day 4 Auxiliary

Exercises Day 5 85% 0 100% Week 2 Day 1 75% 75% 110% Day 2 Auxiliary Exercises Day 3 85% 80% 105% Day 4 Auxiliary Exercises Day 5 80% 90% 100% Week 3 Day 1 70% 70% 100% Day 2 Auxiliary Exercises Day 3 80% 85% 120% Day 4 Auxiliary Exercises Day 5 90% 85% 100% Week 4 Day 1 75% 75% 90% Day 2 Auxiliary Exercises Day 3 80% 85% 110% Day 4 85% 90% 105% Average 80% 80% 110% 93% 102% 102.5% Exhibit 25: Using percentages can be ambiguous since some days 80% could feel like 90% and instead of training the lifer is stressing their muscular system with non-beneficial loading. The coach or lifter should pick a top-ending amount from the incremental increases, and they should work up to that amount for the desired number of sets and reps. Volume is determined by how well the lifter can maintain repeated precision and consistent times-in-motion. Once the lifter's training devolves into erratic and slow grinding movements, they are no longer training, but they are engaged in some other type of endeavor, where the training as a whole becomes the event instead of the competition lifts. Choosing a top-end weight from the incremental increases can create an 80% average monthly intensity when the coach or lifter calculates the numbers needed ahead of time. The number of lifts ordered per workout is three, in the above instance, but the lifter can add more; however, that depends on how those additional lifts will affect subsequent workouts. If the lifter has established their habitual pattern of doing sets and reps, then the less complex the programming needs to be for that lifter. Allowing the lifter to make decisions only they should make, as regards to the volume, is necessary so the lifter can chart their course; however, the coach is not relieved of their primary responsibility. The coach must still monitor the velocity and precision of the lifter, so the lifter will know whether to stop or keep going. The coach also needs to video and measure the lifter's times-in-motion and record that in the monthly report. The coach is there to manage the skill of the lifter (advise and consent) not push them into early retirement by pushing the lifter to do more than is needed to make progress. The beginning lifter must learn how to lift correctly before learning how to train correctly. As soon as the lifter is ready for the rigors of training, then it should be gradual with more emphasis on establishing clear cut goals for setting PRs in the gym and not willy-nilly, such as when the lifter feels like it. The beginner needs to get used to performing at their best on specific pre-planned dates, just as the meets are pre-planned. Programming for beginners will be more detailed and more dictatorial compared to a more advanced lifter’s programming. Remember, it is not the programming that makes the lifter; it’s how the lifter performs within that program. Exhibit 26 Programming Beginners Date Snatch 60K C&J 75K Back Squat Front Squat Cl Pull Sn Pull Week 1 Day 1 40k 55k 100% Day 2 55k 100% Day 3 45k 60k 100% Week 2 Day 1 45K 55k 100% Day 2 40k 90% Day 3 45k 60k 100% Week 3 Day 1 45K 55k 85% Day 2 55k 105% Day 3 50k 60k 105% Week 4 Day 1 40K 55k 90% Day 2 45k 105% Day 3 55k 65k 95% Average 45k / 75% 58k / 77% Exhibit 26: The beginning lifter doesn’t know how much they can snatch and clean & jerk because they are just learning how to lift and learning the squats and pulls. Watching the lifter learn how to do the mechanics of the primary lifts, the coach should have a good idea about what the lifter is capable of handling. The chart above shows a beginner after they have become proficient in the lifts and they start the rigors of training. The beginner might spend several months doing high volume and under 80% average monthly intensity, whereby gradually building up the intensity and slowly reducing the volume to even out those two elements as the lifter progresses in the snatch and clean & jerk. The squats should stay close to 100% of clean & jerk PR (or potential PR) to learn how to move faster when standing up and transfer that speed over to the clean & jerk recovery. Again, the volume must be commensurate with how that volume affects those subsequent workouts so that the training will be smooth and continuous, as well as the velocity. The beginner should do a considerable number of singles with each primary lift to learn how to move, gain flexibility and learn to move using smooth continuous velocity and non-deceleration in any parts of any lift. The coach should introduce partial lifts after the lifter has gotten their feet wet in a meet and established PR baselines for the snatch and clean & jerk. The beginner should learn how to lift and train correctly before introducing partial lifts into the fray, so the motor pathways are not confused. Precision and velocity must first be mastered in the primary lifts so that precision and speed can be transferred over to the auxiliary exercise. If the beginner trades lifting with precision and smooth acceleration forego setting PRs and erratic lifting they will forever be trying to fix that inconsistent lifting. Exhibit 27: Programming Beginners Monthly Report Date Snatch 60K Clean & Jerk 75K Back Squat Front Squat Cl Pull Sn Pull Week 1 Day 1 40k (2.3) 55k (2.2) 60 (1.1)

Day 2 55k (2.25) 75 (.36) Day 3 45k (2.35) 60k (2.6) 60 (1.5) Week 2 Day 1 45K (2.4) 55k (2.5) 67 (.33) Day 2 40k (2.3) 68 (1.3) Day 3 45k (2.4) 60k (2.7) 75 (.36) Week 3 Day 1 45K (2.4) 55k (2.4) 56 (1.3) Day 2 55k (2.6) 70 (.36) Day 3 50k (2.7) 60k (2.6) 79 (1.4) Week 4 Day 1 40K (2.3) 55k (2.5) 68 (.33) Day 2 45k (2.5) 64 (1.4) Day 3 55k (2.6) 65k (2.7) 64 (.33) Average 45k / 75% (2.43) 58k / 77% (2.5) 69k @ 1.3 75k I changed all the percentages to top-end weight values and based all percentages of squats and pulls off the snatch and clean & jerk PRs. Exhibit 27: Once the lifter transfers the top-end weights and times-in-motion to the monthly report from the initial programming the coach or lifter will get a good understanding of the results from that training. The overall times-in-motion were 2.43-seconds for the snatch and 2.5-seconds for the clean & jerk. The times-in-motion, considering the volume, are very good at 2.5-seconds or faster, and it doesn't produce any overloading. The back squat produced an equivalent clean & jerk of 78k, which is also very good considering the volume. The front squat equivalent was the same as the projected clean & jerk of 75k. Even though the lifter has not tried more than 60k in the clean & jerk, there is a certainty that he will be able to do the 75k, and the 75k might come in training at some designated date or the lifter's first meet. From that point on it's just a matter of gradually increasing the intensity and keeping the volume about the same. The volume will always depend on how it affects subsequent training sessions and the lifter's precision and smooth, consistent accelerated velocity. As the lifter's level of proficiency increases their average monthly level of intensity will stay about the same at 80%, and the volume will also remain about the same. Progress comes from repeated precision, velocity, non-decelerated squats and pulls and the consistent training over time, not from training longer and harder. The lifter trying to train longer and harder than everyone else will only create a degree of overloading in the muscular and adrenaline systems. It is not possible to progress when the lifter is in a state of involuntary reduction in intensity due to training too long and hard. Chapter 16: Monthly Report Diagnostics The following examples will show the monthly report averages for the snatch, clean & jerk and back squat along with those average times-in-motion necessary to make determinations about that particular month and if any areas can be improved. I used the same lifter with meet PRs of 130k in the snatch and 165k in the clean & jerk. (t)1= overall time from the platform to standing up: snatch (t)2 = overall time from the platform to standing up: clean & jerk (t)3=overall time from the platform to locking out the jerk (t)4 = ascension time in the back squat (f)e= Equivalent force in one-second: back squat (e) = equivalent clean & jerk from (f)e Exhibit 28 End of Month Averages: Examples Monthly Report Snatch (t)1 C&J (t)2 (t)3 BSq (1) (t)4 (f)e (e) C&J Month 1 104 (80%) 2.3 135 (82%) 2.4 4.2 178 0.77 201 173 Exhibit 28: The snatch and clean & jerk monthly averages were 80% and 82% respectively. The times-in-motion were 2.3 and 2.4 respectively and under the 2.5-second limitation. Like the back squat the clean & jerk equivalent force would be 10k per tenth of a second or 135k + 10k = 145k @ 2.5 seconds instead of 2.4 seconds. The 145k @ 2.5 would be equivalent to 88% monthly average, which is a good indicator that the lifter has improved, of course, no guarantees until the lifter increases their clean & jerk in the next competition. The back squat averaged 178k @ .77 second and yielded a potential clean & jerk of 173k and an 8k increase in the meet PR or a 105% increase. Both the clean & jerk and back squat showing signs of improvement. Improvement signs that the coach or lifter would not be aware of if those times were not measured and recorded regularly. It is probably more important the back-squat show signs of improving the clean & jerk potential than the lifter pushing the clean & jerk excessively to attain that same result. For the back squat to be a functional assistance lift for the clean & jerk the lifter should apply the same repeated precision and smooth, consistent velocity as applied to the snatch and clean & jerk. Exhibit 29 End of Month Averages: Example 2 Monthly Report Snatch (t)1 C&J (t)2 (t)3 BSq (1) (t)4 (f)e (e) C&J Month 1 104 (80%) 2.3 135 (82%) 2.4 4.2 178 0.77 201 173 Month 2 112 (86%) 2.6 129 (78%) 2.4 4.8 170 0.77 193 166 Exhibit 29: In the example above, the average monthly intensity in month 2 is much higher in the snatch (86%) than the clean & jerk (78%). Although this should have been caught well before the month's end, this can cause the snatch to become dominant over both the clean & jerk and the back squat. The energy needed to train the snatch at those high average intensity levels can be considerable, and those energy stores have to come from the other lifts, notably the clean & jerk and the back squat. The higher intensity level in the snatch caused a lower intensity level in the clean & jerk at 78% and equivalent clean & jerk of 139k as opposed to the previous months 145k. The back squat also experienced a reduced level of intensity or proficiency, and the equivalent clean & jerk was 166k, indicating that the lifter gained little improvement by increasing the snatch numbers in the 2nd

month, even if they established a snatch PR it could have little or no meaning in the upcoming meet and could disrupt the overall training for the competition. Exhibit 30 End of Month Averages: Example 3 Monthly Report Snatch (t)1 C&J (t)2 (t)3 BSq (1) (t)4 (f)e (e) C&J Month 1 104 (80%) 2.3 135 (82%) 2.4 4.2 178 0.77 201 173 Month 2 112 (86%) 2.6 129 (78%) 2.4 4.8 170 0.77 193 166 Month 3 100 (77%) 2.2 139 (84%) 2.3 3.9 182 0.80 202 174 Exhibit 30: In the above report, the clean & jerk has a higher average intensity than the snatch, but the back squat has also seen an increase. In this instance, the energy stores were beneficial to the clean & jerk. The snatch cannot progress the clean & jerk, but the clean & jerk can progress the snatch. The back squat is vital to all the other primary lifts, and the snatch will continue to be about 80% of the clean & jerk, almost regardless of how much more emphasis the lifter places on the clean & jerk. The difference between the snatch and clean & jerk, as far as the general mechanics are minor, about the same as the difference between the 100 meters and 200 meters in track. The clean & jerk average intensity equivalent would be 139k + 20k = 159k. This average intensity is a great indicator that the lifter might achieve the 174k in the next competition; however, the 84% is a bit too high to be maintained over the next few months, so even that should be brought back in line so the lifter can evenly distribute the energy stores over the primaries. By keeping a close eye on these averages as the training unfolds, the lifter can adjust the top-end weights at any time to keep the averages of these three lifts in better alignment, and for the training to be effective in the long run this must occur. By now it should become apparent that programming could be both confusing and less effective if these times are not measured and recorded regularly. Five sets of five in the back squat would mean nothing if the average time-in-motion was 3 seconds, even if the first rep was 1.5 seconds. It is not the one-shot deal in any rep or attempt that has meaning. The lifter should average the one-shot deals into the mix, and they can be dissolved away rather quickly over the training cycle. Too many one-shot deals in training will not only disrupt practice; it can cause overloading and automatic reductions in the levels of intensity of all the lifts. So-called squat routines, where the lifter needs nearly all their energy, over several weeks or a month, to increase the back squat without regard for all those times-in-motion it took to for that increase, will be futile. The squats are assistance lifts for a reason, and that reason is so the lifter can develop both strength and velocity, not just one or the other, but both at the same time. The squats are assistance lifts and; therefore, need not be pushed passed what is needed to progress the competition lifts. The squats; however, should be pushed to maximal amounts in one-second. Chapter 17: Adjusting the Program When the training starts to take a turn-for-the-worst, sometimes for seemingly no apparent reason, then the weight, sets, and reps written down as a predictive truth must now either be changed to reflect those bad-turns or continue because the program would never lie to the lifter. In most cases, the lifter will blame themselves for not being able to push through the program as written. If not corrected, this course of action will set up a domino effect, where the lifter will incur an automatic reduction in the average intensity. The lifter will begin to crash and burn and either get injured trying to do the program as written or quit the sport altogether because the sport becomes too hard or stops being enjoyable or both. There is probably no worse feeling for a lifter than when they achieve their best snatch or clean & jerk, and it feels like a Mac Truck. They might feel like the party is over and they will never do more than that much weight again, no matter what they do. A weight feeling heavier than normal in training, as well as in competition, is a symptom of doing decelerated velocities in the squats and pulls. When the slower squats and pulls cause the 1st pull and standing up with the weight to be slower, and thus that reduction (deceleration) in accelerated velocity causes less force production which could keep the weight from feeling as it might typically feel as when the times-in-motion are faster. The sooner the lifter addresses those problem areas in the pre-set program, the better it will be for the lifter both physically and mentally. Any coach who pushes their athletes to do more than they are capable of doing on any particular day to meet the coach's expectations based on what that coach thinks those athletes should do is doing their athletes great harm in the long run, if not the short term. In most cases, it's the athlete's steadfast dedication and desire that gets them in trouble by causing them to overload or overtrain. It can be difficult for the lifter to get it out of their mind that progress comes from the consistency of repeated precision and smooth and consistent accelerated velocities over long periods, not from spurts of what some consider to be long and hard training bouts. Exhibit 31 Adjustments to Programming Date Snatch Clean & Jerk Back Squat Equivalent Force Equivalent C&J Week 1 Day 1 100 (2.2) 127 (2.5) Day 2 Auxiliary Exercises Day 3 115 (2.3) 135 (2.45) 180 (.80) 195 168 Day 4 Auxiliary Exercises Day 5 120 (2.3) 140 (2.5) 198 (1.0) 198 170

