ISSUE SIXTY-ONE

the CrossFit JOURNAL

September 2007

CrossFit Training for Law Enforcement

Jacksonville Five Years Later

TJ Cooper and Phil Canto

After several years of providing CrossFit training to law enforcement personnel at varied stages in their careers, I have picked up a few things that might be beneficial to those among you preparing to do the same. I would like to share with you the process of CrossFit implementation, sustainability, and improvement that we use for training recruits at the Jacksonville Sheriff's Office. Much of what I have to say may be what you are already doing. If that is the case, then see this as confirmation of your approach. For those of you hoping to implement similar programs at your agencies, I hope this description of our program and principles will be a useful example.

History

In 2001, Greg Glassman came to Florida to give a CrossFit seminar for the Florida Police Corps at the request of Training Specialist Derek Ray. At the time, as a

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sergeant in the Jacksonville Sheriff's Office, I had been running a parallel program in the Jacksonville Sheriff's Office and Florida Community College's Basic Law Enforcement (BLE) Program. The CrossFit program I was implementing had been quietly supported, tweaked, and tested via correspondence and advice from Coach Glassman; recruits in both programs were showing remarkable results. (See "Police Training" in CrossFit Journal issue #3 [March 2003].) In fact, the program was indeed "forging elite fitness" among our recruits, just as its founder promised. Now, in 2007, the program continues. This article describes our current implementation and standards for recruits from day one to graduation.

As reported in the March 2003 issue of the CFJ and recorded in our internal documents, CrossFit led to a reduction in injuries among recruits. The Florida Police Corps Program was seeking training protocols that produced fitness and performance results above average compared to what was being used in traditional training programs. From the academy and agency standpoint, we had three additional requirements:

- Reduction of injuries
- Adaptability to all tenure periods
- Recruits' successful completion of the program physical fitness exit exam.

The results of the program in 2003 were better than expected. Injuries in my programs were down 80 percent in the first year. The few injuries that did occur happened under fill-in (i.e., non-CrossFit) instructors when I was not present. In these instances, the substitute instructor "freelanced" and used unstructured protocols inconsistent with CrossFit's standards. Since that first year, we have had no physical training injuries related to our model of conditioning. None.

We have trained BLE classes since 2001, encompassing approximately 970 recruits for the college and an additional 375 hired police recruits for the Jacksonville Sheriff's Office. During training at our agency, I observed an increase in skills and abilities and an acceptance of conditioning by our agency personnel at all levels. More importantly, it forced us to realize that our "traditional" standards were not as demanding as they could have been. The fitness exam being used at the time required very little in the way of functional fitness. The exam was essentially one minute of push-ups and sit-ups, a one-and-a-half-mile run for time, and, finally, the Job Task Obstacle Course. The existing program was in need of adjusting if the officers we wanted to produce were to be fitter and more capable than the average citizen we swore to protect.

Since the implementation of CrossFit, academy graduates who have been recruited by outside agencies have been lauded specifically for their physical and mental combat readiness and "can-do" attitudes. The top performers in our physical training programs have moved on to tactical assignments where they publicly credit their survival in deadly force engagements and extended stressful incidents to their "CrossFit mentality."

Jacksonville's three-phase program

During Florida Community College's Basic Law Enforcement (BLE) Program, and the Jacksonville Sheriffs Office Recruit Academy, our CrossFit implementation was introduced to recruits in a three-phase process. During the three phases, we lecture on fitness, teach new exercises, and mete out a variety of workouts. With this focused introduction of the basic CrossFit principles, our goal is not only to prepare recruits for the immediate demands of the job but also to give them the tools to continue their training and progress after graduation and remain involved in an ongoing pursuit of better performance and lifelong health.

In Phase 1, recruits are introduced to our training program with a 4-hour foundations lecture. We explain the concepts of fitness, discuss nutrition, and explain how the program will prepare them for patrol and specialized unit training. Recruits are given forms that they will use to record their food, sleep, and activity for three days. We use this to make it clear that the program is broadly based and requires solid foundations across the board, including a proper diet. It is not an isolated once-a-day PT session. We expect them to integrate it into their lives.

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In this phase, we introduce recruits to several of our general fitness standards, beginning with a proper warm-up, body mechanics, and movement standards. It is here that we begin their metabolic conditioning and strength training. We also give the first standards exam to set a benchmark we can use to gauge progress throughout the training cycle. These standards run alongside the still-required standard entry/exit fitness exam, which is still required of law enforcement candidates for acceptance into the training academy (at both the college and the sheriff's office). The candidates also must pass the same exam to complete program, as mandated by the Florida Department of Law Enforcement (the state governing agency and certifier of police and corrections officers). In our program, the CrossFit benchmarks are required exit exams as well, and these are the instruments we care most about, since they better assess the adaptations that officers actually need for work assignment. We recognize, however, that recruits have widely varied degrees of fitness upon entry into the program, and the benchmarks are designed to allow everyone to participate fully.

We emphasize the very real importance of fitness for saving one's own life and protecting others.

During the training phases, the recruits are exposed to a regimen of CrossFit workouts that we take from the current list of benchmark workouts known as "the girls." We essentially break these down and focus on their components, building smaller exercise cycles that end in the completion of the corresponding full benchmark test. As an example of how we incorporate the benchmark into the phase, we use "Angie" (100 pull-ups, push-ups, sit-ups, and squats, for time) as the first benchmark. This test requires an understanding of mechanics for proper pull-ups, push-ups, sit-ups, and squats. During this phase, we discuss proper structure for each of the benchmark components. In addition, we introduce skills needed for job performance. After instruction and initial exposure, the exercises are repeated in various formats that change up the duration, frequency, and load, or, in some cases, that drill familiarization and skill practice. At the end of this phase, the benchmark is retested. The benchmark for the next phase of training is also introduced, as is the Tabata protocol. Each process is layered over the previous phase, which allows for a constantly varied but progressive theme in the workouts. These phases are structured to provide better detail in the program of instruction and allow for increased intensity and understanding of CrossFit methodology.

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Phase 1 (4 weeks)

Cycle: 2 or 3 days per week, alternating

Exercises and stretches
Samson stretch
Squats
Pop-ups
Overhead close-in stretch
Overhead squat stretch (PVC)
AbMat sit-up
Rollbacks
Push-ups
Pull-ups
Deadlifts
Gymnastics standards: handstand, hollow rock
Body mechanics standards: push-up, pull-up, air squat
Weight mechanics standards: deadlift, front squat, thruster
Metabolic conditioning: 1-mile run, ¼-mile run

Phase 1 equipment

In general, the first round of equipment collection should include obtaining the basic equipment needed to complete Phase 1–style WODs. The goal is to have the needed equipment available for each participant, but working at 1: 3 ratio with the average class size is more than acceptable. This equipment will get you started with a large variety of movements and workouts. Many of the listed items can be readily found, even at the most archaic of facilities (1:1 indicates items we try to supply individually for each participant).

Pull-up bars (1:1)
6-foot lengths of 1-inch PVC pipe (1:1)
Jump ropes (1:1)
30- or 35-pound dumbbells (1:1)
Parallettes
Plyo boxes
Dynamax medicine balls
AbMats

Phase 2 (4 weeks)

Cycle: 2 or 3 days per week, alternating

Gymnastics standards: L-sits, burpees
Body mechanics: jump rope, box jump, sumo deadlift high pull
Weight mechanics: press, push press, overhead squat
Metabolic conditioning: 2-mile run, ½-mile run
Benchmark 3: Tabata squats
Benchmark 4: "Fran" (For time: 21, 15, 9 reps of thrusters and pull-ups)
Recruit Complexes:
Complex 1: pop-up, burpee, rollback, bear crawl or handstand
Complex 2: sit-up, leg lift, hollow rock
Complex 3: overhead squat, sumo deadlift high pull, push-up, med ball high toss, med ball broad jump

Phase 2 additional equipment

Olympic bars
45-lb Olympic-size plates
25-lb rubber bumper plates

Phase 3 (4 weeks)

Cycle: 2 or 3 days per week, alternating

Warm-up: traditional CrossFit warm-up

In Phase 3, we begin to implement the CrossFit WOD, scaled as needed. We also begin to have squad events, and begin using the white board for recordkeeping and competition.

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Sustainability

One component of our programs success has been our willingness to open the doors for others to watch and question. Successful sustainability allows management to see your work and the accompanying documentation. We're always available to answer questions and respond to suggestions when presented. We use several of the better students to show proper form and attitude. The administrative staff is also invited to look at the structure of the program. We offer weekly early-morning, lunchtime, and after-work programs for continued and enhanced learning. Lastly, we use the websites (ours and CrossFit.com) and the posted white board to help provide information and foster esprit de corps.

We have seen raw recruits enter with little or no physical prowess, commit themselves to the program, and later exit as top-tier performers.

The program has also utilized the SWAT team members for feedback and program enhancements where appropriate. This has allowed us to develop more intensive programming suggestions for the more physically capable and those performing at higher levels of physical and mental acuity.

Looking forward: Betterments

As we continue to grow, we are looking for ways to have our own space. The existing gym has slowly allowed us dedicated space, and our equipment requirements are now built into the budget. In order to accomplish this, we tracked our equipment use, class sizes, and student performances. These reports include meal plans, student feedback and testimonials, and instructor profiles, as well as information on the potential for further lectures, training, and certifications. This emphasizes our perspective that teaching is about more than physical performance alone. Forcing students to think is critical. The instructors need to be able to do this as well.

Keys to implementation

When you begin your process of introducing the CrossFit program, be sure to prepare a summary of your ideas and how they relate to functionality. Part of our initial problem was egos and the "us vs. them" mindset. Your summary should include a list of other agencies that use the program and contacts within each of them—a functional reference list, if you will. The contacts should include officers at every level in their respective agencies. Of course, your summary should describe the highlights of your program and explain the fresh perspectives behind your approaches. (Information from the CrossFit "Foundations" and "What Is Fitness?" documents will be helpful.) This summary should also discuss how you will implement the program, the timeframe, and how you will support future training. Finally, the bigger picture in your summary should show how simple an approach to super wellness this is and how the foundations are based on well-grounded, thoughtful, field-tested principles.

An important part of making CrossFit work at your agency is having the right people, with the right attitude and approach in implementing the program. Here are some key concepts that we make sure are understood by everyone involved in implementing the program.

Check your attitude

Often during training, we tend to single out subjects based on our perceptions of their attitudes. "Breaking a student" is a term often used to make a point about the ability of an individual who has either too much or not enough ego. However, a coach is responsible for the needs of a team, and if you single someone out, it must be purposeful, not spiteful or personal. The flip side of assessing ability based on attitude is assessing mental fortitude and character through the physical training itself. Your trainees need to be challenged, but they must also be enabled by the trainers to feel they are capable of accomplishing the goals. The phase system seems to aid in this process and prepare trainees to complete the WODs, if not outright excel in them. If you throw a full WOD at them too early in the process, a percentage will be lost to you. The phase system builds both skills and confidence—and does so incrementally. We have seen raw recruits enter with little or no physical prowess, commit themselves to the program, and later exit as top-tier performers.

Treat the student like an athlete: Pain is part of the game

Performance is directly linked to training. Athletes preparing for game day must be prepared to face all the challenges of their game. Serious athletes know and accept that pain is an unavoidable part of the game, and therefore it is also part of the training. Preparation of a law enforcement officer for winning "game day" performances should include this concept. I don't mean unreasonable or debilitating damage, of course, but realistic physical stress the accompanying discomfort. In the past, students have been trained as if they had no requirements with regard to actual performance, and because of this, sometimes the guy on the bench has had to step in and save the day. The student must understand the differences between discomfort and injury, and be prepared to "push through" the pain to win. Experiencing and tolerating pain in the gym can make a real difference in how they experience and cope with pain and stress on the street. We emphasize the very real importance of fitness for saving one's own life and protecting others.

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Understand the training environment: Keep it functional

Ensure that students understand the mechanics of their environment. Make the training environment and the tools applicable to the "real world" that the students will be working in. This means you will need tools for training a variety of functional movements at high intensity (Not a room full of the latest shiny equipment and individual isolation machines for every individual muscle fiber known to man). Fortunately, even if all you have are a floor, a wall, pull-up bars, or free weights, you have all you really need to get started (see the "Garage Gym" issue [#2] of the CrossFit Journal). Yes there is plenty more you can use to enhance performance, but you can grow with the simplicity of what you have. Once again the phase system aids in this process.

Be consistent

When preparing your students, it is important to have them work at an intensity that will allow them to reap the benefits of CrossFit. The training norm of 70-percent effort may be acceptable for the general population seeking mediocre fitness of the conventional variety, but if your standard of fitness is essentially your people's ability to live and respond in times of crisis, this level of output is not acceptable. You must then rethink your efforts and recalibrate your standards accordingly. The workouts you program should involve all three of the body's metabolic pathways. Ninety percent should primarily involve the first two (phosphagen and glycolytic) metabolic pathways. Remember, the timeframe for these workouts often varies considerably from conventional standards (the old "30 minutes of cardio"). Most workouts will consist of one to six exercises and take approximately ten to thirty minutes for an individual to complete.

It has only just begun

The success we have so far achieved in our local training arena is essentially just the beginning of what we set out to accomplish. The core mission has always been and will continue to be the production of high-caliber functionally fit police officers, irrespective of innate athletic talent, fitness background, or other uncontrollable factors. The CrossFit model has given us the foundation and freedom to accomplish great things with our public-service employees. One must understand these foundations, be prepared to defend them, and then have the willingness and flexibility to flow with the needs of a changing and dynamic profession. Persistence and strong focus on the goal—as well as a set of instructors with a strong understanding of CrossFit principles, a virtually egoless mentality, and the ability to be flexible enough to change as needed—will assist with each step of this process.

CrossFit's creed has always been to "forge elite fitness." As you prepare to design and implement the program at your training center, hold true to this concept. The notion of truly functional fitness is what makes CrossFit the best option for public safety employees. Nothing else is like it. We are all forging the future of fitness at our institutions.

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TJ Cooper is a certified CrossFit trainer, an LEO/mil instructor in the tactical arena, particularly on high-liability topics, a 20-year law enforcement officer (17 on the SWAT unit), and the Basic Law Enforcement Lead Fitness Instructor at the Jacksonville Sheriff's Office. He is the owner of CrossFit East and Control Concepts International; his work at these companies allows him to be humbled regularly by some of the best athletes and shooters in the world.

Both authors exclusively employ CrossFit for individual and group fitness development.

Phil Canto is a state-certified law enforcement instructor in several high-liability areas. He holds a B.A. from the University of South Florida and a Master of Public Administration from the University of North Florida and is a level-3 CrossFit trainer. Phil's research focus lies in the functional applications of fitness and its dynamic relevance in law enforcement, athletics, and lifelong health.