Week 2 Day 1 110 (2.1) 110 (2.0) 170 (2.0) 160 138 Day 2 Auxiliary Exercises Day 3 123 (2.35) 135 (2.2) 150 (.75) 200 172 Day 4 Auxiliary Exercises Day 5 123 (2.3) 155 (2.45) 180 (1.1) 185 159 Exhibit 31: In the above example the lift in the gray box denotes that if the lifter executes the back squat in a slow average time, it can cause the equivalent force and clean & jerk to be way out of sync with the normal training. When lifts are out of sync, the main thing is to recognize it and make some adjustments to the next training session. Since in this example the next session will be composed of auxiliary exercises, the lifter might reduce the intensity and volume of those exercises, and especially cut out any squats or pulls and give the legs a rest before the next session. A close eye should be kept on the next session to make sure the snatches are going as planned and the overall time-in-motion is within acceptable parameters, but more importantly, the back squat should be carefully monitored to make sure the lifter achieves the correct times in each rep. If not, then more rest might be necessary or just taking a day off from training, because it's better to be safe than sorry. Chapter 18 Conclusion There is no magic in the numbers, repetitions, sets, the order of the lifts or the order of the lifts a coach or lifter programs. The magic will always come from the lifter themselves. The programming should only reflect what that lifter is capable of achieving on any particular day using precision of motion, smooth continuous accelerated velocity and non-decelerated squats and pulls. There must be enough snatches and clean & jerks executed, as they are executed in competition, to keep those lifts both progressing and honed in for those competitions. The volume and intensity should only be enough so the lifter can make the most gains with the least effort. It’s admirable for athletes to claim they train long and hard, but the proof is in the pudding, and that training must produce results that reflect those admirable qualities. The platform is littered with many athletes who trained so long and hard; they eventually broke down, or quit, or both. Sound programming should not only progress the athlete quickly and effectively, but insulate them from overloading or overtraining, and above all from major injuries. A coach’s responsibility doesn’t end after the sets of reps and weights have been jotted down for the lifter to follow. The coach must monitor that athlete to make sure they are executing every rep with precision; smooth acceleration and they are not decelerating during any phase of the primary lifts. If the coach or lifter doesn't monitor these things, the programming will not be worth the paper it's written on. The sport of weightlifting, above all, should give satisfaction and be enjoyable. The athlete should strive for a balance between training just hard enough to make progress, but not so hard they are not recovered from the previous sessions sufficient to make progress. Appendix A Equivalent clean & jerk to one-second back squat or equivalent one-second back squat from repetitions where each repetition is one-second. Notations: (r)Sets and Reps; represented as (sets x reps) (f)eOne-second Back Squat; represents equivalent back squat in one-second from back squats of different masses and/or different times-in-motion. (e)equivalent clean & jerk: (f)e x .86; represents equivalent clean & jerk from back squat (f)e. The following tables represent predicted values in a general nature since not all things are equal concerning athletic ability, but for the most part, these are accurate from the standpoint of the proficiency of those squats and how that proficiency affects the clean & jerk. The lifter should correlate the snatch off of the clean & jerk at whatever ratio each lifter’s snatch is to their clean & jerk. Equivalent Clean & Jerk to Back Squat Exhibit 32 Back Squat 1 sec. C&J Equivalent 2.5 sec. Back Squat 1 sec. C&J Equivalent 2.5 sec. Back Squat 1 sec. C&J Equivalent 2.5 sec 50 43 145 125 240 206 55 47 150 129 245 211 60 52 155 133 250 215 65 56 160 138 255 219 70 60 165 142 260 224 75 65 170 146 265 228 80 69 175 150 270 232 85 73 180 155 275 237 90 63 185 159 280 241 95 82 190 163 285 245 100 86 195 168 290 249 105 90 200 172 295 254 110 95 205 176 300 258 115 99 210 181 305 262 120 103 215 185 310 267 125 108 220 192 130 112 225 194 135 116 230 198 140 120 235 202 Equivalent C&J to Back Squat x 5 @ 1 sec. Exhibit 33 r (x5) (f)e (e) r (x5) (f)e (e) 50 70 60 240 260 224 60 80 69 250 270 232 70 90 77 260 280 241 80 100 86 270 290 249 90 110 95 280 300 258 100 120 103 290 310 267 110 130 112 300 320 275 120 140 120 130 150 129 140 160 138 150 170 146 160 180 155 170 190 163 180 200 172 190 210 181 200 220 189 210 230 198 220 240 206 230 250 215 Equivalent C&J to Back Squat 5 x 5 @ 1 sec. Exhibit 34 r (5x5) (f)e (e) 50 90 77 60 100 86 70 110 95 80 120 103 90 130 112 100 140 120 110 150 129 120 160 138 130 170 146 140 180 155 150 190 163 160 200 172 170 210 103 180 220 189 190 230 198 200 240 206 210 250 215 220 260 224 230 270 232 240 280 241 250 290 249 Equivalent C&J to Back Squat x 10 @ 1 sec. Exhibit 35 r (x10) (f)e (e) 50 95 82 60 105 90 70 115 99 80 125 108 90 135 116 100 145 125 110 155 133 120

165 142 130 175 151 140 185 159 150 195 168 160 205 176 170 215 185 180 225 194 190 235 202 200 245 211 210 255 219 220 265 228 230 275 236 240 285 245 250 295 254 Appendix B Programming Methodology The lifter and coach must first establish the training methodology before they can effectively write a training program. Training methods include repeated precision, specific times-in-motion, and the amount of deceleration that will be acceptable, which in my opinion should always be none. I have outlined the training and programming methodologies below: I. Training Methodologies A. No Erratic Motions 1. Jumping forward or backward more than normal for the individual. 2. Taking steps forward or backward when standing up from a snatch or clean. 3. Instability in the bottom of the snatch or clean or jerk 4. Erratic times-in-motion 5. Deceleration during the 1st pull or standing up with the weight. B. Non-decelerated Actions 1. Ascension during the squats 2. Pulls 3. 1st pull 4. Standing up after receiving the weight C. Specific Times-in-motion 1. Overall Time from Platform to Standing Up in 2.5 seconds or faster. 2. Ascension Time in the Squats is one-second or faster. 3. Time from the Platform to the Knees should be 0.33 seconds or faster. 4. From Drive to Lock-out in the Jerk should be 0.5 seconds. Training methodology has to do with how the lifter conducts the training before the lifter knows the schedule of lifts, along with the number of sets and reps for those lifts. Those items concerning programming are as follows; II. Programming Methodologies A. Number of Days Per Week for Training B. Number of Sessions Per Day C. Calculating Number of Weeks for Training D. Calculate Number of Weeks for Peaking E. Scheduling of Primary Lifts 1. Snatch 2. Clean & Jerk 3. Squats 4. Pulls F. Variations of the Primaries 1. Snatch with Clean Grip 2. Snatch and Clean without Spreading the Feet 3. Snatch & Clean with High Hip Start Position 4. Back Squat if Emphasis is on Front Squat 5. Front Squat if Emphasis is on Back Squat 6. Muscle Snatch Without Press-out 7. Snatch and Clean Pull to Knees 8. Snatch and clean Pull to Mid-Thigh or Midsection The lifter should treat variations the same as non-variations as far as programming is concerned, but they should not include the variations in calculating the average monthly level of intensity, neither should partials or anything outside the primaries. The pulls would be an exception where the only measurement is from the platform to the knees; therefore, the style of pull should have no bearing on the time-in-motion to the knees. The lifter should never set or train the variations to set PRs in those lifts, but they can train them at the same volume level as the full movements. Squat variations, be it the front or back squat, should always be trained at a lesser relative level of intensity than the regular squat. G. Scheduling of Auxiliary Exercises 1. Hyperextensions 2. Weighted Dips 3. Lateral Raises 4. Stiff Leg DL 5. Good Mornings 6. Other non-bilateral motions 7. Press 8. Overhead Snatch Squats H. Outline the Training Phase Programming 1. Average Monthly Intensity Date Snatch C&J Front Sq Back Sq Cl Pull Sn Pull 6 Months Out 75% 75% 95% of C&J 100% of C&J 90% of C&J 90% of snatch 5 Months Out 75% 80% 100% of C&J 100% of C&J 90% of C&J 90% of snatch 4 Months Out 80% 80% 105% of C&J 105% of C&J 95% of C&J 90% of snatch 3 Months Out 80% 80% 105% of C&J 105% of C&J 95% of C&J 95% of snatch 2 Months Out 80% 80% 105% of C&J 105% of C&J 100% of C&J 105% of snatch 1 Month Out 80% 80% 105% of C&J 105% of C&J 105% of C&J 110% of snatch The above spreadsheet is a guide whereby the percentages (closest incremental amount to those percentages) can be used to determine the weights that will be handled each month in the primaries, based on the lifter's current PRs in the snatch and clean & jerk. With six months of training before the peaking phase begins, the top-end weights should gradually build up to the top-end weights desired to start the peaking (preparation) phase. The beginning lifter will need to have practice meets scheduled at the end of each month so they can establish PRs in the snatch and clean & jerk. Increases will not affect the monthly desired percentages, but those increases will affect the top-ending weights associated with those percentages. Elite lifters will probably not see that much difference in those top-ending weights but should schedule end of month practice meets. 2. Scheduled Lifts Per Session Date Snatch C&J Front Sq Back Sq Cl Pull Sn Pull 26 Weeks Out Day 1 Session 1 Auxiliary Exercises (Block One) Session 2 x x x Day 2 Session 1 x x x Day 3 Session 1 x x x x Session 2 x x x Day 4 Session 1 Auxiliary Exercises (Block Two) Session 2 x x x Day 5 x x x x Day 6 Session 1 Auxiliary Exercises (Block Three) Session 2 x x x When the programmer has determined the lifts to be scheduled and the number of sessions the next step is to determine the amount of sets and reps and the top-ending weights, and derive the average level of intensity. The lifter can add auxiliaries to the end of each session. 3. Scheduled Sets of Reps with Top-end Weights The following

programming will be for a lifter with a 150k snatch, 187k clean & jerk in 2.2 seconds and 200k front squat in one-second. Date Snatch C&J Front Sq Back Sq Cl Pull Sn Pull 26 Weeks Out Day 1 Session 1 Auxiliary Exercises (Block One) Session 2 115k 3x3 145k 3x2 140k 5x3 Day 2 Session 1 115 4x2 160k 5x2 175k 4x2 Day 3 Session 1 100k 5x2 125k 150k 5x2 135k 4x3 Session 2 120k 5x2 150k 3x1 170k 4x2 Day 4 Session 1 Auxiliary Exercises (Block Two) Session 2 115k 5x1 175k 3x3 175k 5x2 Day 5 120k 4x2 150k 3x1 180k 5x3 140k 4x2 Day 6 Session 1 Auxiliary Exercises (Block Three) Session 2 115k 4x2 145k 3x2 165k 5x4 The above table is a general representation of the programming process. The lifter should establish incremental increases, and the lifter will have to decide on how to execute those. Incremental increases are those sets executed from the empty bar to the top-end weight or last warmup in a competition. The incremental increases will depend on the level the lifter has attained in the sport. As a rule of thumb, the incremental increases should be about 2k to 3k for a youth lifter age 12 and under with totals less than 100k. Lifters with totals of between 100k and 200k should use 3k to 5k increases and for lifters, with totals over 200k the incremental can be up to 10k but should taper down to 5k when the weight goes over 80%. The lighter incremental warmups might even be 20k for the top lifters and taper off to 10k after 80% of PR is reached. The incremental increases from the bar to about 40% or even less, (depending on the weight class of the lifter), are composed of various auxiliary style exercises, such as the muscle snatch, snatch high pull, behind neck press, snatch balance, power snatch or clean and so on. The lifter should cease these types of exercises once satisfied they warmed up enough to begin increasing the weight for the snatch or clean & jerk. The incremental warmups and increases should become a well-ingrained regimen that doesn't ever change in the gym or competition, so those actions can be ingrained with exacting precision and velocity once the weight has enough mass to begin using maximal speed. Taking too significant a jump in those incremental increases can cause the muscles to be jarred, and the lifter can disrupt the warming up process and the ingraining of the mechanics. There should always be a smooth transition between the first incremental loading and top-end weight or last warmup in a meet. The incremental increases need to be habitual, so those increases do not have to be written down in the programming of the lifter every time they train the snatch or clean & jerk, as this would be a waste of time. The lifter only needs to record the top-end weights. Note: See Chapter 14 for the list of Incremental Increases Auxiliary Blocks Auxiliary exercises should be blocked out from the primaries as a separate and distinct training methodology. Auxiliary exercises contain no impact forces or bidirectional reaction motions. Auxiliary Block One Exercise Sets and Reps Hyperextensions 5 x 10 Lateral Flies 5 x 10 Good Mornings 5 x 5 Auxiliary Block Two Exercise Sets and Reps Stiff Leg DL 5 x 5 Weighted Dips 5 x 5 Press 5 x 5 Auxiliary Block Three Exercise Sets and Reps Lateral Raises 5 x 10 Overhead Snatch Squat 5 x 10 Weighted Dips 5 x 5 These blocks can be inserted at any time or as needed, and the exercises can be mixed up in whatever method is best for the lifter. There are many more of these types of exercises, and as long as they do not contain any impact forces, the lifter can accept them as exercises. Partial Lifts Partial lifts should not be trained the same as the lifter trains the full movements. The lifter should consider the partials auxiliary exercises, and they should program the appropriate amount of weight and frequency for those type of lifts. The only methodology for the partials I would follow would be to train the partials at a lower monthly level of intensity than the full movements. I would also make sure the volume and frequency are less than the full movements. Like the squats and pulls the lifter should not train the partials to set PRs, so the partials don't become an event equal to the full movements. The primary goal of partials is introducing some variation into the training, keeping the lifter from getting stale and aiding the lifter's mobility. If the lifter does not require those things, then there is no need to do partials. Date Snatch C&J Front Sq Back Sq Cl Pull Sn Pull 26 Weeks Out Day 1 Session 1 Auxiliary Exercises (Block One) Session 2 Box 110k 3x3 145k 3x2 140k 5x3 Day 2 Session 1 115 4x2 160k 5x2 175k 4x2 Day 3 Session 1 100k 5x2 125k 4x2 150k 5x2 135k 4x3 Session 2 120k 5x2 Hang 140k 3x1 170k 4x2 Day 4 Session 1 Auxiliary Exercises (Block Two) Session 2 Boxes 115k 5x1 175k 3x3 175k 5x2 Day 5 120k 4x2 150k 3x1 180k 5x3 140k 4x2 Day 6 Session 1 Auxiliary Exercises (Block Three) Session 2 115k 4x2 145k 3x2 165k 5x4 The lifter should record doing snatches from boxes, and the height of the bar placement as below or above the knee. The lifter should note the type of jerk from the boxes as; push press, squat jerk, full squat jerk or jerk. The lifter should record the hang snatch or clean as below or above the knee. The lifter should record the pulls to mid-thigh, to the midsection or full extension. Pulls to the knees would not be necessary since the weight would need to