A Large-Group Workout Solution

Michael Rutherford

The group workouts I offer have now taken on a life of their own. I'm frequently pulling in upward of 30 athletes in my 6:00am group. The more I say "Sorry, no more room," the greater the requests become. At the least, this has been an interesting sociology experience.

Before you spit up in your mouth or fly the bird at the page, thinking I'm honking my own coaching horn, let me explain. I tell you this because as this CrossFit culture grows, other trainers and affiliates will be faced with some dilemmas. Your groups will verge on the unmanageable. Trust me, they are coming.

As I have matured in this fitness coaching profession, I've learned that the simplest of movement combinations yield the greatest results. The Rutherford Postulate states, *"As the group increases in size, the complexity of the workout diminishes."* Unless you have associate trainers all around you, or a group of very experienced, well trained, and skilled athletes, it is difficult to coach complicated movements and unwise (and often impractical) to orchestrate a workout that involves five, six, or seven different exercises and/or pieces of equipment. For me, the dumbbell continues to be the tool of choice for these kinds of groups.

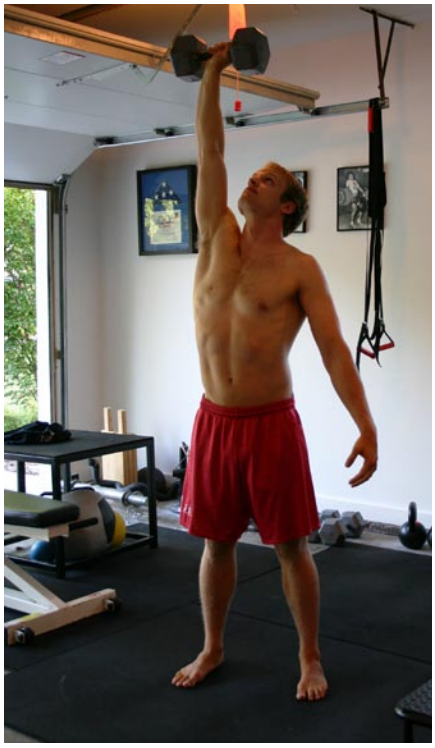
This month I provide a super-simple yet potent example of a dumbbell couplet that works great with large groups and in limited space. It also works with a wide variety of fitness levels and will be accessible to much of the masses. You can use it effectively, for example, with the neophyte as well as the longtime-CrossFitting Army Ranger. (I say this because this exact scenario presented itself at my place one morning.)

In the lexicon of CrossFit templates, this workout is a combination of a weightlifting exercise and a simple gymnastics movement: the dumbbell get-up and the push-up. Ouch, you say?

The get-up movement has been presented multiple times in this Journal, with a variety of tools (dumbbell, barbell, kettlebell, small child, etc.). I'll keep it brief as not to insult your intelligence. Remember, simple is important with a large group. You can't make it too difficult to follow or they will be lost, frustrated, and, most likely, only short-term participants.

Here is how I coach it in 60 seconds:

1. Get on your back with the dumbbell extended straight up in one arm.
2. At all times keep your eye on the dumbbell, with the arm extended vertically, meaning *toward the ceiling,* at all times. (When you can, coach the heck out of this aspect. All the other elements seem to fall into place when they keep an eye on the dumbbell and the arm stiff as a clothesline.)
3. Roll to the opposite side using that arm for assistance.
4. Pull the legs and feet underneath you as you move into a position to squat the weight up and stand on your feet.
5. Reverse the movement to return to the starting position, lying on your floor with the dumbbell pressed above you.



A Large-Group Workout Solution

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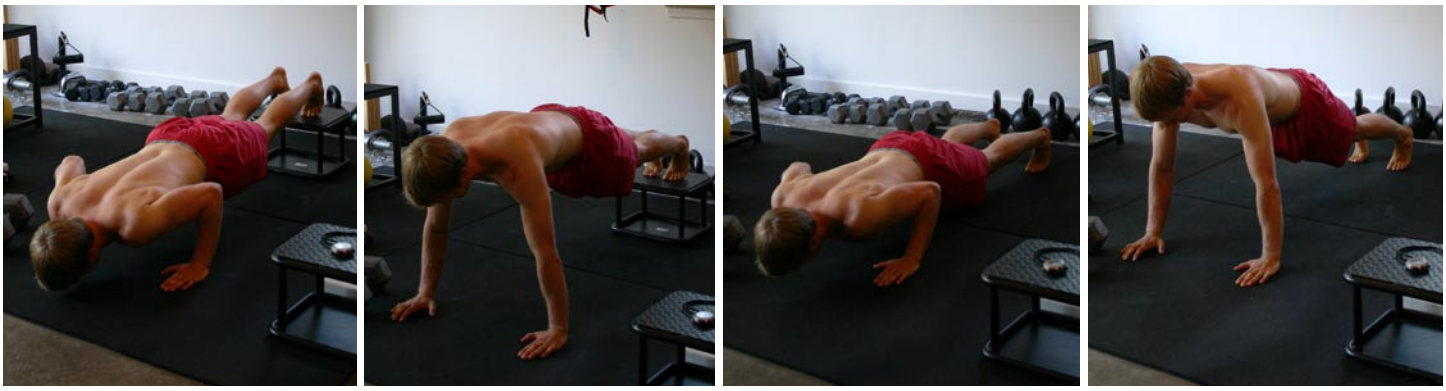

Now, I am demonstrating this movement as I coach it. If I have an able participant I will pull them to the front of the coach to demonstrate for me.

I will typically assign a rep range of about five per arm, as this generally hits the center of the bell curve for participants in the class. I set the upper load limit at about 25 percent of body weight for most people. Since biomechanics are paramount, one of the technique points I emphasize and try to enforce early on is that the arm is staying straight and vertical. Some athletes will struggle with this no matter what the weight. And, for some, immobility from lack of use or injury history just won't permit a straight arm in certain planes.

At the conclusion of the get-ups, the athletes perform 10 push-ups. All the usual requirements of good technique for push-ups and their variants (e.g., knee push-ups) apply.

When I'm dealing the masses, I will typically write this as a time-oriented workout, which allows the newbies to get comfortable with the workout without the pressure of hitting a number against the studs. It also automatically scales the volume of work to the individuals' abilities and keeps everyone to the same time domain for the workout—so you don't have some people struggling to finish a task-oriented workout long after others are done and sitting around. I'd do something on the order of "how many rounds of 10 get-ups and 10 push-ups can you complete in 20 minutes?"

If you have firebreathers in the group, you can modify their push-ups by elevating the feet or advancing them to handstand push-ups, as well as increasing the dumbbell weight for the get-ups.

On occasion, you will have an athlete with physical limitations that will make full get-ups impossible or painful. In these instances, you can have them perform the half get-up. Have them stop as they elevate the shoulder and sit up and then return to the supine position. These folks may well need modified push-ups too. This achieved by pivoting on the knees rather than the toes. A straight spine position ("plank") is still the rule.

If you are running short on dumbbells, you can partner up the participants for a team challenge, where one does push-ups while the other does get-ups. The pair completing the greatest number of rounds in 20 minutes is declared the champions of the day.

However you want to slice it up or modify this workout, your participants will enjoy the session while getting a good dose of functional exercise.

Michael Rutherford (a.k.a. Coach Rut, a.k.a "the Dumbbell Coach") is the owner of CrossFit Kansas City/ Boot Camp Fitness. He has over a quarter-century of fitness coaching experience with athletes of all ages. He has also worked in hospital wellness environments and rehabilitation clinics. Rut holds academic degrees in biology, physical education, and exercise physiology and sports biomechanics. He is a USAW-certified Club Coach and is a CrossFit level-3 trainer. You can learn more dumbbell exercises from his three-volume DVD set *Dumbbell Moves*.

Basically Barbells

The CrossFit Basic Barbell Certification Seminar

"CCT Joey"

A great American and patriot once said, "There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we don't know. But there are also unknown unknowns. There are things we don't know we don't know."

As I entered CrossFit San Diego to attend a CrossFit Basic Barbell Certification seminar, I knew what I knew, I knew some things I didn't know, but I really had no idea what I didn't know I didn't know. So much so, it was startling.

The Basic Barbell Certification is a rather new arrow in the ever-growing quiver of CrossFit knowledge imparted in seminar format. Enter Mark Rippetoe and Lon Kilgore from stage right. I could go on and on about Coach Rip and his ability to teach the lifts and work a crowd, but you probably know that. I could go on and on about how Professor Kilgore is a walking almanac of strength training facts and figures, but unless you just walked out of a forest, you probably already know that as well. Both have a list credentials I cannot begin to cover (perhaps the most immediately relevant, though, being their authorship of the books *Starting Strength* and *Practical Programming for Strength Training*). This certification is another offering by CrossFit to give you what you need to get better in those things "best in life."

And this is about life. The most important thing in life, as Rip is always saying, is physical strength. The rest is gravy. In answer to the question "What is best in life?" Conan the Barbarian said it best, "To crush your enemies, see them driven before you, and to hear the lamentation of the women!" Conan was clearly a genius of a man, who thought through second- and third-order effects. To do what he recommends takes strength. Easy enough for Conan, but not so much for many people in this world. Do you think Stephen Hawking would rather study black holes or walk to work? That may sound cruel to some and funny to others; however, it is neither. It is reality. Black holes and their effect on light particles mean jack squat to a weak, old woman who is stuck on the toilet without a handrail.

So, I must strive to impart what you will learn, unlearn, relearn, learn the hard way, learn to accept, and learn to teach. The last in the list is key.

Learn

We will begin with the learning. The basis of the entire seminar revolves around five key lifts: squat, deadlift, bench press, press, and power clean. This is about barbells, not kettlebells, clubbells, dumbbells, or Hell's Bells (though I do have AC/DC playing in the background at the moment). Barbells are the very basic and best device for developing pure strength. With their almost limitless ability to scale up or down in weight, you can use them with the time-proven best exercises to ensure you can move you and your stuff for the rest of your life. To teach this stuff, Coach Rippetoe will be doing a lot of talking and it is well worth listening to closely; just don't expect to be sitting down much or talking pure theory. Eighty percent of the learning at this certification takes place on your feet with a barbell in hand, or watching and cueing another person with a barbell. You will be placed into groups of 4 to 5 people of similar strength levels for a particular lift at a platform. Expect to work technique with light weight and then build up to a few heavy sets for each exercise, and to coach others to do the same.

Basically Barbells

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The rest of this article is about the process of learning as you begin to be able to recognize the fundamentals of proper movement in yourself and others. Half of this battle is having the will to let go of your preconceived notions of what "right" is supposed to look like.

Unlearn and relearn

First out of the hopper is unlearning. Unlearning seems counterintuitive. Why not just learn new information over the other stuff? I don't know, but for that matter, why can't I just plug in to the matrix and have some guy dressed as a street person sitting behind a computer "download" all this stuff directly into my skull? (Actually, Tony Budding and Brian Mulvaney from HQ are already working on that...) For now though, it does not work that way. You are going to feel all-over confusion as your mental picture, the verbal cues, and the actual physical movements you perform and witness fail to resemble one another. The way you apply your particular physical structure to move the weight will be tweaked to the point that you will say to yourself, "Are they serious?" They will be serious, and they will be right, or they will see what they needed to see to make another correction in your technique.

Stay with me now. As an example, here is how things might go on the first heavy set of squats.

Rep 1: You will have an epiphany (a five-dollar word for "the lightbulb came on") and it will probably happen under the load of a barbell. You will realize that you have already heard or read about this at the precise moment you lock out the weight far easier than you are used to. This is "relearning" slipping into the mix. It is sneaky that way, and it might make you think you are suffering from exercise-induced Alzheimer's.

Rep 2: Get ready to screw it up again, as you have forgotten, in your excitement, how to unlearn what you taught yourself lifting in front of a mirror at the local YMCA.

Rep 3: Wait! He said "Heels!" That means to keep the combined center of gravity of your body and the barbell over the mid-foot, thus keeping the heels of your feet on the floor. This or another properly placed cue will help you lift properly. Amazing—you just got done with rep #3 and you are 2 for 1.

Do you think you will curb your enthusiasm and get reps #4 and #5 right? Unlearning and relearning are at each other's throats. So it goes, for several sets of the five exercises and several flaws in your technique. Somewhere along the way, you give up on lifting heavy and refocus on just lifting properly with the weight you have. That way, maybe the next time you show up you can slightly increase the weight and do it right again. Ah, yes, it's called *progress*.

Online Video
CrossFit Basic Barbell Certification Seminar pt.1
http://media.crossfit.com/cf-video/CrossFit_RipPressInstruction1.wmv
http://media.crossfit.com/cf-video/CrossFit_RipPressInstruction1.mov

Online Video
CrossFit Basic Barbell Certification Seminar pt.2
http://media.crossfit.com/cf-video/CrossFit_RipPressInstruction2.wmv
http://media.crossfit.com/cf-video/CrossFit_RipPressInstruction2.mov

Basically Barbells

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Learn the hard way

This, of course, brings us around to learning the hard way. This is something I excel at. Learning the hard way is a syndrome that typically affects the male of the species when other males are around. It gets worse if you throw in some (but disproportionately few) attractive females. The worst of the worst is a guy like me who needs to prove something to himself. (Normally, a chiropractor gets involved at this point.) The "hard way" approach is a completely voluntary step in the process, not part of the formal instruction plan, and it is preached against at the Basic Barbell Certification. However, if you must learn the hard way, it might well be allowed in order to teach the other attendees what silliness looks like and how to deal with it. (Not that I would know from personal experience or anything.) This reminds me of another point. At the end of each exercise, each attendee will demonstrate, for the group to critique, how to do the lift for a heavy set. Grow some thick skin for this, as 25 people will nitpick your form to the nth degree as they and you learn to recognize, prioritize, and correct flaws in your mechanics.

Learn to accept

Learning to accept is your next step in personal growth through the medium of barbells at the Rippetoe and Kilgore School for the Strength Challenged. Your body has its own specific angles created by your joints and by the lengths of the limbs that meet to create the joints, coupled with how and where your muscles attach to them… lever arms…efficiency of movement…throughout the ver-ti-cal plane…zz….zzz….zzzz—

Wake up!!