be decelerated before it reached the knees, and cause a different motion than when the bar is lifted to mid-thigh, the midsection or full extension. The transitional phase as the bar passes the knees is critical for creating a more effective 1st pull and the change in acceleration is more critical than the transitional phase. Velocity will always be more important than a nuanced motion. The lifter's technique is only a vessel that can be used to maintain specific times-in-motion regardless of the weight on the bar. 4. Post Workout Data Input of Times-in-motion Date Snatch C&J Front Sq Back Sq Cl Pull Sn Pull 26 Weeks Out Day 1 Session 1 Auxiliary Exercises (Block One) Session 2 Box 110k 3x3 145k 3x2 2.0 140k 5x3 .7 Day 2 Session 1 115 4x2 2.0 160k 5x2 .77 175k 4x2 .30 Day 3 Session 1 100k 5x2 2.1 Jerks 125k 4x2 150k 5x2 .6 135k 4x3 .27 Session 2 120k 5x2 2.2 Hang 140k 3x1 170k 4x2 .8 Day 4 Session 1 Auxiliary Exercises (Block Two) Session 2 Boxes 115k 5x1 175k 3x3 1.0 175k 5x2 .30 Day 5 120k 4x2 2.17 150k 3x1 1.9 180k 5x3 1.0 140k 4x2 .30 Day 6 Session 1 Auxiliary Exercises (Block Three) Session 2 115k 4x2 2.07 145k 3x2 1.9 165k 5x4 .9 At the end of each session, the coach and lifter should analyze the video and the times-in-motion logged into the spreadsheet. These will be averaged at the end of the month or as necessary to make sure those specific times, related to the individual lifter, are being maintained. The lifter should adjust the program when they don't maintain the times. Times-In-Motion are more important than the amount of weight. Appendix C Samples of Programming and Spreadsheets The following examples are for general purposes to help show some relationships between the times-in-motion and the average monthly intensity. Each lifter will have to determine their intensity levels along with the non-decelerated ascension rates in the squats and pulls and overall times-in-motion of the snatch and clean & jerk. Some lifters can squat more weight faster than other lifters, all other things being equal. In some cases, these differences in velocity production can be offset by doing less weight more quickly. Moving slower or decelerating is not an option. These workouts are hypothetical but are close to an accurate picture as I can get to explain the relationship between the primary lifts and their particular times-in-motion. The bell curve shows where most of the training occurs for several months with lifters of different levels of proficiency. The following examples are general. There is no way I know of that will program a lifter’s training based solely on numbers, reps, and sets and the order of lifts, where the lifts are not being timed and used to verify the program is effective. Training has to have certain limitations placed on it, or the athlete will undoubtedly begin to overreach, overload or overtrain. Even with constraints, overreaching can occur, but when there are certain fail-safe elements built into the system, the lifter can minimize overreaching. The numbers, sets, and reps are adjustable within a program. The times-in-motion cannot be adjusted; they precisely are what they are for each lift. When those times start to show signs of slowing down (deceleration), then adjustments must be made to the pre-written program or overloading will ensue. However, knowing is far better than not knowing, and data collection can reveal a remarkable amount of information about the lifter and the programming. Exhibit 36 Exhibit 36 is illustrative of how the incremental increases are spread out concerning the percentage amount of training those increases receive over extended periods for a lifter with 100k to 450k totals. Most of the practice will occur in the gray area. When the lifter bases the training on an average monthly intensity, it means there will be enough lifts between 70% and 90% to keep the snatch and clean & jerk honed-in, but hopefully to reduce the overloading when the monthly average is around 80%. Too many lifts at 90% or more, during the month, can start to wear down the lifter and eventually force them into an automatic reduction in intensity where 90% of PR can become 100% efforts. The following examples leave out the auxiliary exercises because those exercises should be more conditioning based and not part of the primary lifts programming, with a few exceptions, such as the snatch from the boxes and jerks out of the rack. The lifter should temper the auxiliary exercises so they do not become separate events that will compete with the competition lifts energy stores. The overall times-in-motion in the snatch and clean & jerk, as well as the ascension times in the squats, are crucial for beginners. They must ingrain those times, so they become accustomed to moving at those velocities regardless of the weight on the bar, except for the very light incremental increases. Overall times of 2.5-seconds or faster in the snatch and clean and one-second in the squats need to become second nature where there is never any thought of grinding out of a lift or that they are even capable of grinding-out a lift. Programming and Spreadsheet Data Entry for a 100k Total Exhibit 17: Incremental Increases: Youth/Master - 100k total (45 and 55) Snatch 20 23 26 29 32 35 38 41 42 43 44 45 Clean & Jerk 20 24 28 32 36 39 43 46 49 52 54 55 Week One Day One Snatch32 x 10 x 1 Clean & Jerk37 x 5 x 2 *Back Squat:45 x 5 x 3 Various Auxiliary Exercises

Day Two Various Auxiliary Exercises Day Three Snatch38 x 5 x 2 Clean & Jerk43 x 5 x 2 Back Squat: 55 x 5 x 1 Various Auxiliary Exercises Day Four Snatch38 x 10 x 1 Clean & Jerk43 x 7 x 1 Snatch Pull: 100%45 x 3 x 3 Various Auxiliary Exercises *All squats are one-second for simplification The beginner should do more volume than intensity to ingrain those motions as precise as possible along with the velocity requirements in all the primary lifts. The sooner they become technically proficient, the sooner they can begin the rigors of training, but that type of training must be gradual not rushed. Monthly Report Schedule (Week One) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 32 37 45 + 30 @ 1.0 64 Day 2 Auxiliary Exercises Day 3 38 43 55 + 20 @ 1.0 64 Day 4 38 43 45 Ave. 36 (2.45) 80% 41 (2.37) 75% 64 Although the squats show sign of a 64k clean & jerk, the beginner needs to put more emphasis on their technical proficiency before pushing the snatch or clean & jerk toward PRs. The extra time taken will pay off in dividends later on in their development. Pushing too soon for PRs can create erratic lifting and other problems that might not ever be corrected. There can be more auxiliary exercises for the beginner in order to increase their mobility among all the various lifts and condition the muscular system for eventually handling heavier loads. The overall times-in-motion are indicators that the lifter is becoming more efficient in their mechanics of motion. Week Two Day One Snatch35 x 10 x 1 Clean & Jerk37 x 5 x 2 *Back Squat:37 x 5 x 5 Various Auxiliary Exercises Day Two Various Auxiliary Exercises Day Three Snatch35 x 5 x 2 Clean & Jerk43 x 7 x 1 Back Squat: 49 x 5 x 2 Various Auxiliary Exercises Day Four Snatch35 x 5 x 1 Clean & Jerk49 x 5 x 1 Clean Pull: 100%55 x 5 x 3 Various Auxiliary Exercises Monthly Report Schedule (Weeks 1 & 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 32 37 45 + 30 @ 1.0 64 Day 2 Auxiliary Exercises Day 3 38 43 55 + 20 @ 1.0 64 Day 4 38 43 45 Week 2 Day 1 35 37 37 + 40 @ 1.0 = 66 Day 2 Auxiliary Exercises Day 3 35 43 49 + 25 @ 1.0 = 63 Day 4 35 49 55 Average 35 (2.33) 78% 42 (2.40) 76% 64 Week Three Day One Snatch35 x 7 x 1 Clean & Jerk46 x 5 x 2 *Back Squat:32 x 5 x 4 Various Auxiliary Exercises Day Two Various Auxiliary Exercises Day Three Snatch35 x 5 x 2 Clean & Jerk46 x 4 x 1 Back Squat: 52 x 5 Various Auxiliary Exercises Day Four Snatch32 x 5 x 1 Clean & Jerk49 x 5 x 1 Snatch Pull: 100%45 x 5 x 3 Various Auxiliary Exercises Monthly Report Schedule (Weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 32 37 45 + 30 @ 1.0 64 Day 2 Auxiliary Exercises Day 3 38 43 55 + 20 @ 1.0 64 Day 4 38 43 45 Week 2 Day 1 35 37 37 + 40 @ 1.0 = 66 Day 2 Auxiliary Exercises Day 3 35 43 49 + 25 @ 1.0 = 63 Day 4 42 49 55 Week 3 Day 1 35 46 40 + 30 @ 1.0 = 60 Day 2 Auxiliary Exercises Day 3 35 46 52 + 20 @ 1.0 = 62 Day 4 32 49 45 Ave. 35 (2.37) 80% 44 (2.43) 79% 63 Week Four Day One Snatch32 x 7 x 1 Clean & Jerk46 x 5 x 2 *Back Squat:34 x 7 x 4 Various Auxiliary Exercises Day Two Various Auxiliary Exercises Day Three Snatch35 x 5 x 2 Clean & Jerk46 x 4 x 1 Back Squat: 40 x 5 x 5 Various Auxiliary Exercises Day Four Snatch32 x 7 x 1 Clean & Jerk49 x 5 x 1 Clean Pull: 100%55 x 5 x 3 Various Auxiliary Exercises Monthly Report Schedule (Weeks 1 thru 4) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 32 37 45 + 30 @ 1.0 64 Day 2 Auxiliary Exercises Day 3 38 43 55 + 20 @ 1.0 64 Day 4 38 43 45 Week 2 Day 1 35 37 37 + 40 @ 1.0 = 66 Day 2 Auxiliary Exercises Day 3 35 43 49 + 25 @ 1.0 = 63 Day 4 35 49 55 Week 3 Day 1 35 46 40 + 30 @ 1.0 = 60 Day 2 Auxiliary Exercises Day 3 35 46 52 + 20 @ 1.0 = 62 Day 4 32 49 45 Week 4 Day 1 32 46 34 + 35 @ 1.0 = 59 Day 2 Day 3 35 46 40 + 30 @ 1.0 = 60 Day 4 32 49 45 Ave. 34 (2.43) 77% 45 (2.40) 81% 62 Programming and Spreadsheet Data Entry for a 150k Total Exhibit 18: Incremental Increases: Youth/Master - 150k total (67 and 83) Snatch 20 25 30 35 40 45 50 55 60 63 65 67 Clean & Jerk 20 30 40 45 50 55 60 65 70 75 79 83 Week One Day One Snatch55 x 5 x 1 Clean & Jerk65 x 3 x 1 *Back Squat: 70%58 x 5 x 3 Stiff Leg DL60 x 5 x 3 Day Two Snatch60 x 4 x 1 Clean & Jerk 70 x 2 x 1 Clean Pull: 100% 75 x 5 x 3 Good Mornings40 x 5 x 5 Day Three Snatch55 x 5 x 2 Back Squat: 90% 68 x 4 x 2 Hang Cleans50 x 5 x 3 Day Four Snatch60 x 3 x 1 Clean & Jerk75 x 1 Snatch Pull: 100%67 x 3 x 3 Push Press40 x 5 x 3 *All squats are executed in one-second for simplification. In this sample program, the coach or lifter needs to write down which lifts are scheduled, the order of the lifts and the number of sets and reps. During the session, the lifter or coach will video the lifts and later on write down the times-in-motion along with the actual amount of weight. The sets and reps are not that necessary for the monthly report, but the lifter can include them. The coach will have the original program that has the

sets and reps, and the lifter will have their log book for back up. Monthly Report Schedule (Week One) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 55 (2.5) 65 (2.3) 58 + 30 @ 1.0 76 Day 2 60 (2.7) 70 (2.5) 75 (.33) Day 3 55 (2.4) 68 + 20 @ 1.0 = 76 Day 4 60 (2.6) 75 (2.6) 67 (.33) The results are very good for week one. The overall times-in-motion are near the 2.5-seconds desired limit, and the squats were equivalent to the lifter's clean & jerk PR. The back squat is recorded in the following order; 1. Top-end Weight 2. Reps and sets Converted as Additional Weight 3. Time-in-motion Average of all Reps 4. Equivalent Clean & Jerk The pulls are only recorded from the platform to the knees. Week Two Day One Snatch45 x 7 x 2 Clean & Jerk55 x 5 x 2 Back Squat: 50%42 x 7 x 5 Snatch off Boxes45 x 5 x 1 Stiff Leg DL60 x 5 x 3 Day Two Snatch55 x 4 x 2 Clean & Jerk 65 x 4 x 1 Clean Pull: 80 x 5 x 2 Good Mornings40 x 5 x 5 Day Three Snatch55 x 5 x 1 Back Squat 100%83 x 2 x 2 Hang Cleans50 x 5 x 3 Day Four Snatch62 x 3 x 1 Clean & Jerk75 x 1 Snatch Pull: 103%69 x 3 x 3 Push Press40 x 5 x 3 Since the squats and pulls are assistance lifts to the snatch and clean & jerk those percentages of back squat and pulls should be based on the snatch and clean & jerk PRs. The lifter should stop thinking of the back squat in terms of a separate event where they must establish a 1RM PR to progress the competition lifts. Monthly Report Schedule (Weeks 1 & 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 55 (2.5) 65 (2.3) 58 + 30 @ 1.0 76 Day 2 60 (2.7) 70 (2.5) 75 (.33) Day 3 55 (2.4) 68 + 20 @ 1.0 = 76 Day 4 60 (2.6) 75 (2.6) 67 (.33) Week 2 Day 1 45 (2.1) 55 (2.0) 42 + 50 @ 1.0 = 79 Day 2 55 (2.4) 65 (2.3) 80 (.37) Day 3 55 (2.3) 83 + 10 @ 1.0 = 80 Day 4 62 (2.6) 75 (2.5) 69 (.33) Average 56 (2.45) 83% 68 (2.37) 90% 63 / 84% 78 78 (.35) 68 (.33) The averages indicate two things; 1. The average intensity is too high in both the snatch and clean & jerk, and 2. The lifter is making progress. The latter conclusion would seem to be correct since the times-in-motion are staying in line at 2.5 seconds or less and the squats are showing a potential clean & jerk of 78k. It is still better to back off the snatch and clean & jerk and get those lifts more in line at around 80%. The lifter can place more energy into the back squat than the snatch or clean & jerk over the next two weeks and still maintaining the one-second ascension time. The lifter will get more separation between the back squat and the clean & jerk, assuring even greater success when the programmer schedules PRs for the snatch and clean & jerk, in training. Week Three Day One Snatch45 x 3 x 3 Clean & Jerk50 x 3 x 2 Back Squat: 95%80 x 3 x 2 Press 50%42 x 4 x 2 Stiff Leg DL60 x 5 x 5 Day Two Snatch50 x 5 x 2 Clean & Jerk 55 x 3 x 1 Clean Pull: 115% 86 x 4 x 3 Day Three Snatch50 x 5 x 1 Back Squat 104%86 x 1 x 3 Hang Cleans50 x 5 x 3 Push Press45 x 5 x 3 Day Four Snatch55 x 3 x 1 Clean & Jerk60 x 3 x 1 Snatch Pull: 95%64 x 4 x 3 Good Mornings40 x 5 x 5 Monthly Report Schedule (Weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 55 (2.5) 65 (2.3) 58 + 30 @ 1.0 76 Day 2 60 (2.7) 70 (2.5) 75 (.33) Day 3 55 (2.4) 68 + 20 @ 1.0 = 76 Day 4 60 (2.6) 75 (2.6) 67 (.33) Week 2 Day 1 45 (2.1) 55 (2.0) 42 + 50 @ 1.0 = 79 Day 2 55 (2.4) 65 (2.3) 80 (.37) Day 3 55 (2.3) 83 + 10 @ 1.0 = 80 Day 4 62 (2.6) 75 (2.5) 69 (.33) Week 3 Day 1 45 (2.1) 50 (2.0) 80 + 15 @ 1.0 = 82 Day 2 50 (2.3) 55 (2.1) 86 (.37) Day 3 50 (2.3) 86 + 10 @ 1.0) = 83 Day 4 55 (2.3) 60 (2.4) 64 (.33) Ave. 54 (2.37) 81% 63 (2.3) 84% After the 3rd week, the average intensity was brought down to 81% for the snatch and 84% for the clean & jerk. These are more manageable percentages as far as allowing the squats and pulls to continue to progress. Week Four Day One Snatch50 x 5 x 1 Clean & Jerk60 x 3 x 1 *Back Squat: 90%75 x 4 x 2 Stiff Leg DL60 x 5 x 3 Day Two Snatch55 x 4 x 1 Clean & Jerk 65 x 2 x 1 Clean Pull: 100% 75 x 5 x 3 Good Mornings40 x 5 x 5 Day Three Snatch45 x 5 x 3 Back Squat: 100% 83 x 1 x 4 Hang Cleans50 x 5 x 3 Day Four Snatch63 x 1 Clean & Jerk75 x 1 Snatch Pull: 100%67 x 5 x 3 Monthly Report Schedule (Weeks 1 thru 4) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 55 (2.5) 65 (2.3) 58 + 30 @ 1.0 76 Day 2 60 (2.7) 70 (2.5) 75 (.33) Day 3 55 (2.4) 68 + 20 @ 1.0 = 76 Day 4 60 (2.6) 75 (2.6) 67 (.33) Week 2 Day 1 45 (2.1) 55 (2.0) 42 + 50 @ 1.0 = 79 Day 2 55 (2.4) 65 (2.3) 80 (.37) Day 3 55 (2.3) 83 + 10 @ 1.0 = 80 Day 4 62 (2.6) 75 (2.5) 69 (.33) Average 56 / 83% 68 / 90% 63 / 84% 78 78 (.35) 68 (.33) Week 3 Day 1 45 (2.1) 50 (2.0) 80 + 15 @ 1.0 = 82 Day 2 50 (2.3) 55 (2.1) 86 (.37) Day 3 50 (2.3) 86 + 10 @ 1.0) = 83 Day 4 55 (2.3) 60 (2.4) 64 (.33) Ave. 54 / 81% 63 / 84% Week 4 Day 1 50 (2.3) 60 (2.4) 75 + 20 @ 1.0 = 82 Day 2 55 (2.4) 65 (2.5) 75 (.33) Day 3 45 (2.1) 83 + 15 @ 1.0 = 84 Day 4 63 (2.4) 75 (2.5) 72 / 96% 80 67 (.33) Ave. 54 (2.37) 81% 64 / (2.33) 85% The goal for the next month might be to