Look, this is easy. The point is: Everyone is different. I am not talking about that cultural diversity stuff. I am talking about how your physical proportions relate to how you move the barbell. Example: I have long femurs in relation to my lower legs. That means my back will be near horizontal at the beginning of a deadlift in order to get the lifting mechanics right—extended back, flat feel, shoulder blades over the bar. No amount of squirming or contorting is going to change that if I want to pick up the Conan-worthy weights. These same proportions mean that I can lift significantly more weight in a low-bar squat than in a high-bar squat because I am not straining my lower back to try, unnecessarily, to stay up-right. However, without accepting this way of thinking about things, I would still be trying sit upright at the start of my deadlifts and doing good mornings at the end of my heavy high-bar squats. And I would still be lifting way below my potential. I had to learn to accept that I am not built like the compact Brett Marshall. Accepting your proportions puts you on the fast track to lifting more, as you quickly come to understand your biomechanical strengths and weaknesses. This is a primary focus of the seminar and is continually pointed out in a variety of contexts. One size does not fit all—and one set of predetermined angles does not fit all bodies.

Learn to teach

In the hope that I still have at least half of the readers' attention after describing how long my femurs are, I transition to the other primary point of the seminar: Learn how to teach. Anyone can bark out pre-fab cues all day, every day, and even actually make some headway with some trainees. However, the more effectively and efficiently a trainer or coach can impart the information he understands to the person lifting the bar, the more effective the process is.

The seminar ensures that you understand how to teach by making you demonstrate these techniques on the other attendees. You will learn how and when to cue a trainee. You will learn how to look at a trainee's proportions and ensure they are putting those proportions in the correct alignment in order to move effectively under load. You will learn how to deal with common problems. (One of the memorable things I learned from Rip is that a lack of the proper use of yelling has contributed to much of the silliness found in the modern gym). Sensitivity be damned.

The Basic Barbell Certification is as much about how to coach the lifts as it is about how to do them. Rippetoe and Kilgore, along with a host of senior CrossFit coaches and trainers, will be in your mug making sure you get it right in your lifting and in your coaching. After all, isn't this why you would come to a certification? If you could read a book and get it as quickly and accurately (and while having as much fun), then exercise scientists would all make good coaches, and we could learn this stuff just as well from the comfort of our La-Z-Boys with a good reading lamp. Alas, it ain't so. Good, solid hands-on learning makes for good, solid hands-on coaching. The kind of coaching that will both help the older woman grow strong enough to be able to get off the toilet without a handrail and thus remain independent, and also enable our warriors to "crush their enemies, see them driven before them, and to hear the lamentation of the women!" After all, isn't this what is "best in life"?

"CCTJoey" is a member of the United States Air Force and a Level-2 CrossFit Trainer.

Close Quarter Form

(Video Article)

Tom Arcuri

Tom Arcuri of Blauer Tactical Systems presents the Close Quarter Form (CQF), a sequence of moves that drills a set of biomechanically efficient and effective close-quarter combat tactics. It is part of their S.P.E.A.R. system, which teaches that the most efficient, effective moves you can use in a fight—and in training—are ones that leverage the body's natural, instinctual, unavoidable behaviors (such as the flinch reflex, for example) and convert them into efficient protective and combative tactics.

The problem with a lot of martial arts and/or self-defense training is that it doesn't mimic the conditions of a real fight. The CQF is specifically designed to assist in visualization, muscle-memory, balance, target selection, and tactical flow—tools you can use in actual confrontations. Each move in the drill is a response to some aspect of a real fight. As a drill it is performed in a specific order not because a real fight would follow this sequence, but simply for conditioning and patterning purposes. Practicing the CQF helps prepare you to respond to an ambush or the rapidly changing elements of a fight as effectively as possible.

Online Video Article

Video Article (13:17)

http://media.crossfit.com/cf-video/CrossFit_JournalBlauerCQF.wmv

http://media.crossfit.com/cf-video/CrossFit_JournalBlauerCQF.mov

Human Weapon System

(Video Article)

Robert Smith, M.D.

Robert Smith is an M.D. and the medical director of Direct Action Medical Network, a group of physicians providing medical training and support to organizations that work in high-risk, remote, and/or austere areas. In this video, he talks about the tactical and safety benefits that people working in such environments can gain from understanding the body as a human weapon system. There are significant advantages of training the whole human body in ways that engage natural abilities and hard-wired instincts, and these techniques are underutilized in most kinds of combat training. Thinking of the body as a human weapon system is about integrating medical and physiological knowledge into combative wisdom. It's about having faith in our physiology.

Online Video Article

Video Article (14:53)

http://media.crossfit.com/cf-video/CrossFit_JournalDocSmithSep07.wmv

http://media.crossfit.com/cf-video/CrossFit_JournalDocSmithSep07.mov

In any combat system, your equipment has to be properly tuned, and in this case, the equipment is the body. Tuning it means being prepared to utilize it optimally—being trained and conditioned to handle the unexpected, physically and mentally. You have to train the way you're going to fight: with intensity, and in accordance with the body's natural functions of perception, reaction, and response. The relevance to martial arts, self-defense, and athletics is obvious.

Assistance Sequence for the Snatch

Mike Burgener, with Tony Budding

Over the past twelve months, we've described a complete set of progressions and skill transfer exercises for teaching and developing the snatch and clean and jerk. They can be used in order to learn the movements, or they can be used at any point in an athlete's progress to refine a skill or strengthen a weakness. In this and the following months, we'll talk about specific issues lifters often face and how to use and combine some of the moves we've discussed to help resolve those issues.

This month, we describe a sequence that helps address one of the most vexing issues for many athletes: strength and stability in the receiving position of the full snatch (i.e., squat snatch). Most athletes—and CrossFitters especially—have greater trouble with receiving the barbell in the bottom of the overhead squat than they do with generating the necessary momentum and elevation on the barbell to get it up overhead. In other words, most CrossFitters miss max effort snatches not because the bar didn't get high enough, but because they didn't get under the bar successfully. The following series of movements is extremely effective for developing the strength, stability, speed, and confidence to snatch heavy weights.

The sequence is muscle snatch + overhead squat + snatch balance + Sots press. All these movements have been described in detail in previous articles. The muscle snatch is an upper-body strengthening exercise that trains the athlete both to keep the barbell close to the body and to move aggressively under the bar and engage the upper body to speed the descent. The overhead squat is a full-body strengthening exercise with an emphasis on midline stability, and it trains the drive up out of the hole to complete the lift. The snatch balance develops speed and stability in the receiving position. And the Sots press is an upper-body strengthening and flexibility exercise that develops stability and comfort in the bottom position.

This sequence can be done as a warm-up with a dowel or PVC pipe. Weight should be added gradually. The most basic version of the sequence is to do one rep of each of the four exercises (as shown in the videos). After warming up, start with a weight at which you can comfortably do three sequences of one rep each. So, one sequence is:

1. Muscle snatch, 1 rep
2. Overhead squat, 1 rep
3. Snatch balance, 1 rep
4. Sots press, 1 rep

Repeat that sequence three times to make up once set. Repeat the entire set for three to five more sets, resting between sets. Add a little weight at each set and reduce the number of sequences within each set if necessary. This sequence can be done at the beginning of a training session as an extended warm-up, or at the end as skill development.

Online Video

Assistance Sequence - 45 lbs

http://media.crossfit.com/cf-video/CrossFit_JournalBurg45lbsSep07.wmv

http://media.crossfit.com/cf-video/CrossFit_JournalBurg45lbsSep07.mov

Assistance Sequence for the Snatch

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You can customize the rep scheme within each sequence to focus on particular weaknesses. If the athlete is plenty strong but is slow and/or shaky in the third pull, you can bump up the reps of the snatch balance to three to five. If the athlete has flexibility issues or is weak or unstable in the bottom position, increasing the reps on the Sots press will demand improvement (again, starting with light weights). If the athlete is quick but lacks overall strength, the reps of the overhead squat can be boosted. The sequence can also be done without the Sots press if the athlete's bottom position is stronger than his pulls (though this is rarely the case for CrossFitters, and it shouldn't be skipped just because you don't like it).