do the same average weight in both the snatch and clean & jerk and try to get the overall times-in-motion faster on average. The clean & jerk needs to be reduced in intensity to get closer to the 80% where the lifter can put more energy/volume/intensity into the squats. The squats appear to be increasing and show an average clean & jerk equivalent of 80k. The last workout the lifter went up to their PRs but did not attempt to break them but keep the overall time-in-motion at 2.5 seconds or faster. As long as the squat is increasing in weight and the time-in-motion is one-second or quicker, at least on average, then that is a good indicator that the competition lifts will also be improving, even if the lifter doesn't fully realize an increase until later on or in an upcoming competition. Without knowing the times-in-motion, the lifter is at a complete loss as to what all those numbers and sets of reps represent. The lifter is merely going to the gym to get in a workout and if that creates a pathway to progress the regimen is repeated without actually knowing it is working to the point where the lifter will reach their full potential. Programming and Spreadsheet Data Entry for a 200k Total Exhibit 19: Incremental Increases: Open/Master - 200k total (85 and 115) Snatch 20 30 40 45 50 55 60 65 70 75 80 85 Clean & Jerk 20 40 60 70 80 85 90 95 100 105 110 115 Week One Day 1 Snatch60 x 4 x 2, 65 x 4 x 1 Clean & Jerk90 x 3 x 1, 95 x 3 x 1 Back Squat 100%115 x 4 x 2 2 Random Auxiliary Exercises Day 2 Snatch65 x 5 x 1, 70 x 1 Clean & Jerk95 x 3 x 1, 100 x 1 Clean Pull 100%115 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch70 x 5 x 1, 75 x 2 x 1 Clean Jerk100 x 3 x 1 Back Squat 110%125 x 2 2 Random Auxiliary Exercises Day 4 Snatch65 x 3 x 2, 70 x 3 x 2 Clean & Jerk95 x 4 x 1 Snatch Pull 100%85 x 5 x 3 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 65 (2.3) 95 (2.2) 115 + 20 @ 1.0 = 116 Day 2 70 (2.33) 100 (2.33) 115 (.33) Day 3 75 (2.4) 100 (2.3) 125 + 5 @ 1.0 = 112 Day 4 70 (2.27) 95 (2.27) 85 (.33) Ave. 70 / 82% (2.33) 98 /85% (2.27) 120 / 104% 114 This week the clean & jerk weekly average is a little high at 85% and needs to be adjusted back to around 80%. The back squat is in equilibrium with the clean & jerk. Pulls are in line with the times-in-motion to the knees. Week Two Day 1 Snatch55 x 5 x 3, 60 x 5 x 1 Clean & Jerk80 x 5 x 2 Back Squat 90%105 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch60 x 5 x 2, 65 x 1 Clean & Jerk85 x 3 x 2, 90 x 1 Clean Pull 100%115 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch70 x 5 x 1, 75 x 2 x 1 Clean Jerk90 x 3 x 1 Back Squat 110%125 x 4 2 Random Auxiliary Exercises Day 4 Snatch65 x 3 x 2, 70 x 3 x 2 Clean & Jerk95 x 4 x 1 Snatch Pull 100%85 x 3 x 3 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 65 (2.3) 95 (2.2) 115 + 20 @ 1.0 = 116 Day 2 70 (2.33) 100 (2.33) 115 (.33) Day 3 75 (2.4) 100 (2.3) 125 + 5 @ 1.0 = 112 Day 4 70 (2.27) 95 (2.27) 85 (.33) Week 2 Day 1 60 (2.2) 80 (2.0) 105 + 30 @ 1.0 = 116 Day 2 65 (2.27) 90 (2.1) 115 (.33) Day 3 75 (2.4) 90 (2.2) 125 + 15 @ 1.0 = 120 Day 4 70 (2.3) 95 (2.4) 85 (.37) Ave. 69 / 81% 93 / 81% 118 / 103% 116 The lifter was able to bring down the clean & jerk average from 85% to 81@. The lifter maintained the squats and pulls in their intensity levels. Adapting to the intensity loading must come from consistent training where the times-in-motion are also consistent and at a velocity that will allow the lifter to continue to progress. The lifter cannot adapt to decelerated actions in any particular parts of the competitive lifts. The lifter must adapt to those laws of physics where mass and velocity come into play, and the lifter should make no vain attempts at trying to beat the laws of physics. If the above lifter’s overall times-in-motion were 3 seconds or slower this would be a reliable indicator that they are using that deceleration for the sole benefit of creating a significant number in the squats or pulls. The lifter will never achieve their full potential when they constantly us deceleration when doing the squats and pulls. The lifter will usually remain in a state of stagnation where progress becomes tedious and difficult if the lifter can make any progress at all. All the primary lifts must be linked by repeated precision and specific times-in-motion. Week Three Day 1 Snatch65 x 5 x 2, 70 x 1 Clean & Jerk90 x 3 x 2 Back Squat 85%100 x 5 x 5 2 Random Auxiliary Exercises Day 2 Snatch60 x 5 x 1, 65 x 1 Clean & Jerk85 x 3 x 1, 90 x 1 Clean Pull 105%120 x 4 x 1 2 Random Auxiliary Exercises Day 3 Snatch70 x 4 x 1, 75 x 1 Clean Jerk95 x 3 x 1 Back Squat 113%130 x 3 2 Random Auxiliary Exercises Day 4 Snatch65 x 3 x 1, 70 x 2 Clean & Jerk100 x 1 Snatch Pull 100%85 x 3 x 3 Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 65 (2.30) 95 (2.20) 115 + 20 @ 1.0 = 116 Day 2 70 (2.33) 100 (2.33) 115 (.33) Day 3 75 (2.40) 100 (2.30) 125 + 5 @ 1.0 = 112 Day 4 70 (2.27) 95 (2.27) 85 (.33) Week 2 Day 1 60 (2.20) 80 (2.00) 105 + 30 @ 1.0 = 116 Day 2 65 (2.27) 90 (2.10)

115 (.33) Day 3 75 (2.40) 90 (2.20) 125 + 15 @ 1.0 = 120 Day 4 70 (2.30) 95 (2.40) 85 (.37) Week 3 Day 1 70 (2.27) 90 (2.13) 100 + 40 @ 1.0 = 120 Day 2 65 (2.33) 90 (2.17) 120 (.37) Day 3 75 (2.40) 95 (2.30) 130 + 10 @ 1.0 = 120 Day 4 70 (2.30) 100 (2.33) 85 (.33) Ave. 69 (2.30) 81% 93 (2.33) 81% 117 / 102% 117 Week Four Day 1 Snatch60 x 5 x 1, 65x 1 Clean & Jerk85 x 5 x 2 Back Squat 100%115 x 5 x 2 2 Random Auxiliary Exercises Day 2 Snatch60 x 5 x 1, 65 x 1 Clean & Jerk85 x 3 x 1, 90 x 1 Clean Pull 100%115 x 4 x 1 2 Random Auxiliary Exercises Day 3 Snatch70 x 4 x 1, 75 x 1 Clean Jerk95 x 3 x 1 Back Squat 113%130 x 4 2 Random Auxiliary Exercises Day 4 Snatch80 x 1 Clean & Jerk105 x 1 Snatch Pull 100%85 x 3 x 3 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 65 (2.30) 95 (2.20) 115 + 20 @ 1.0 = 116 Day 2 70 (2.33) 100 (2.33) 115 (.33) Day 3 75 (2.40) 100 (2.30) 125 + 5 @ 1.0 = 112 Day 4 70 (2.27) 95 (2.27) 85 (.33) Week 2 Day 1 60 (2.20) 80 (2.00) 105 + 30 @ 1.0 = 116 Day 2 65 (2.27) 90 (2.10) 115 (.33) Day 3 75 (2.40) 90 (2.20) 125 + 15 @ 1.0 = 120 Day 4 70 (2.30) 95 (2.40) 85 (.37) Week 3 Day 1 70 (2.27) 90 (2.13) 100 + 40 @ 1.0 = 120 Day 2 65 (2.33) 90 (2.17) 120 (.37) Day 3 75 (2.40) 95 (2.30) 130 + 10 @ 1.0 = 120 Day 4 70 (2.30) 100 (2.33) 85 (.33) Week 4 Day 1 65 (2.27) 85 (2.17) 115 + 25 @ 1.0 = 120 Day 2 65 (2.30) 90 (2.20) 115 (.33) Day 3 75 (2.37) 95 (2.23) 130 + 15 @ 1.0 = 125 Day 4 80 (2.47) 115 (2.40) 85 (.37) Ave. 70 / 82% 94 / 82% 118 / 103% 118 Programming and Spreadsheet Data Entry for a 250k Total Exhibit 20: Incremental Increases: Open/Master 250k total (110 and 140) Snatch 20 30 40 50 60 70 80 90 95 100 105 110 Clean & Jerk 20 50 70 90 100 110 115 120 125 130 135 140 Week One Day 1 Snatch90 x 4 x 2, 95 x 2 Clean & Jerk115 x 3 x 2, 120 x 1 Back Squat 100%140 x 4 x 2 2 Random Auxiliary Exercises Day 2 Snatch85 x 5 x 1, 90 x 1 Clean & Jerk115 x 3 x 1, 120 x 1 Clean Pull 100%140 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch80 x 5 x 1, 85 x 2 x 1 Clean Jerk110 x 3 x 1 Back Squat 100%140 x 5 2 Random Auxiliary Exercises Day 4 Snatch90 x 3 x 2, 95 x 3 x 2 Clean & Jerk120 x 4 x 1 Snatch Pull 100%110 x 5 x 3 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 95 (2.30) 120 (2.33) 140 + 20 @ 1.0 = 138 Day 2 90 (2.23) 120 (2.37) 140 (.37) Day 3 85 (2.20) 110 (2.10) 140 + 20 @ 1.0 = 138 Day 4 95 (2.33) 120 (2.30) 110 (.33) Ave. 91 (2.27) 83% 118 (2.27) 84% 140 / 100% 138 The snatch and clean & jerk need to be reduced down to 80% so the back squat and equivalent clean & jerk can increase or at least be brought back into line with the meet PR clean & jerk. Week Two Day 1 Snatch85 x 4 x 2, 90 x 2 Clean & Jerk110 x 3 x 2, 115 x 1 Back Squat 100%140 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch80 x 5 x 1, 85 x 3 x 1 Clean & Jerk110 x 3 x 1, 115 x 2 Clean Pull 105%147 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch80 x 5 x 1, 85 x 2 x 1 Clean Jerk110 x 3 x 1 Back Squat 105%147 x 5 2 Random Auxiliary Exercises Day 4 Snatch90 x 3 x 2, 95 x 3 x 2 Clean & Jerk120 x 4 x 1 Snatch Pull 100%110 x 4 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 95 (2.30) 120 (2.33) 140 + 20 @ 1.0 = 138 Day 2 90 (2.23) 120 (2.37) 140 (.37) Day 3 85 (2.20) 110 (2.10) 140 + 20 @ 1.0 = 138 Day 4 95 (2.33) 120 (2.30) 110 (.33) Week 2 Day 1 90 (2.23) 115 (2.27) 140 + 30 @ 1.0 = 146 Day 2 85 (2.23) 115 (2.33) 147 (.40) Day 3 85 (2.30) 110 (2.17) 147 + 20 @ 1.0 = 144 Day 4 95 (2.37) 120 (2.40) 110 (.33) Ave. 90 (2.27) 82% 116 (2.27) 83% 142 / 103% 142 The average intensity came down, and the equivalent clean & jerk increased over the lifter's meet PR of 140k. The clean pull went down as far as the speed to the knees was concerned. The only adjustment would be to lower the weight and get the speed (time-in-motion) back to 0.33-seconds or faster. Week Three Day 1 Snatch80 x 4 x 2, 85 x 1 Clean & Jerk105 x 2 x 2, 110 x 1 Back Squat 90%125 x 5 x 5 2 Random Auxiliary Exercises Day 2 Snatch75 x 5 x 1, 80 x 3 x 1 Clean & Jerk110 x 3 x 1, 115 x 2 Clean Pull 95%133 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch80 x 5 x 1, 85 x 2 x 1 Clean Jerk110 x 3 x 1 Back Squat 110%154 x 3 2 Random Auxiliary Exercises Day 4 Snatch90 x 3 x 2, 95 x 3 x 2 Clean & Jerk120 x 4 x 1 Snatch Pull 100%110 x 4 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 95 (2.30) 120 (2.33) 140 + 20 @ 1.0 = 138 Day 2 90 (2.23) 120 (2.37) 140 (.37) Day 3 85 (2.20) 110 (2.10) 140 + 20 @ 1.0 = 138 Day 4 95 (2.33) 120 (2.30) 110 (.33) Week 2 Day 1 90 (2.23) 115 (2.27) 147 + 20 @ 1.0 = 144 Day 2 85 (2.23) 115 (2.33) 147 (.40) Day 3 85 (2.30) 110 (2.17) 147 + 20 @ 1.0 = 144 Day 4 95 (2.37) 120