For example, there was a 77-kg-class male lifter at Mike's Gym recently who power snatches 90 kg but can only snatch 95. Why? Bottom weakness. No stability. And no strength in the top position. His pull was awesome , but he just did not know how to push up on the bar. So he did a muscle snatch + overhead squat + Sots press sequence, with a good 70 kg. By the time he left, he had snatched a new PR of 100. For him, it was all about learning how to how to push up on the bar.

In contrast, let's take a look at a lifter like my daughter Sage. She can muscle snatch OK—not great, but OK. But she can snatch balance 80 kg! (As a teenage female 63-kg lifter, no less!) It's not her overhead strength that's her limitation; it's her pull and her turnover at the top. For her I prescribe a sequence of muscle snatch + overhead squat + snatch balance. She doesn't need to do Sots presses as much. I want her to put that energy into improving her pulling strength. Use the exercises you can to improve the weaknesses you see.

Online Video

Assistance Sequence - 115 lbs

http://media.crossfit.com/cf-video/CrossFit_JournalBurg115lbsSep07.wmv

http://media.crossfit.com/cf-video/CrossFit_JournalBurg115lbsSep07.mov

Mike Burgener is the owner of *Mike's Gym* (a CrossFit affiliate and USAW Regional Training Center), is a USAW Senior International Coach, former junior World team (1996-2004) and senior World team (2005) coach, and strength and conditioning coach at Rancho Buena Vista High School in Vista, Calif.

Tony Budding is the Media Guy for CrossFit, Inc., and a trainer at *CrossFit Santa Cruz*.

Sokoudjou's Inside Trip

Becca Borawski

A fighter out of Dan Henderson's Team Quest camp, Rameau Thierry Sokoudjou was the undoubted underdog going into his February 2007 Pride fight against Antonio Rogerio Nogueira, little brother of the famed heavyweight Antonio Rodrigo Nogueira. Sokoudjou was unknown to most of the MMA world and had a 2-1 record in small shows. Not only did Sokoudjou surprise fans and critics everywhere by knocking Nogueira out, but he repeated the same feat two months later against the powerful Brazilian fighter, Ricardo Arona, cementing his place in the limelight of the MMA world.

Despite his two stunning knockout wins, Sokoudjou's background is in judo. Originally from Cameroon, Sokoudjou moved to the United States in 2001 at the age of seventeen, and proceeded to win the open-weight division of the US Open Judo Championships that same year. When visa problems prevented Sokoudjou from returning to Cameroon to compete in the 2004 Olympic Trials for his country, he instead chose to pursue mixed martial arts.

For this month's article, we go back to Sokoudjou's roots as he shows us an inside trip takedown, demonstrated on his training partner, Xande Ribeiro. In the photos, Sokoudjou is the one in blue, with the longer hair.

This particular takedown is a move Sokoudjou executes when his opponent winds up pushed against the fence (or ropes). In this scenario, Sokoudjou and Xande are locked together with their upper bodies, in the "over under" position. Sokoudjou's left arm is over Xande's right, pinning it down, and his right arm is going underneath Xande's left armpit. His hands join behind Xande's back in a tight grip. Sokoudjou's head is tight against Xande's right shoulder.

If Sokoudjou pulls on Xande's body, Xande will resist by leaning back against the fence and lowering his base. By "base," we are referring to a fighter's center of bodyweight and in essence, his balance. It is evident in the first photo that Xande has pushed his butt back and down against the wall to counter Sokoudjou's attempts to move him (photo 1).

In this scenario, Sokoudjou chooses to keep his opponent against the fence and go for an inside trip. First Sokoudjou is going to take his right leg and hook it inside Xande's left (photo 2). As he does this, he will turn his body and hips out the opposite direction. This extends his reach with his right leg and also gives him a wider angle to turn back in towards Xande.


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Sokoudjou's Inside Trip

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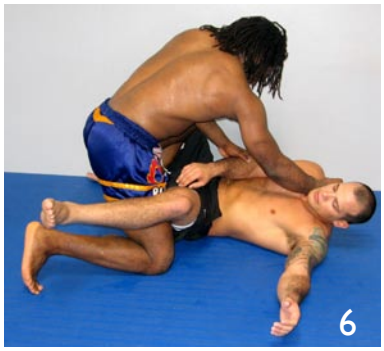

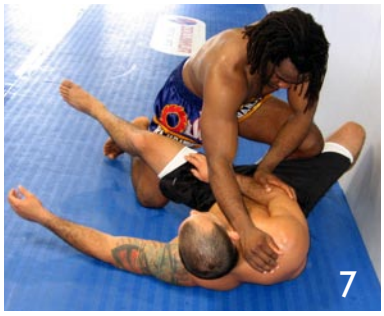

After he has hooked Xande's foot, Sokoudjou begins to turn back to the right. His body turns in a circular movement, his foot pulling Xande's leg away from the wall (cage), and his upper body pulling Xande's shoulders off the cage. Sokoudjou is pulling with his right foot against Xande's leg and pushing with his upper body against Xande's right shoulder (photo 3 & 4).

Once Sokoudjou successfully turns Xande away from the wall, Xande can no longer retain his balance because his weight is pushed back, but his feet are no longer underneath him and he does not have the cage as support (photo 5). Xande will fall to the ground and Sokoudjou will land in the dominant top position.

Against someone like Xande, who is an accomplished jiu-jitsu practitioner, this could be a dangerous position to be in. Sokoudjou has already taken precautions, however, and has his left knee up against Xande's inner right thigh, to prevent Xande from locking him in his guard. From here, Sokoudjou can begin executing his own ground and pound or submission strategy (photo 6 & 7).

While Sokoudjou is best known for his upset knockout victories over Nogueira and Arona, he is in fact a well-rounded fighter with world-class grappling skills and high-level competition experience. Sokoudjou is no longer fighting for the defunct Pride Fighting Championships organization and has been entertaining offers from a few different organizations in the United States.

In the meantime, to see Sokoudjou in MMA action, watch his Pride fights:
Pride 34 – Sokoudjou vs. Ricardo Arona
Pride 33 – Sokoudjou vs. Antonio Rogerio Nogueira

To see Sokoudjou's judo, check out this match between him and Karo Parisyan: http://youtube.com/watch?v=Ze0a027K38s

Becca Borawski, CSCS, teaches and trains at *Petranek Fitness/CrossFit Los Angeles* in Santa Monica. She has a master's degree in film from the University of Southern California and a background in martial arts training. She has blended these skills to produce DVDs and build websites for professional fighters. She currently trains Brazilian Jiu-Jitsu with Rey Diogo, a Carlson Gracie affiliate.

Ring Row Variations

Tyler Hass

In my last article (issue 58), I discussed the ring row. It is an excellent horizontal pulling exercise and great for correcting muscle imbalances common in a lot of lifters. This month, I have some fun variations on the ring row for you. They incorporate variations on the basic movement pattern, and some also require more stabilization across the body and rotational strength.

Reverse row

This variation on the row targets an unusual movement pattern. In this variation, you will start in the usual position at an angle under the rings, with your arms fully extended, your heels on the ground, and your body held in a tight plank. Row the rings back behind your head with your palms facing your head. The movement pattern is similar to throwing a ball backwards.

Extended reverse row

The extended reverse row is similar to the regular reverse row, except you perform it with your arms kept straight throughout the movement. It is a good assistance exercise for learning how to swing on rings. It also taxes the posterior chain from top to bottom and can help to improve overhead stability in overhead squats. Most people are by far the weakest pressing backwards in the overhead position.

Ring Row Variations

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Chainsaw row

This variation of the row involves holding a single ring vertically, with your hands side by side on the ring, palms facing one another, also called a mixed grip. In this variation, you will bend your arms to pull your chest up toward the ring and then rotate one shoulder up to the top of the ring, pulling your torso around and rotating your hand above the ring.

This is a pretty challenging exercise, so feel free to elevate the ring and perform it at a more upright body angle. These can provide some challenge even when you're nearly in a standing position. The cool thing about this exercise is that you get to train rotational strength in a functional manner.

One-arm ring row

The one-arm ring row doesn't require much explanation since it's essentially the same as regular ring row, performed with just one arm. However, the one-arm version does have a greater range of motion. Your body does not have to be parallel to the ground at all times. In fact, letting your non-working shoulder drop a bit at the start and rise above the ring at the finish makes additional demands on both the working shoulder and, especially, all the torso stabilizers.

Tyler Hass is the founder of ringtraining.com and the designer and producer of Elite Rings. His company is dedicated to spreading gymnastics into the broader fitness world. He can be reached at info@ringtraining.com.

Strong Enough?

Mark Rippetoe

It's been a hard year here at Wichita Falls Athletic Club. We've lost a couple of very worthwhile folks since last summer, and another good friend of mine died recently. Cardell was 45 when he was diagnosed with an ascending aortic aneurism that possibly involved the aortic valve. He was prepared for a complicated, dangerous operation, but sepsis developed almost immediately after the surgery, and he died as a result of complications from the infection. The reason I mention this rather unhappy personal item is that it took him three and a half weeks to die. That's a long time in the ICU, and he lasted that long because he was very, very strong. Cardell completely ruptured his patellar tendon at work a couple of years ago, a devastating injury that could easily have left him crippled for life. But he was strong, and five months after the surgery he squatted 315 pounds for 5 reps to our standards here at the gym (i.e., with full range). Strong people are harder to kill than weak people, and more useful in general. While we're on the subject, our condolences go to the family and friends of Jesse Marunde, who will be missed as well.

Strength is the ability to produce force, and it is possibly the most important component in athletics. It is dependent on muscle mass, on the nerves that make the muscles fire, and on the will that fires the nerves. Power depends on it, as does balance, coordination, speed, quickness, and endurance. Athletes will risk censure and suspension to get it; there are no steroids for improving "technique." And once they have it, they are much harder to beat: all other things being equal, the stronger athlete will always win.

Technical ability is the capacity to execute a movement efficiently—completing the movement while using the least possible energy. It is the ability to adhere very closely to an efficient motor pathway in a consistent manner. As such, it can also be defined as the ability to demonstrate the strength available to complete a given athletic task, since in its absence even great strength cannot be displayed in that movement. In this sense, strength is dependent on technical ability, even though strength is the quantity we most often seek to measure: the shot is *thrown* for distance, the bar is *lifted* for the most weight, the ball is *hit* over the fence, the lineman *tackles* the fullback hard enough to stop him. These are more obvious examples of strength display, but all sports worthy of the name depend on force production within the context of correct technical execution.

Yet there are a number of competitive sports with athletes and coaches who think strength is not a terribly critical component of performance. Sports like swimming, fencing, cycling, soccer, cricket, tennis, boxing, and hockey pay lip service at some minimal level to strength training, but it is not a major part of most athletes' preparation for competition in those sports, and barbells are not a significant component of what little strength work there is. Even rugby, with its reputation as a big man's sport, has no organized school of thought on how to incorporate strength training. There will be isolated examples of individual athletes who utilize strength training to a greater extent than their peers, of course, and these people will usually be dominant in their sport—in part because of the training, and in part because of the motivation level of an athlete who actively seeks to prepare for excellence outside the normal realm of training and outside the actual field of play.

> *If your weightlifting team is good enough that you don't have to worry about making them stronger, that's wonderful, but if it isn't, you'd better do something about it.*

The amazing thing is that the sport of weightlifting is one of these. There is a school of thought—in the United States especially—that holds that training for correct technique in the snatch and the clean and jerk is more important than training for strength. Now that I've brought it up, the guilty will deny it. But I know what is being done to train our country's weightlifters at the highest levels—lots of us know—and it's not what you would call strength training. Athletes who go for extended periods of time without being asked to do a PR back squat or press, or any kind of heavy deadlift at all, are not being trained for strength in the usual sense of the term. And if you are one of those folks who are prone to dismiss anyone not directly involved with the National Program as not entitled to an opinion, you might as well stop right here. My opinion can be evaluated independently of my credentials, and if you are capable of doing that, you have my permission to continue reading.

The case against a major role for strength training in technique-dependent sports is not always stated this way exactly. It may be claimed that time spent getting strong could be more productively spent improving technique; I think this is true only for athletes with bad technique. It also depends on the nature of the sport, as we'll see later. Or it may be claimed that technique contributes more to performance than strength, which might be true for golf and a few other games and activities but is not true for athletics. A golf club's business end is not very heavy, and the accuracy with which it is directed is much more critical than the small amount of force necessary to accelerate it around the body during the swing. (As an aside, Gary Player just announced that At Least One Pro Golfer That He Knows Of has taken steroids, and that random drug testing must begin immediately in the PGA to stave off the decay that now haunts Major League Baseball. This renders me astonished, puzzled, and amused. A large number of PGA professionals who win lots of money are fat chain-smokers. There is even a local golfer here in Wichita Falls who shoots in the 70s and will damn sure take your money, despite the fact that he is 72, smokes, drinks more than I do, and has a prosthetic leg. What in

Strong Enough?