(2.40) 110 (.33) Week 3 Day 1 85 (2.23) 110 (2.13) 125 + 40 @ 1.0 = 142 Day 2 80 (2.17) 115 (2.27) 133 (.30) Day 3 85 (2.23) 110 (2.20) 154 + 10 @ 1.0 = 141 Day 4 95 (2.33) 120 (2.43) 110 (.33) Ave. 89 (2.27) 81% 115 (2.27) 82% Week Four Day 1 Snatch80 x 4 x 2, 85 x 1 Clean & Jerk105 x 2 x 2, 110 x 1 Back Squat 90%125 x 5 x 5 2 Random Auxiliary Exercises Day 2 Snatch75 x 5 x 1, 80 x 3 x 1 Clean & Jerk110 x 3 x 1, 115 x 2 Clean Pull 95%133 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch80 x 5 x 1, 85 x 2 x 1 Clean Jerk110 x 3 x 1 Back Squat 110%154 x 3 2 Random Auxiliary Exercises Day 4 Snatch90 x 3 x 2, 95 x 3 x 2 Clean & Jerk120 x 4 x 1 Snatch Pull 100%110 x 4 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 95 (2.30) 120 (2.33) 140 + 20 @ 1.0 = 138 Day 2 90 (2.23) 120 (2.37) 140 (.37) Day 3 85 (2.20) 110 (2.10) 140 + 20 @ 1.0 = 138 Day 4 95 (2.33) 120 (2.30) 110 (.33) Week 2 Day 1 90 (2.23) 115 (2.27) 147 + 20 @ 1.0 = 144 Day 2 85 (2.23) 115 (2.33) 147 (.40) Day 3 85 (2.30) 110 (2.17) 147 + 20 @ 1.0 = 144 Day 4 95 (2.37) 120 (2.40) 110 (.33) Week 3 Day 1 85 (2.23) 110 (2.13) 125 + 40 @ 1.0 = 142 Day 2 80 (2.17) 115 (2.27) 133 (.30) Day 3 85 (2.23) 110 (2.20) 154 + 10 @ 1.0 = 141 Day 4 95 (2.33) 120 (2.43) 110 (.33) Week 4 Day 1 85 (2.20) 110 (2.13) 125 + 40 @ 1.0 = 142 Day 2 80 (2.13) 115 (2.23) 133 (.33) Day 3 85 (2.23) 110 (2.17) 154 + 10 @ 1.0 = 141 Day 4 95 (2.30) 120 (2.33) 110 (.33) Ave. 110 (2.27) 80% 115 (2.27) 82% 123 / 88% 141 In the above example, the average monthly intensity was at about 80% in both lifts. The average squat was low and is why the equivalent clean & jerk was just 141k. This equivalent should average at least 5k more than the lifter's meet PR. The snatch and clean & jerk can stay about the same during the next month, but more emphasis should be placed into the squats increasing in weight but keeping the ascension time at one-second or faster or where there is no deceleration. Programming and Spreadsheet Data Entry for a 300k Total Exhibit 21: Incremental Increases: Open/Master 300k total (135 and 165) Snatch 20 40 60 80 100 105 110 115 120 125 130 135 Clean & Jerk 20 60 80 100 110 120 130 140 150 155 160 165 Week One Day 1 Snatch115 x 4 x 2, 120 x 2 Clean & Jerk140 x 3 x 2, 145 x 1 Back Squat 109%180 x 3 x 2 2 Random Auxiliary Exercises Day 2 Snatch110 x 5 x 1, 105 x 1 Clean & Jerk135 x 3 x 1, 140 x 1 Clean Pull 100%165 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch115 x 5 x 1, 120 x 2 x 1 Clean Jerk140 x 3 x 1 Back Squat 109%180 x 4 x 2 2 Random Auxiliary Exercises Day 4 Snatch120 x 3 x 1, 125 x 3 x 1 Clean & Jerk145 x 4 x 1 Snatch Pull 100%135 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 120 145 180 + 15 @ 1.0 = 168 Day 2 105 140 165 (.37) Day 3 120 140 180 + 20 @ 1.0 = 172 Day 4 125 145 135 (.33) Ave. 118 (2.27) 87% 143 (2.33) 86% 180 / 109% 170 At some point between a 250k total and 300k total, the percentages of 80% will gradually move up to around 85%. In the above instance, these percentages are a bit out of line, and the lifter should adjust them in the following week. The squat is in great shape showing a 5k difference between the actual meet PR and Equivalent clean & jerk. Week Two Day 1 Snatch110 x 4 x 2, 115 x 2 Clean & Jerk135 x 3 x 2, 140 x 1 Back Squat 112%185 x 2 x 2 2 Random Auxiliary Exercises Day 2 Snatch100 x 5 x 1, 105 x 1 Clean & Jerk130 x 3 x 1, 135 x 1 Clean Pull 100%175 x 3 x 2 2 Random Auxiliary Exercises Day 3 Snatch110 x 5 x 1, 115 x 2 x 1 Clean Jerk140 x 3 x 1 Back Squat 115%190 x 4 2 Random Auxiliary Exercises Day 4 Snatch115 x 3 x 1, 120 x 3 x 1 Clean & Jerk140 x 4 x 1 Snatch Pull 100%140 x 3 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 120 145 180 + 15 @ 1.0 = 168 Day 2 105 140 165 Day 3 120 140 180 + 20 @ 1.0 = 172 Day 4 125 145 135 Week 2 Day 1 115 140 185 + 10 @ 1.0 = 168 Day 2 105 135 175 Day 3 115 140 190 + 15 @ 1.0 = 176 Day 4 120 140 140 Ave. 116 (2.33) 86% 140 (2.30) 85% 184 / 112% 171 Squats continue to improve, and the snatch and clean & jerk average intensities have been brought back in line at around 85%. Week Three Day 1 Snatch110 x 5 x 1 Clean & Jerk125 x 3 x 2, 130 x 1 Back Squat 112%185 x 4 x 2 2 Random Auxiliary Exercises Day 2 Snatch90 x 5 x 1, 95 x 1 Clean & Jerk130 x 3 x 1, 135 x 1 Clean Pull 100%165 x 3 x 2 2 Random Auxiliary Exercises Day 3 Snatch110 x 5 x 1, 115 x 2 x 1 Clean Jerk140 x 3 x 1 Back Squat 115%190 x 3 x 3 2 Random Auxiliary Exercises Day 4 Snatch130 x 1 Clean & Jerk150 x 1 Snatch Pull 100%135 x 3 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 120 145 180 + 15 @ 1.0 = 168 Day 2 105 140 165 Day 3 120 140 180 +

20 @ 1.0 = 172 Day 4 125 145 135 Week 2 Day 1 115 140 185 + 10 @ 1.0 = 168 Day 2 105 135 175 Day 3 115 140 190 + 15 @ 1.0 = 176 Day 4 120 140 140 Week 3 Day 1 110 130 185 + 20 @ 1.0 = 176 Day 2 95 135 Day 3 115 140 190 + 20 @ 1.0 = 181 Day 4 130 150 Ave. 115 (2.30) 85% 140 (2.33) 85% 185 / 112% 174 Week Four Day 1 Snatch100 x 5 x 2, 4 x 1 Clean & Jerk120 x 3 x 2 Back Squat 95%160 x 5 x 5 2 Random Auxiliary Exercises Day 2 Snatch90 x 5 x 1, 95 x 1 Clean & Jerk130 x 3 x 1, 135 x 1 Clean Pull 100%165 x 3 x 2 2 Random Auxiliary Exercises Day 3 Snatch110 x 5 x 1, 115 x 2 x 1 Clean Jerk140 x 3 x 1 Back Squat 109%180 x 4 x 2 2 Random Auxiliary Exercises Day 4 Snatch130 x 1 Clean & Jerk160 x 1 Snatch Pull 100%135 x 3 x 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 120 145 180 + 15 @ 1.0 = 168 Day 2 105 140 165 Day 3 120 140 180 + 20 @ 1.0 = 172 Day 4 125 145 135 Week 2 Day 1 115 140 185 + 10 @ 1.0 = 168 Day 2 105 135 175 Day 3 115 140 190 + 15 @ 1.0 = 176 Day 4 120 140 140 Week 3 Day 1 110 130 185 + 20 @ 1.0 = 176 Day 2 95 135 Day 3 115 140 190 + 20 @ 1.0 = 181 Day 4 130 150 Week 4 Day 1 100 120 160 + 40 @ 1.0 172 Day 2 95 135 Day 3 115 140 180 + 20 @ 1.0 = 172 Day 4 130 160 Ave. 113 (2.30) 84% 140 (2.37) 85% 181 / 110% 173 Exhibit 22: The average monthly intensity was in the right general area, and the squats and equivalent clean & jerk are progressing. The overall times-in-motion in the snatch and clean & jerk are under 2.5 seconds, and the squats average ascension rate was one-second, so the times-in-motion are linked. Programming and Spreadsheet Data Entry for a 350k Total Exhibit 22: Incremental Increases: Open/Master 350k total (155 and 195) Snatch 20 50 70 90 100 110 120 130 140 145 150 155 Clean & Jerk 20 70 90 110 130 140 150 160 170 180 190 195 It probably isn't feasible for a lifter to reach a 350k total without going to a two session per day system and increase the overall average of reps and volume but not the average intensity. For general purposes I will keep them all the same to show how the intensities of the lifts can be manipulated and not the volume. Volume is too dependent on precision, smooth consistent velocity and non-deceleration to be forecast. Week One Day 1 Snatch120 x 4 x 2, 125 x 2 Clean & Jerk150 x 3 x 2, 155 x 3 x 1 Back Squat 108%210 x 4 x 2 2 Random Auxiliary Exercises Day 2 Snatch115 x 5 x 1, 120 x 1 Clean & Jerk145 x 3 x 1, 150 x 1 Clean Pull 100%195 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch130 x 5 x 1, 135 x 2 x 1 Clean Jerk140 x 3 x 1 Back Squat 100%195 x 4 x 4 2 Random Auxiliary Exercises Day 4 Snatch135 x 3 x 1, 140 x 3 x 1 Clean & Jerk165 x 4 x 1 Snatch Pull 100%155 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 210 + 20 @ 1.0 = 198 Day 2 120 150 195 Day 3 135 140 195 + 20 @ 1.0 = 185 Day 4 140 165 155 Ave. 84% (2.27) 78% (2.37) 192 The snatch average percentage is in line at 84%, but the lifter should increase the clean & jerk average. Week Two Day 1 Snatch125 x 5 x 1 Clean & Jerk155 x 3 x 2, 160 x 3 x 1 Back Squat 100%195 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch115 x 5 x 1, 120 x 1 Clean & Jerk155 x 3 x 1, 160 x 1 Clean Pull 100%195 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch135 x 4 x 1 Clean Jerk170 x 3 x 1 Back Squat 108%210 x 3 2 Random Auxiliary Exercises Day 4 Snatch135 x 3 x 1, 140 x 3 x 1 Clean & Jerk175 x 2 x 1 Snatch Pull 100%155 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 210 + 20 @ 1.0 = 198 Day 2 120 150 195 Day 3 135 140 195 + 20 @ 1.0 = 185 Day 4 140 165 155 Week 2 Day 1 125 160 195 + 30 @ 1.0 = 194 Day 2 120 160 195 Day 3 135 170 210 + 10 @ 1.0 = 189 Day 4 140 175 155 Ave. 130 (2.30) 84% 159 (2.37) 82% 192 The squat is getting back in line but the clean & jerk is still a little low on average and either needs to come up to 84% like the snatch, or the snatch needs to drop down to 82%. Since the squat has not been affected, the clean & jerk should be increased on average and see how the squat behaves. Week Three Day 1 Snatch125 x 5 x 1 Clean & Jerk160 x 3 x 1 Back Squat 103%200 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch120 x 5 x 1 Clean & Jerk170 x 3 x 1 Clean Pull 100%195 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch135 x 4 x 1 Clean Jerk170 x 3 x 1 Back Squat 108%210 x 5 2 Random Auxiliary Exercises Day 4 Snatch140 x 3 x 1 Clean & Jerk180 x 1 Snatch Pull 100%155 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 210 + 20 @ 1.0 = 198 Day 2 120 150 195 Day 3 135 140 195 + 20 @ 1.0 = 185 Day 4 140 165 155 Week 2

Day 1 125 160 195 + 30 @ 1.0 = 194 Day 2 120 160 195 Day 3 135 170 210 + 10 @ 1.0 = 189 Day 4 140 175 155 Week 3 Day 1 125 160 200 + 30 @ 1.0 = 198 Day 2 120 170 195 Day 3 135 170 210 + 20 @ 1.0 = 198 Day 4 140 180 155 Ave. 129 (2.27) 83% 163 (2.37) 84% 194 The clean & jerk was brought back in line with the snatch and the squat was still able to be improved upon. Week Four Day 1 Snatch130 x 5 x 1 Clean & Jerk155 x 3 x 1 Back Squat 103%200 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch125 x 5 x 1 Clean & Jerk165 x 3 x 1 Clean Pull 108%210 x 2 x 5 2 Random Auxiliary Exercises Day 3 Snatch135 x 4 x 1 Clean Jerk170 x 3 x 1 Back Squat 113%220 x 3 2 Random Auxiliary Exercises Day 4 Snatch150 x 3 x 1 Clean & Jerk190 x 1 Snatch Pull 100%155 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 210 + 20 @ 1.0 = 198 Day 2 120 150 195 Day 3 135 140 195 + 20 @ 1.0 = 185 Day 4 140 165 155 Week 2 Day 1 125 160 195 + 30 @ 1.0 = 194 195 Day 2 120 160 Day 3 135 170 210 + 10 @ 1.0 = 189 155 Day 4 140 175 Week 3 Day 1 125 160 200 + 30 @ 1.0 = 198 195 Day 2 120 170 Day 3 135 170 210 + 20 @ 1.0 = 198 155 Day 4 140 180 Week 4 Day 1 130 155 200 + 30 @ 1.0 = 198 195 Day 2 125 165 Day 3 135 170 220 + 10 @ 1.0 = 198 155 Day 4 150 190 Ave. 131(2.40) 85% 165 (2.37) 85% 195 Programming and Spreadsheet Data Entry for a 400k Total Exhibit 23: Incremental Increases: Open 400k total (180 and 220) Snatch 20 70 90 110 130 140 150 160 165 170 175 180 Clean & Jerk 20 90 110 130 150 160 170 180 190 200 210 220 At this level the monthly averages will be between 85% and 90%. We can assume the times-in-motion in the snatch and clean & jerk are 2.5-seconds or faster and at 87% they should be around 2.3-seconds or faster. Week One Day 1 Snatch140 x 4 x 1, 145 x 1 Clean & Jerk180 x 3 x 1 Back Squat 100%220 x 5 x 2 2 Random Auxiliary Exercises Day 2 Snatch150 x 5 x 1 Clean & Jerk185 x 2 x 1 Clean Pull 100%220 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch155 x 3 x 1 Clean Jerk190 x 1 Back Squat 105%230 x 5 2 Random Auxiliary Exercises Day 4 Snatch155 x 5 x 1 Clean & Jerk200 x 3 x 1 Snatch Pull 100%180 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 145 180 220 + 25 @ 1.0 = 211 Day 2 150 185 220 Day 3 155 190 230 + 20 @ 1.0 = 215 Day 4 155 200 180 Ave. 151 / 84% 189 / 86% 213 The lifter made a little more increase in both the snatch and clean & jerk. The equivalent squat needs to be 220k or more. Week Two Day 1 Snatch150 x 4 x 1, 155 x 1 Clean & Jerk190 x 3 x 1 Back Squat 114%250 x 2 2 Random Auxiliary Exercises Day 2 Snatch160 x 5 x 1 Clean & Jerk190 x 2 x 1 Clean Pull 100%220 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch160 x 3 x 1 Clean Jerk185 x 1 Back Squat 109%240 x 5 2 Random Auxiliary Exercises Day 4 Snatch165 x 3 x 1 Clean & Jerk200 x 2 x 1 Snatch Pull 100%180 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 145 180 220 + 25 @ 1.0 = 211 Day 2 150 185 220 Day 3 155 190 230 + 20 @ 1.0 = 215 Day 4 155 200 180 Week 2 Day 1 155 190 250 + 5 @ 1.0 = 219 Day 2 160 190 Day 3 160 185 240 + 20 @ 1.0 = 224 Day 4 165 200 Ave. 155 / 86% 190 / 86% 217 The intensity is in line, but the equivalent squat needs to be increased to at least 220k. Week Three Day 1 Snatch150 x 4 x 1, 155 x 1 Clean & Jerk190 x 1 Back Squat 114%250 x 4 2 Random Auxiliary Exercises Day 2 Snatch160 x 5 x 1 Clean & Jerk180 x 2 x 1 Clean Pull 100%220 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch160 x 3 x 1 Clean Jerk195 x 1 Back Squat 105%240 x 5 2 Random Auxiliary Exercises Day 4 Snatch165 x 3 x 1 Clean & Jerk210 x 2 x 1 Snatch Pull 100%180 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 220 + 25 @ 1.0 = 211 Day 2 120 150 220 Day 3 135 140 230 + 20 @ 1.0 = 215 Day 4 140 165 180 Week 2 Day 1 125 160 250 + 5 @ 1.0 = 219 Day 2 120 160 220 Day 3 135 170 240 + 20 @ 1.0 = 224 Day 4 140 175 180 Week 3 Day 1 155 190 250 + 15 @ 1.0 = 228 Day 2 160 180 Day 3 160 195 240 + 20 @ 1.0 = 224 Day 4 165 210 Ave. 157 / 87% 191 / 87% 220 Week Four Day 1 Snatch145 x 4 x 1, 150 x 1 Clean & Jerk185 x 1 Back Squat 105%230 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch160 x 5 x 1 Clean & Jerk180 x 2 x 1 Clean Pull 100%220 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch155 x 3 x 1 Clean Jerk190 x 1 Back Squat 105%240 x 5 2 Random Auxiliary Exercises Day 4 Snatch175 x 3 x 1 Clean & Jerk210 x 2 x 1 Snatch Pull 100%180 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date

Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 125 155 220 + 25 @ 1.0 = 211 Day 2 120 150 220 Day 3 135 140 230 + 20 @ 1.0 = 215 Day 4 140 165 180 Week 2 Day 1 125 160 250 + 5 @ 1.0 = 219 Day 2 120 160 220 Day 3 135 170 240 + 20 @ 1.0 = 224 Day 4 140 175 180 Week 3 Day 1 155 190 250 + 15 @ 1.0 = 228 Day 2 160 180 Day 3 160 195 240 + 20 @ 1.0 = 224 Day 4 165 210 Week 4 Day 1 150 185 230 + 30 @ 1.0 = 224 Day 2 160 180 Day 3 155 190 240 + 20 @ 1.0 = 224 Day 4 175 210 Ave. 158 / 88% 191 / 87% 221 Programming and Spreadsheet Data Entry for a 450k Total Exhibit 24: Incremental Increases: Open 450k total (200 and 250) Snatch 20 70 90 110 130 150 160 170 180 190 195 200 Clean & Jerk 20 90 110 130 150 170 190 200 220 230 240 250 At this level the monthly averages will be between 85% and 90%. We can assume the times-in-motion in the snatch and clean & jerk are 2.- seconds or faster and at 87% they should be around 2.3-seconds or faster. All back squats are one-second. Week One Day 1 Snatch175 x 4 x 1, 180 x 1 Clean & Jerk220 x 3 x 1 Back Squat 108%270 x 5 2 Random Auxiliary Exercises Day 2 Snatch170 x 5 x 1 Clean & Jerk210 x 2 x 1 Clean Pull 100%250 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch175 x 3 x 1 Clean Jerk220 x 1 Back Squat 105%260 x 4 x 4 2 Random Auxiliary Exercises Day 4 Snatch180 x 4 x 1 Clean & Jerk210 x 3 x 1 Snatch Pull 100%200 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (week 1) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 180 220 270 + 20 = 290 249 Day 2 170 210 250 Day 3 175 220 260 + 30 = 290 249 Day 4 180 210 200 Ave. 176 / 88% 215 / 86% 265 / 106% 249 Week Two Day 1 Snatch165 x 5 x 1 Clean & Jerk205 x 3 x 1 Back Squat 100%300 x 2 2 Random Auxiliary Exercises Day 2 Snatch180 x 5 x 1 Clean & Jerk225 x 2 x 1 Clean Pull 100%250 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch180 x 3 x 1 Clean Jerk220 x 1 Back Squat 100%250 x 4 x 4 2 Random Auxiliary Exercises Day 4 Snatch185 x 3 x 1 Clean & Jerk210 x 3 x 1 Snatch Pull 100%200 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1& 2) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 180 220 270 + 20 = 290 249 Day 2 170 210 250 Day 3 175 220 260 + 30 = 290 249 Day 4 180 210 200 Week 2 Day 1 165 205 300 + 10 = 310 267 Day 2 180 225 250 Day 3 180 220 250 + 30 = 280 241 Day 4 185 210 200 Ave. 176 / 88% 215 / 86% 252 Week Three Day 1 Snatch170 x 4 x 1, 175 x 1 Clean & Jerk190 x 1 Back Squat 116%290 x 4 2 Random Auxiliary Exercises Day 2 Snatch185 x 5 x 1 Clean & Jerk220 x 2 x 1 Clean Pull 100%250 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch170x 3 x 1 Clean Jerk210 x 1 Back Squat 116%290 x 4 2 Random Auxiliary Exercises Day 4 Snatch180 x 3 x 1 Clean & Jerk230 x 2 x 1 Snatch Pull 100%200 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet (weeks 1 thru 3) Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 180 220 270 + 20 = 290 249 Day 2 170 210 250 Day 3 175 220 260 + 30 = 290 249 Day 4 180 210 200 Week 2 Day 1 165 205 300 + 10 = 310 267 Day 2 180 225 250 Day 3 180 220 250 + 30 = 280 241 Day 4 185 210 200 Week 3 Day 1 175 190 290 + 15 = 305 262 Day 2 185 220 Day 3 170 210 290 + 15 = 305 262 Day 4 180 230 Ave. 177 / 89% 214 / 86% 277 / 111% 255 Week Four Day 1 Snatch175 x 3 x 1 Clean & Jerk220 2 x 1 Back Squat 116%275 x 4 x 4 2 Random Auxiliary Exercises Day 2 Snatch170 x 5 x 1 Clean & Jerk220 x 2 x 1 Clean Pull 100%250 x 4 x 2 2 Random Auxiliary Exercises Day 3 Snatch165 x 3 x 1 Clean Jerk210 x 1 Back Squat 116%285 x 4 x 2 2 Random Auxiliary Exercises Day 4 Snatch175 x 3 x 1 Clean & Jerk230 x 2 x 1 Snatch Pull 100%200 x 5 x 2 2 Random Auxiliary Exercises Monthly Report Spreadsheet Date Snatch Clean & Jerk Back Squat Equiv. C&J Cl Pulls Sn Pulls Week 1 Day 1 180 220 270 + 20 = 290 249 Day 2 170 210 250 Day 3 175 220 260 + 30 = 290 249 Day 4 180 210 200 Week 2 Day 1 165 205 300 + 10 = 310 267 Day 2 180 225 250 Day 3 180 220 250 + 30 = 280 241 Day 4 185 210 200 Week 3 Day 1 175 190 290 + 15 = 305 262 Day 2 185 220 Day 3 170 210 290 + 15 = 305 262 Day 4 180 230 Week 4 Day 1 175 220 275 + 30 = 305 262 Day 2 170 220 Day 3 165 210 285 + 20 = 305 262 Day 4 175 230 Ave. 176 / 88% 216 / 86% 278 / 111% 257 Appendix D General Breakdown of the Snatch and Clean & Jerk Anatomy of the Snatch Some people claim that the snatch and clean & jerk are highly technical movements. They say it takes years to become proficient and during that time the lifter is constantly working on weaknesses or technical problems. For some people who might not have the necessary athletic ability this might be true, but for those who have athletic ability, good reaction time and desire

the snatch and clean & jerk can be easily mastered in just a few sessions with a knowledgeable coach or simply by watching the best lifters in the world and mimicking their technical style. Once the lifter has the basic movements down, as far as what it looks like, then they only have to transfer over those visuals as their own. Transferring other athlete's style or form is nothing new and the best way to learn how to do a particular movement is first watch the best and then try and mimic those actions. The most ineffective way to learn how to do an athletic motion is to have someone tell you how it's done without showing how it's done, or read how to do it in a book, without some accompanying video visuals. Photographs are a poor teacher, as are words in a book as far as athletics are concerned. As an example, how do you get from the position 1 to the position 11 shown in the photos below. It would be very difficult to explain in words how this lifter has gone from 1 to 11 without knowing all the positions that are involved. The only change from 1 to 11 between the legs, hips and torso is the feet are spread out wider, and the arms went from a vertical position pointing downward to a vertical position pointing upward. For further analysis more, photos must be included to show as many positions and transitional phases as possible. Some of the positions achieved as the weight leaves the platform to where it is received at the lowest position have been named and some are transitional. It should be understood that all these positions are all transitional and should be thought of as one motion, from the platform to full lock-out. A lot of time can be spent on analyzing these positions and thinking that certain fixes to these positions can be applied if these positions are not being correctly achieved. A lot of research goes into analyzing the most intricate of motions and positions. For the athlete such information can become somewhat irrelevant to their ability to produce momentum and to produce that motion which will maximize that momentum. Producing momentum is synchronized between the CNS and the muscular system with the aid of the adrenaline system. The technique of the snatch and clean & jerk must be the same for the top lifters in the world for those top lifters to be able to train and compete at the same competitive level. The difference in winning and losing must be reduced to the ambiguous element of desire, backed up by proper training, rather than which angle or style variation is considered to be perfection. Position 1 (Set-Up): The start or set-up position allows the lifter time to ready themselves for the liftoff from the platform. Right before liftoff the lifter should relax the arms and arch the back allowing the legs, back and torso to do the work of the initial liftoff. The concentration should be on a smooth, continuous accelerated velocity on a conscious level and allow the unconscious to go through the action instinctively. There should be no negative thoughts creeping into the lifter's head and only positive thoughts about a successful lift. The grip should be secure enough that the barbell does not rotate within the hand, but not a death grip that will tense the arm muscles.

Position 2 (Liftoff): When the barbell is just a few inches off the platform the angle of the back should be set and not rotate downward any more than it has from the starting position. The angle of the back is transitional and it is never a static angle except from position 2 to position 3, the end of the 1st pull. The weight should be somewhat evenly distributed on the feet with the head held up and the back arched using a good posturing position while going through the lift to full extension. The weight should travel from the platform to the knees in 0.33 seconds and with as little effort as possible. You will never see a world class lifter drags the barbell off the platform. An effortless 1st pull is essential in progressing the lifter towards their full potential. How the lifter should go about training for this will be discussed in later chapters. Position 3 (2nd Pull): The first pull is from the platform to where the knees and hips begin to push forward. The action between the 1st and 2nd pull is also transitional and there should be no decelerated actions. The snatch is about combining various positions into one motion which is smooth, controlled and the accelerated velocity is continuous to the point where the arms are locked-out. The 2nd pull takes a very short period of time to complete, or approximately 0.2 seconds and this added to the 1st pull should be approximately 0.67 seconds. The barbell will travel the shortest vertical distance during the 2nd pull, but will receive the greatest momentum at the point of full extension. The ankle extension is applied to reaching full extension, but not directly involved in the production of momentum. The transitional phases in and of themselves cannot be determinative as far as absolute proficiency is concerned. Lifters will travel through these transitional phases using many different style variations and it's the maximum velocity that determines those style variations adopted by the athlete. The general schematic of lifting technology must be the same for every lifter, not the transitional nuances which are created by the lifter for their own purpose of producing momentum. These transitional nuances might even become cultural, because most lifters learn how to lift through coaches from their own country and they more often than not will try and emulate the best lifters from

their own country. The assumption that China produces lifters with better technique than other countries would be false and illogical, as can be seen by looking at how the world records are spread out over many athletes from different countries. China has better lifters overall in the lower weight classes is all that can be inferred, not that their technique is the superior one. Technique must be the same for everyone, but style variations will be numerous, but should not be misconstrued as a different type of technique that can produce a better result. Style Variations 1. The distance apart the feet are placed for liftoff and when receiving the barbell at lock-out. 2.The spacing of the grip for the snatch, clean or the jerk 3. The angle of the back at various phases of the pull to full extension 4. The position of the head during various phases of the snatch, clean or jerk. 5. The style of the jerk used 6. Jumping backward or forward in minuscule amounts 7. Some minuscule arm bending at liftoff 8. Going up on the toes before the power position is reached, but in the snatch more than in the clean & jerk 9. The amount of lean-back in the snatch or clean Position 4: The power position is the transition between the 2nd pull and the 3rd pull. There is nothing mysterious, complex or remarkable about this position, other than lifters and coaches have seen fit to dub this position as more important than other positions and have tried to prove it is determinative. The distance the lifter can travel is very small from the power position to full extension where maximal velocity is produced, thus the beginning of accelerated velocity must begin at the start of the 2nd pull, not at the power position. The lifter is actually readying themselves to pull under the bar at the power position. Position 5: Full extension is the point where maximum momentum is placed into the barbell. The top of the lifter's head or apex is at its highest point, the ankles are fully extended and the arms are straight. The shoulders are not engaged until the action of pulling downward is initiated. The lifter will be leaning back at this position enough to pull under the weight and keep the trajectory of the bar as vertical as possible. When working on a conscious level, the human mind is poorly adapted at making split second decisions. By the time the bar reaches the knees it will be too late to consciously decide to apply maximum velocity. If the lifter waits till the power position it will be even later. The lifter has to learn how to unconsciously apply velocity at the start of the 2nd pull. This means the 1 st pull must be nothing more than an afterthought and be like cutting butter with a knife; velocity opposed to strength.

Position 6: Pulling under the bar at full extension is commenced when the shoulders are shrugged. The above photo shows the initiation of the shoulder shrug as a transitional phase after full extension has been achieved. The change in direction from full extension to pulling under the weight is determinative and must be absolute and the greatest momentum at that transitional position must have been placed into the barbell for the transition under the weight to be efficiently applied. The pull under the weight to lock-out should be 0.33 seconds. Position 7: The only time the arms should bend is when the lifter is pulling downward to receive the bar at lock-out. The arms are used only to guide the lifter under the weight, keeping the bar close to the body and support the weight overhead. There should never by any attempt to induce height on the bar by using the arms for that purpose. The arms are simply not strong enough to do anything at that point but cause the lifter to float too long at full extension, which kills the momentum that is needed to receive the weight at the lowest possible trajectory point, without the weight dropping on the lifter with too much force to control the reception.

Position 8: With the right momentum at full extension, the barbell should be traveling upward while the lifter is moving downward to receive it. At the moment the lifter begins to pull under the bar the feet can be moving outward or stay in the same position. From the ankle flex, at full extension, the feet need to reengage the platform quickly in order to create a solid base for which to receive the barbell.

Position 9: At the time the feet are reengaged with the platform, the thighs will be just above parallel and the triceps will be parallel to the platform. The bar will be around eye level and still moving upward as the lifter is still moving downward to receive and lock-out the weight. The optimum time-in-motion from full extension to locking out the arms in the snatch and receiving the bar on the shoulders in the clean & jerk should be 0.33 seconds. The ratio of 2:1 between full extension and receiving the weight at lockout will always be in effect, unless the lifter has a voluntarily slower pull to full extension and still is able to pull under the weight in 0.33 seconds. It is the 0.33 seconds time of pulling under the bar that is critical. Position 10: The difference between locking out the arms upon receiving the bar and settling down into the full squat position should be minimized in the snatch to where the weight does not drop down after lock-out. The lifter can pull into the full squat position and pause a short time before standing up or initiate a timed rebound without any pause. Position 11: From position 10 the lifter might have to settle down into a lower position after locking out the elbows. Again, the time

between the lock-out and standing up should be minimal or eliminated completely in the snatch. The Power Snatch The Functionality of the Power Snatch Some determination needs to be made about what is considered to be a power snatch, as far as the height at which the weight is to be received, and make sure that height becomes a fixed standard, so involuntary variations in depth are held to a minimum or eliminated completely. Any lift received at just above parallel or higher should count, as long as the depth is consistently achieved. The power snatch is only a variation for those who can do a full squat snatch. The power snatch should mainly be used as a warmup protocol for the lighter incremental increases and as the weight increases the lifter should gradually lower the receiving position until they are at an incremental weight where they have warmed up sufficiently to receive the weight in the full squat position. For both lifts this would be done to gradually get the legs used to receiving the weight at the different heights by riding the weight down after reception, in order to eliminate any abrupt shock to the muscular system, and ensure a smooth transition from power to full. Riding the weight down after reception when doing a power snatch is strictly for warmup purposes. A true power snatch, regardless of the depth reception, should be received without riding the weight down, but executed by immediately standing up from the point of reception. A power snatch should be exactly the same technically, save for the height of the reception, as doing a full squat snatch. It takes the same time-in-motion to do a power snatch as it does a full squat snatch, at least from the platform to locking-out the weight overhead. It takes 1.0 second regardless of how low or high the snatch is received. The power snatch will be an equivalency between the full snatch and power snatch, regardless of the receiving height. There will be a proportional drop off in the mass as the weight is pulled higher. The accelerated velocity and momentum are the same regardless of the various receiving heights. However, there will be faster overall times-in-motion (from the platform to standing up) from a full to a power snatch. This is what makes these lifts equivalent regardless of the height the weight is received or the amount of weight being handled. For example, a full squat snatch with 150k in 2.2 seconds (from the platform to stand-up) and a power snatch at quarter squat (from the platform to stand-up) with 135k in 1.5 seconds are equivalent in accelerated velocity and momentum. There is basically no difference between a power snatch and full squat snatch as far as the mechanics of the pull to full extension and the 3rd pull are concerned. The receiving height and overall time-in-motion are the only variables. It would be difficult to correlate a power snatch to full squat snatch, due to the equivalencies, and there are too many different depth variations. Generally, there should be about an 85% ratio of power snatch to snatch, if the power snatch is caught at about quarter squat. At lower depths the ratio increases to eventually become 100%. A muscle snatch without press-out might be around 60% of snatch. The variance of weight goes from 60% to 100% depending solely on the height the weight is being received. When doing doubles or triples, in the power snatch, the lifter should take great care in insuring each rep is voluntarily received at the same height. If each rep is subsequently and involuntarily lower, then the weight should be reduced in order to keep each receiving height consistent. Catching each rep at different receiving depths voluntarily is different from the amount of weight causing each depth to be different, due to involuntary actions caused by a change in mass. From a training standpoint, the power snatch cannot progress the full squat snatch because both lifts are technically the same as is the energy or power output. As stated before the main benefit of doing power snatches is in the early stages of warming up. There is also some benefit in teaching beginners the power snatch in order to show them how to power snatch into the full squat position. Aside from those two benefits, the power snatch's functionality drops off considerably, unless the athlete is mobile enough so the motor pathways stay intact when switching from power to full. The power snatch should be considered a variation if it is trained off the platform. If it is trained as a partial lift it should be considered a partial lift, and trained at a reduced level of intensity and volume compared to the full movement. All variations should be trained at a reduced level of intensity and volume relative to the full movements. Anatomy of the Clean Position 1: The setup for the clean will be similar to the snatch except the grip will be narrower in the clean than in the snatch. Some lifters take longer to set up after gripping the bar and some begin the liftoff as soon as the grip has been secured. There are numerous personal preferences involved in what is called a particular style of lifting. Style preferences have little to do with the basic technique of lifting the barbell from the platform to full extension. Position 2: Transitioning into the liftoff the hips will rise along with the bar to the above position, where the back angle will be locked into place and the downward rotation will cease. Some lifters will maintain the same back angle from liftoff to the beginning of the 2nd pull. The arms are straight and the head is up.

Weight is evenly distributed on the feet. At this point the angle of the back should not change or rotate downward, so the tension can be shifted from the back to the hips. Position 3: This begins the 2nd pull into the power position. At the power position the lifter's ankle flex will be sooner in the snatch than the clean. This is because the lifter is not having to produce the same momentum as in the snatch where the barbell has to be raised to a position higher than it does in the clean. Note the angle of the back decreased from its greater angle from the initial liftoff. The back and hips act like levers to produce torque between the hip and back. Position 4: This is commonly known as the "power position" and is a transitional phase between the beginning of the 2nd pull and full extension. The use of the ankle extension is varied among lifters. Some begin the ankle extension just a little before the torso is vertical and some wait for the torso to be vertical before extending the ankles. Again, this is individualized depending on how much momentum can be produced, depending on the method best suited. Position 5: Full extension will look basically the same for all lifters, some might have to lay-back more than others and this depends on the momentum or time-in-motion of the pull to full extension. The slower the time-in-motion the more the lifter will need to lay-back before pulling under the weight and vice versa. Style variations are generally determined from those times-in-motion that each individual lifter is able to achieve and the accompanying transitional velocities. Position 6: From full extension the shoulders are shrugged in order to initiate pulling under the weight to receive it. As in the snatch, the times-in-motion are approximately 0.67 seconds to full extension and 0.33 seconds to receiving the bar on the shoulders from full extension, commonly known as racking the weight. There is an approximate 2 to 1 ratio between full extension (1st plus 2nd pull and the 3rd pull).
Positions 7: During the 3rd pull the feet are repositioned back to the platform as quickly as possible, using whichever style is best suited for the individual. The most common style is shifting the feet outward, which allows the lifter to receive the weight at the lowest trajectory point and keep the hips closer to the lifter's center of gravity. Position 8: Racking the barbell should occur when the thighs are parallel. The elbows need to be rotated around and at the highest point when the barbell comes into contact with the shoulders. Some lifters are able to keep the hook grip and some have to release the hook grip upon receiving the bar on the shoulders. Some lifters even receive the bar on the tips of the fingers. Style variations are dictated by flexibility or personal preference. Position 9: This would be the lowest position achieved before standing up from the clean. The lifter will initiate a timed rebound out of the bottom position or a double bounce or stand up from a short pause in the bottom position. These variations might even occur at different times in training or in competition. The timed rebound using a quick change in direction to drive the lifter upward is the most efficient variation.

Positions 10: Standing up with the weight should take 1.0 second or less so the lifter will conserve enough energy for the jerk. This means the clean from the platform to standing up should be 2.5 seconds or faster. The slower the overall times are, then there will be more of a chance the jerk will be more difficult to perform. Most top lifters are able to execute all their lifts in training and in competition with an overall time less than 2.5 seconds, and some can do it at around 2.0 seconds. This is because speed is more valuable to the lifter than the absolute value of strength. Strength should always be defined (trained) as a product of accelerated velocity and never an exclusion. Anatomy of the Jerk The time between the clean and the jerk should be just enough so the lifter will be able to make the most effective dip possible. The overall time from the platform to lock-out should be consistent and as quick as the lifter is comfortable with. This time can be anywhere from 3.5 seconds to 7 seconds, but it should be consistent in training and in competition. Position 11: Before the dip is commenced the lifter should raise the elbows and set the upper torso in a stable and rigid position. A deep breath should be taken right before the dip. The deep breath will help stabilize the upper torso during the jerk. Position 12: The dip should be controlled and as fast as the lifter is able to move and still maintain control and keep the bar in contact with the shoulders. The more leg drive (speed) the lifter has developed the shorter the dip will be and if the leg drive is not very well developed the dip can be very long and even paused at the bottom of the dip. Again, velocity will dictate much of the lifter's style of lifting. Position 13: The drive should be as fast as the lifter is able to move toward full extension. Full extension will be where the lifter is fully extended and the bar is still on the shoulders. The ankle flex will be minimal when the split style is being used. Position 14: Both feet should return to the platform at the same time at maximal impact. The toes might come down first, but with little force yet applied until the front foot has been returned with equal force. The lifter, once the feet have received the shock of the weight, must push downward until the arms are locked out. This means the lifter is moving

downward to the point where the lockout can be secured, rather than the barbell moving upward. The arms should not ever be used to push the barbell upward, but only used to push the lifter downward. The arms should stay as relaxed as possible during the dip and drive to full extension, and come into play at the right time to secure the lockout. Position 15: The head should move back so the bar will not come into contact with the chin. The arms should not come into play until the bar leaves the shoulders and then used only to push under the weight and secure the lock-out. Jerk Variations 1. Split with straight back leg 2. Split with bend in back leg 3. Split with extreme bend in back leg 4. Squa Jerk above parallel (commonly known as power jerk) 5. Squat Jerk at parallel 6. Full Squat Jerk 7. Combination of split and squat Jerk Recovery Variations 1. Front leg first followed by back leg 2. Back leg first followed by front leg 3. Back leg to front leg 4. Standing up out of a squat jerk Position 16: In this photo the back foot is brought forward to come into line with the font leg. The method most used in training and warming up, is for the front foot to move in toward the lifter first and the back foot is moved in line with the front foot. The opposite of what is shown in position 16, but this is actually more common than most would think. It depends on the trajectory of the barbell. If the barbell is pushed forward a small bit, then the back foot will move forward before the front foot. Either method can be used at any time during training or in competition when maximal weights are being attempted. In other words, whatever can happen will happen and the lifter must be able to react, as an athlete, to any situation at any time in order to secure the lift and possibly win the day. Position 17: About half the world clean & jerk records use this style and the other half the front foot is brought back and then the back foot is brought into line. The style variations are dictated by how the jerk was received and sometimes it is simply a preference. As stated before technical nuances are created by the lifter to satisfy their ability to produce momentum and travel through these motions in the most effective manner that is suited for them for any particular situation. Times-in-motion The Snatch 1. From liftoff to full extension: 0.67 sec. 2. From full extension to lock-out: 0.33 sec. 3. From liftoff to standing up: 2.0 to 2.5 sec. The Clean 1. From liftoff to full extension: 0.67 sec. 2. From full extension to rack: 0.33 sec. 3. From liftoff to standing up: 2.0 to 2.5 sec. The Jerk 1. From the dip to lock-out: 0.5 sec. 2. From the liftoff to lock-out: A Consistent time-in-motion suitable to the lifter The Value of Times-in-motion It is important to record and come to understand what each time-in-motion means to each individual lifter. If the times-in-motion are not held to a strict standard during training, and are allowed to degrade (decelerate), then over time, the lifter will cease to progress to their full potentiality. These times-in-motion above are essential for training purposes in order for the lifter to allow room to progress. Decelerated (grinding) actions over time will hinder progress. This is because the muscles are not being trained or strengthened for maximal accelerated velocity, but for slower velocities that will only allow more weight to be handled in the squats and pulls, but those squats and pulls will be transferred over as slower times in the 1st pull and when standing up with the weight. The times-in-motion of the squats and pulls must be in sync with the times-in-motion of the snatch and clean & jerk. The same way the squats and pulls must be executed exactly the same as the lifter executes the pull and recovery in the snatch and clean and the dip and drive in the jerk. Maintaining position and specific times-in-motion are equal in importance, but greater velocity will always win out over a less than perfect performance. In reality, moving at accelerated velocities during training will eventually correct errors and make the lifter more efficient and more proficient over time. The opposite can be said when slower times-in-motion are being applied. For example; if a lifter can handle most of the warmups in 2.5 seconds or faster, but when they get to 90% or more those times begin to degrade, it is a sure bet the lifter is training the squats and pulls using absolute amounts instead of specific times-in-motion, regardless of the amounts. In training, all that matters, is consistency in both the times-in-motion and the intensity levels. Without this consistency, the lifter might become a decent lifter, but will never become a world champion. Appendix E Utilizing Data Points The lifter should record the following averages so they can utilize the data for training and programming purposes. The following is a list of those data points they should include in the training log; Average C&J Use the top-ending weight for the day, not per session, if more than one session per day is scheduled. Use only the top-end weight regardless of the number of sets or reps. Average Front Squat Use the top-ending weight for the day, not per session. Using only the best set, if the lifter executes more than one set, that has the fastest time-in-motion. Average Overall Times-in-motion The overall time-in-motion of the clean and the ascension times in the front squat the lifter should average monthly. The times need to become consistent as the lifter progresses. Equivalent Clean & Jerk

Arrived at by taking the best set of front squats with the fastest times-in-motion and calculating the equivalent front squat in 1.0 second. Correlations from Training Logs Correlation 2a: Monthly PB (personal best) Fsq to Monthly PB C&J During the training phase, the monthly PB clean & jerk will be a little less than during the peaking phase where the more intensity driven snatches and clean & jerks are honed-in. The ratio should always be greater than 100% regardless, except during a conditioning phase. Correlation 2b: Average Equiv. C&J to Average Fsq This correlation is important to know, especially if the ratio is less than 100%. Correlation 2c: Average Equiv. C&J to C&J Meet PR This correlation should be greater than 100%. Correlation 2d: 1RPB (1 rep personal best) Fsq to C&J Meet PR Correlation 2d needs to be 110% for the times-in-motion to be 2.0 seconds in the overall time of the clean portion and 100% for an overall time of 2.5 seconds. The lifter could perform slower times than 2.5 seconds when they decelerate the squats too often and for too long a period, especially when the lifter continuously pushes to failure. Correlation 2e: Average Fsq / Average C&J Correlation 2e is used to correlate the average front squat to average clean & jerk and should be greater than 100%. The following table will be reflective of a lifter with a clean & jerk PR of 130k and front squat in 1.0 second of 135k and those monthly averages, which include the weekly averages of the clean & jerk, front squat equivalent clean & jerk and the times associated with those lifts. Date C&J Front Squat Equivalent C&J Week 1 Day 1 105k @ 2.0 sec. 100k x 3 @ 0.8 = 130k Day 2 110k @ 2.07 sec. 115k x 4 @ 1.0 = 130k Day 3 115k @ 2.13 sec. 125k x 2 @ 1.1 = 125k Day 4 Day 5 120k @ 2.1 Sec. 135k x 1 @ 1.0 = 135k Wk. 1 Averages 112.5k @ 2.07 86.5% 119k x 2.5 @ .98 sec. 130k Week 2 Day 1 90k @ 1.9 sec. 120k x 2 @ 0.9 = 135k Day 2 105k @ 2.0 sec. 140k x 1 @ 1.2 = 130k Day 3 100k @ 1.9 sec. 110k x 4 @ 0.9 = 135k Day 4 Day 5 110k @ 2.1 sec. 120k x 2 @ 0.9 = 135 Wk. 2 Averages 101k @ 2.0 sec. 78% 121k x 2.4 @ .98 sec. 134k 2 Wk. Averages 107k @ 2.03 sec. 82% 121k x 2.4 @ .98 sec. 132k Week 3 Day 1 95k @ 1.97 100k x 3 @ .7 = 140k Day 2 100k @ 2.0 120k x 5 @ 1.1 = 130k Day 3 Day 4 105k @ 2.07 120k x 2 @ .9 = 135k Day 5 110k @ 2.1 sec. 150k x 1 @ 1.1 = 140k Wk. 3 Averages 105k / 81% 2.03 sec. 121.3K x 2.5 / .967% 132k Week 4 Day 1 100k @ 1.9 sec. 130 x 3 @ 1.0 = 140k Day 2 90k @ 1.9 sec. 120 x 4 @ 0.9 = 145k Day 3 90k @ 1.9 sec. 100k x 3 @ 0.8 = 130k Day 4 Day 5 115k @ 2.10 sec. 140 x 1 @ 1.0 140k Wk. 4 Averages 99k / 76% 1.95 sec. 126k x 2.75 / .93 sec. 139k Monthly Averages 104k / 80% 2.0 sec. 123k x 2.56 / .95 sec. 138k At the end of the month, the lifter should interpret data from the noted correlations. Correlation 2a: Monthly PB Fsq to Monthly PB C&J 140 / 120 = 117% At an average monthly level of intensity of 80%, the front squat would be allowed to increase. As the ratio from correlation 2a gets closer to 100%, then the monthly average intensity will be exceeding 80%. Correlation 2b: Average Equiv. C&J to Average Fsq 138k / 123k = 112% As this percentage gets closer to 100%, then the times-in-motion of the front squat is getting slower, and the average monthly intensity of the front squat is increasing. For example, if this lifter's average front squat was 153k and average equivalent clean & jerk is the same then; 138k / 153k = 90% As the front squat increases the times-in-motion will be slower on average to accommodate the heavier squats. 153 - 138 = 15 / 50 = .3 + .956 = 1.256 sec. The lifter is squatting more weight, but since the time-in-motion is slower than 1.0 second, it produces a ratio of less than 100%, and the main effect will be on the lifter's ability to maintain the overall time of 2.0 seconds in the clean portion. It will also have an impact on the lifter's ability to jerk the weight because the lifter is not squatting at the beneficial drive velocity. Doing heavy jerks out of the rack will not correct for this problem, because; 1. The jerk out of the rack or off boxes does not work the legs from a low enough transfer point, which must be, at least, from just above parallel. This transfer point needs to be 0.5 seconds the same velocity as the jerk from the dip to the lockout. A 0.7-second full front squat with 100% of clean & jerk PR will fortify the jerk drive, as will a 0.5-second front squat from parallel, also with 100% of PR weight. The back squat would be 116% of clean & jerk PR at the same times-in-motion as the front squat. 2. Absorbing the impact forces is also an essential reason for having a separation between the front squat and clean & jerk. Correlation 2c: Average Equiv. C&J to C&J Meet PR 138k / 130 = 106 The average equivalent clean & jerk should always be greater than 100% of clean & jerk meet PR. Correlation 2d: 1RPB (1 rep personal best) Fsq to C&J Meet PR 140k / 130k = 108% The lifter reduced the average intensity of the clean & jerk from 86.5% to 80%. These percentages are important to adhere to for the lifter to perform more repetitions in the snatch and clean & jerk with as little stress (impact forces) on the joints as possible and for the intensity of the squat to improve on average. Remember the only difference between the front squat and clean are the impact forces. Only when a meet is looming soon, such as two months

out, the lifter hone-in the snatch and clean & jerk into peak condition. Honing-in the lifts should only take about three weeks of 90% to 95% successful efforts on the weekends. The lifter should avoid 100% efforts in training, especially attempts at PRs before a competition. Holding back could have a beneficial effect in the lifter's ability to snatch or clean & jerk at peak performance. They might even do a little more than PR by holding back. Correlation 2e: Average Fsq / Average C&J 123 / 104 = 118% During the peaking phase, this ratio should be closer to 110% but not less than 110%. Correlation 2e will ensure the lifter is training the squats, and clean & jerk at the right percentages, as long as the times-in-motion are maintained at 2.5 seconds or faster in the clean portion and 1.0 second or faster during the ascent of the squats. If the back squat is being emphasized the percentage of back squat to front squat will be about 116% greater. The front squat is a better measuring rod for correlations with the clean & jerk since it tracks closer to the clean & jerk at 1.0 second ascension times. If the back squat were used instead of the front squat the result would be the following; The percentage should not be less than 128% when the lifter uses the back squat and 110% for the front squat during the peaking phase. The lifter can ensure that the clean portion in competition will be 2.5 seconds or faster. The jerk portion needs a front squat equal to or greater than clean & jerk PR in 0.5 seconds in absolute terms, not based on averages. The depth should be just above parallel. It takes less velocity to stand up with a clean compared to the speed needed to achieve the jerk. The clean and the jerk might be separate motions, but for the majority of training, it should be trained as one lift and not as different events. The squats should not be trained any different whether the lifter is in training or peaking for a meet. The squats are assistance lifts that are used to guide the lifter’s training by making sure the correlations as mentioned earlier are pre-programmed into the training. It takes about a month or two to recover fully from major competition; this would include gym lifts where the lifter pushes both the snatch and clean & jerk for PRs, successful or not. It might be wise only to achieve one or the other, so those additional impact forces from doing both the snatch and clean & jerk at maximal effort do not cause problems with training for a meet that is only a month or less out. Any lifter attempting PRs a week out or less from a major competition is gambling with their performance. In most cases, a lifter will achieve what they have lifted in the gym or less in a competition, where those maximal efforts have been performed less than a month out. Maximal efforts do not have to be PR attempts they can be 97% or sometimes even less and still create the same effect as if they were 100% efforts. Whatever big lifts the lifter has in their head to do before a meet should at least be done over a month out so the lifter can hold that peak and then tapper. It is near impossible to hit gym PRs two weeks out and expect to do those same lifts in the meet. The expectation alone can be mostly a delusion of grandeur. Basing expectations on those delusions can make it difficult to lift on a more unconscious level, and the feel of the weight can seem heavier than expected. Lifters with a lot of confidence will be able to perform without having to test themselves in training. Testing confidence means achieving those 3rd attempts that they expect to complete in the competition within two weeks of that competition and sometimes only a week out. Testing this way will assure the lifter they will not do well in the meet, and their lack of confidence is validated, and the lifter testing before competitions will continue. After the 3rd week the average level of intensity of the snatch has been brought down to 81%, and the front squat has remained consistent from week 2. What most lifters have trouble with is not ever attempting a 1RM front squat without regard for the time-in-motion or non-decelerated actions. In reality, there should never be a so-called 1RM effort in the squat because the relationship is not how much weight can be moved, but what the equivalent clean & jerk is, and the heavier and slower the squats are the more the equivalent clean & jerk will become less than the actual clean & jerk. The emphasis in training must always be on precision and velocity and never on those numbers that are created using decelerated actions. Decelerated squats might not affect the average level of intensity of the clean & jerk or the equivalent clean & jerk, but it will cause the overall times in the 1st pull and standing up with the weight to be slower, due to cause and effect. The short-term effect might be negligible as far as making progress, however, over the long term the lifter will become stagnant sooner and will not be able to reach their full potential or will be more likely to sustain injuries. If this lifter also trains the clean & jerk at higher average levels of intensity such as 85% to 90%, this will compound the problem and cause stagnation or injury to occur sooner. Again, it’s the impact forces that cause most injuries and decelerated actions in the squats and pulls and parts of the lifts increase the overloading which can cause those impact forces in the snatch and clean and jerk to be more pronounced. The lifter should choose between faster overall times in the snatch and clean and squats and pulls, which will keep the

competition lifts linked to the squats and pulls or decelerated times. Choosing faster times gives the lifter the opportunity to achieve their full potential. Decelerated actions in the squats and pulls never allow the competition lifts and squats and pulls to become linked or in sync. For those lifters who have more slow twitch fibers than fast twitch, their fate is probably already sealed. The probability of moving at the correct velocity as the lifters who possess more fast twitch fibers than slow twitch is unfortunately considerably less. The lifters with more slow twitch fibers are forced to train at decelerated actions, but if the lifters with more fast twitch fibers also use decelerated movements, they will wind up in the same boat with the lifters that have a greater amount of slow twitch. What goes unused or abused for too long can be lost forever, regardless of which side of the fence you're standing on. Training the clean & jerk at 80% average intensity has allowed for the creation of separation between the clean & jerk PR and 1RM front squat in 1 sec. For the time-in-motion, to average 2.0 seconds the separation needs to be at least 110%. This means this lifter has the potential to clean & jerk 138k in 2.1.0 seconds. Any attempt during training to set a clean & jerk training best should be made by scheduling a date and time for such an event and not done willy-nilly just because the lifter feels like it on a particular day and time of choosing. Gym PRs should also be increased by 1-kilo increments unless there is a good reason to do more. If the above lifter scheduled a practice meet at the end of the next weeks training, then the 131k should be established first before increasing the weight. The lifter should base any additional increase on the lifter being able to maintain precision and the 2.5 second or faster time-in-motion. As the monthly intensity level of the clean & jerk increases from 80% to 8 5% the front squat times-in-motion will become slower at the same weights and possible lower the equivalent clean & jerk. This is why peaking for a meet is a bit difficult and requires some adjustments so peaking will have a positive impact on the meet performance. The volume in the squats and also the weight might need to be adjusted to allow for the increase in the snatch and clean & jerk during the peaking phase. All these points are predictable because they are based on the time of 1.0 second in the snatch and clean from the platform to receiving the weight. Since this 1.0 second time is generally finite, just as the time-in-motion in the discus from the back of the ring to the release of the implement at 1.2 seconds is finite. This means the release velocity will have a minimum effect on the overall time but can have a considerable impact on the distance. The same with the snatch or clean during the change in direction from full extension to receiving the weight at lock-out. The discus thrower must transfer the release velocity into distance and the weightlifter has to transfer their release velocity from full extension into receiving their own implement. The impact of the discus is absorbed by the ground and the weightlifter must absorb the impact forces of receiving the barbell through the legs, hips, unbroken posture of the upper torso and shoulders. Since the time-in-motion of the snatch and clean is 1.0 second, the squat must also be 1.0 second as an equivalent to the snatch and clean, because it must. The overall time of a clean in 2.0 seconds with maximal weight is also finite. It only allows for the 1.0 second finite reception and 1.0 second from lock-out to ascension. All non-beneficial motions are eliminated in a 2.0 second clean and thus the 2.0 second clean is forced to be as close to technically proficient as possible or close to 100% of perfection. Just as the discus thrower can determine how proficient their throw is by the trajectory or flight of the discus at maximal distance, the weightlifter can also determine their proficiency by the overall time-in-motion of their maximal clean (and jerk). If the lifter never measures their times-in-motion, they cannot ever know how proficient they are or if their squats and pulls are decelerating. Remember equivalencies are included in decelerated actions and there is no way around it. A 200k back squat in 1.8 seconds is equal to a 160k back squat in 1.0 second and that 1.0 second back squat is the only data point that can be used to correlate for the clean & jerk. The 200k back squat in 1.8 seconds is overloading and can only produce a slower overall time-in-motion with maximal clean & jerk. 200k @ 1.8 sec. 1.8 - 1 = .8 x 50 = 40k and 200k - 40k = 160k 160k x .86 = 138k clean & jerk @ slower than 2.5 seconds for the clean portion. Unless a lifter is able to defy the laws of physics these calculations hold true for any lifter regardless of their level of proficiency. Only the 1.0 second squat or equivalent can be used to effectively train the lifter to full potential. The 1.0 second squat must stay within a relative range of 0.5 seconds plus or minus, because any squat slower than 1.5 seconds will be decelerated and therefore considered unnecessary overloading. I doubt it possible to squat much faster than 0.5 seconds with anything more than light warmup weights. Since all that matters are the 1.0 second time-in-motion of the squat then if all squats are achieved in exactly 1.0 second regardless of the sets or reps or weight on the bar that would be an ideal situation or solution. Any increase in weight in the squat would represent absolute progress and

increases in the snatch and clean & jerk should be assured. By knowing only what a lifter can clean & jerk and the time-in-motion, the squat in 1.0 second can be determined and the snatch, along with the pull to the knees in 0.33 seconds. For example, a lifter has a clean & jerk of 165k in 2.9 seconds, then the most they will front squat is 145k in 1.0 second. 165k / 100% = 165k front squat in 1.0 second at 2.5 sec. and 2.9 - 2.5 = .4 x 50 = 20k and 165k - 20k = 145k in 1 sec. As long as the monthly average is 2.9 seconds the 1.0 second front squat must be less weight than what it would be if the average time was 2.5 seconds. At 2.0 seconds in the clean portion the front squat in 1 sec. would need to be 110% of clean & jerk PR; 165k x 110% = 182k @ 1 sec. The times-in-motion in the clean must be tied to the amount of weight in the front squat at 1.0 second, as also the technical level of proficiency. It is impossible for slower times to produce faster accelerated velocities. Slower overall clean times are a direct result of doing decelerated squats and pulls, because they are the same. How a lifter squats and pulls is how they will squat and pull during a snatch or clean & jerk. Time-in-motion over a specific distance from point A to point B is the same as meters per second as an absolute amount. A car taking one hour to go 60 miles is the same as the car's speed being 60 mph when using speed in absolute terms. If that car has to start off at 0 mph, it must go faster than 60 mph during parts of the drive-in order to reach point B in 1 hour, but these are unknowns when asking how long it take for a car to go 60 miles at 60 mph. The absolute time of 1 hour is all that is needed. Besides it is very cumbersome to try and convert meters per second or mph to time-in-motion or a value that is easy to use as a training aid. This is why coaches use the stopwatch in swimming and track. It would be next to impossible to train a swimmer or track runner using force plates and speed guns. They just need a basic idea of how long it takes them to get from point A to point B. The other stuff is fine for academia, but not all that practical for everyday training purposes. When pulling the weight from the platform to full extension all the lifter needs to know is the time-in-motion, because all intermediate velocities or force production will be expressed within that time-in-motion (t) over their particular distance (d). If top speed is measured the taller lifter will always be faster than the shorter lifter, but the time-in-motion will be the same because the distance (d) is different. If a car is only driven 30 miles instead of 60, but has to take 60 minutes then the speed will have to be 30 mph instead of 60 mph. A 60-fps camera would be ideal for measuring times-in-motion in weightlifting because weightlifters move at a snail's pace compared to sprinters in swimming or track or the release velocity of the throwers in track. It would be a bit absurd to think that a lifter doing a 200k clean & jerk could move as fast as a discus thrower heaving a 2k implement. At 60 fps just about any imperfection could be spotted and the transitional times could be easily measured.