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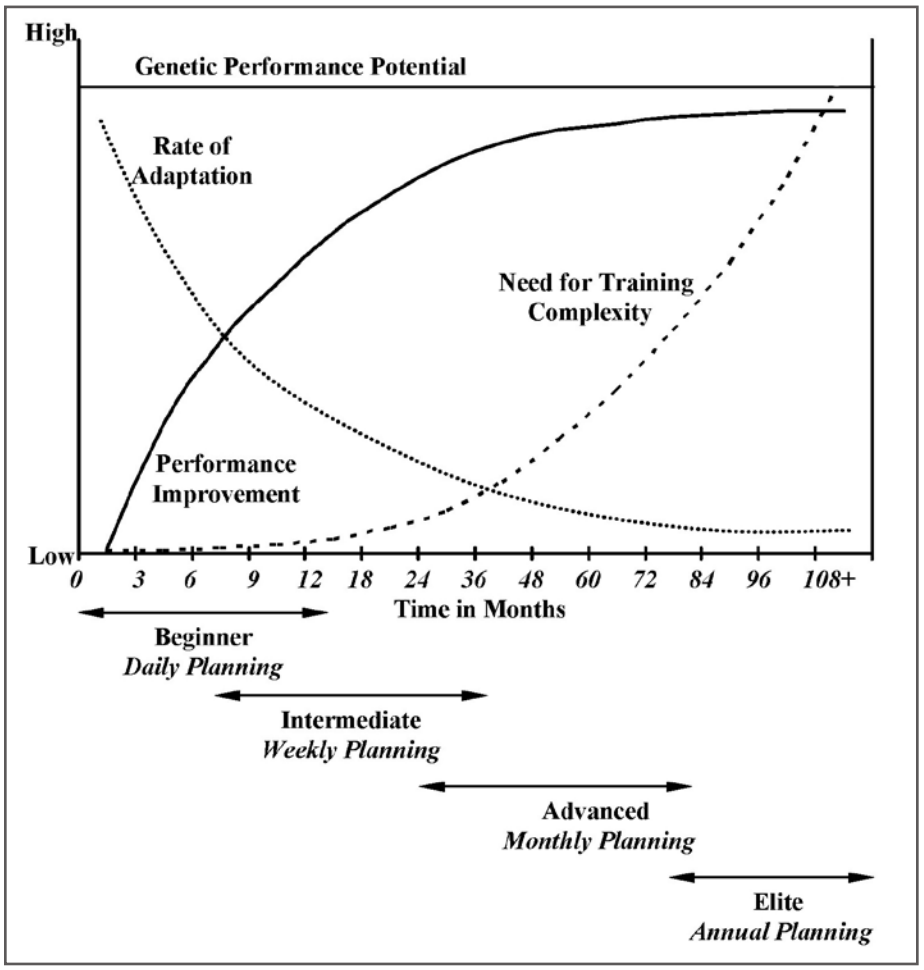
the hell are these other guys wasting money on steroids for? I suspect that it has nothing to do with the actual game of golf.)

The case for strength training is a simple one. Both strength and technical ability are developable quantities that respond to a correctly designed program to make them improve. We refer to strength work as "training" and technique work as "practice." Both produce improvement in roughly the same way: easy at first, harder as you get better, and after you're really good, more improvement becomes more and more difficult—then finally impossible—to obtain. It is said to approach a "limit," a point past which further improvement cannot occur. This concept as it applies to strength is illustrated in Figure 1. A limit is the result of the fact that nothing can continue to improve infinitely or indefinitely. That's why new world records are not set daily in every sport. As a broad, probably overly-general rule, order in all systems increases only with the addition of energy, or "work"; entropy is the tendency of all systems toward disorder without the addition of work to combat all this heinous disorder, an observation derived from the second law of thermodynamics. To put it in another probably overly generalized way, there reaches a point at which the addition of an infinite amount of energy to a system results in an infinitely small increase in order. Order is what we mean when we say "improvement." And that, my friends, is just how the Universe operates.



The generalized relationship between performance improvement and training complexity relative to time. Note that the rate of adaptation to training slows over a training career.

The graphic representation of the approach to a limit is described as an "asymptote," a term from mathematics that describes the shape of the possible improvement curve as it approaches its limit. The limit of the ability to improve strength is ultimately controlled by an individual's genetics, as has been widely recognized. The closeness to which that limit is approached is determined by the ability to train in the most productive possible way, itself limited by time, resources, and motivation. Technical ability is limited as well, by the capacity to express mechanical efficiency. This ability is also controlled by the genetics governing neuromuscular efficiency, intelligence, sensory acuity, balance, and coordination; the closeness to which this limit is approached is a function of *practice*—its quality and quantity. In reality, these asymptotic curves get pretty wavy as they approach their limits, the result of injuries, forced layoffs, lapses in motivation, and all the other things that interrupt progress and keep the names of most great natural athletes from becoming household words. But if you pull back far enough to see the bigger picture, the curve approaches the limit smoothly, and then falls away as the career winds down.

All this should be fairly obvious, so the real question is this: What is the relationship between strength and its ability to be expressed through correct technique? Strength and technical ability are interdependent quantities. One does not exist without the other being present at some level. But it has been my experience as a coach that technique develops much faster than strength. Within six months of learning the snatch, any novice who has the potential to be a competitive weightlifter can do an essentially perfect snatch with, say, 30 kg, and two years later that same lifter will be snatching 100 kg with just about the same technique. The quantity that has continued to improve is strength, not technical ability. An argument can be made that technical ability must keep pace with strength, but technical ability on the snatch must remain at a level that allows the snatch to actually be performed, or you're not snatching, you're dropping the bar from overhead with a wide grip. As you improve your snatch (i.e., move greater weight), you are getting stronger with the same technical ability, so which quantity is actually improving? Both maybe, but strength certainly. In fact, the improvement in a weightlifter's snatch over a career looks quite similar to that of a powerlifter's squat, bench, or deadlift—movements that require only a small percentage of the technical skill required to perform a snatch.

Strong Enough?

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A common argument is that some lifters are able to convert a very high percentage of their strength into the technical execution of the snatch and the clean and jerk, and that since this is the case, strength per se is not the limiting quantity. It seems to me that since strength and technical ability are interdependent quantities, there is a ratio between any individual's ability to produce a correct technical effort and a given level of strength. There are exceptionally "efficient" lifters, like Yuri Zakharevich, Anatoli Pisarenko, and Jeff Michaels, who can do a clean and jerk with a weight that is just short of their best front squat. The reason we remember who they are is because they are the exceptions. Most lifters need a margin of strength over and above their ability to execute technically so that the minute imperfections that are always present in even a nearly perfect snatch do not significantly affect the lifter's ability to finish the lift. No snatch is 100% mechanically perfect, and if sufficient strength is available it is possible to save what would otherwise be a miss by wrestling it back or forward or up as needed; in this way, enough strength makes perfect technique slightly less critical.

But these exceptional lifters still demonstrate the phenomenon of the ratio between a lifter's strength and his ability to demonstrate that strength in a technically demanding movement. This ratio may even change over time, as the athlete ages; a close ratio may be a feature of younger lifters more commonly, and most of the ones I know of in this situation are in fact young. It also varies with the conditions under which each type of max effort—squatting strength and snatch technique—is measured. If, for reasons of training schedule, strength is at peak and technical practice is not, the ratio will be different than it would be the week before a meet. But some lifters will always be more efficient than others, and that is a perfectly reasonable thing to expect. And since this ratio exists, the more easily improved quantity in the equation will drive up the value of the sum if it is increased. Those lifters who are able to clean a very high percentage of their deadlift are either very technically efficient, or not very strong, depending on your prejudice. Most lifters clean a lower—rather than higher—percentage of their deadlift, but either way, the ratio between strength and technical ability for an individual lifter is an identifiable quantity. And if the strength variable is increased and technical ability stays the same, the ability to display strength through technical ability increases. Do the math.

My point here is that after a certain level of technical improvement, which occurs relatively early in a lifter's training, the quantity that will always remain the most improvable is strength. This is because technical ability is primarily a neurological and neuromuscular phenomenon. It is developed through basic instruction, repetition, correction, mental modeling and imaging, more repetition and correction, and then a diminishing amount of correction as the movement gets embedded and the "feel" for correct performance becomes developed. This process, for a person actually capable of learning the movement (unfortunately, there do exist motor morons) takes a few weeks to a few months. The development of strength, on the other hand, takes years. The processes involved in building strength involve muscle, bone, connective tissue, and endocrine systems as well as the neuromuscular system, and the remodeling of these tissues takes time. Strength acquisition requires a much more profound change in physiology than that which accompanies the learning of a movement pattern, and the processes that bring about this change do their work over months and years, not just weeks.

And if technique has been worried about at the expense of strength, as it very well might have been for many American weightlifters, the potential for improvement in overall performance lies in strength improvement. Shane Hamman told me recently that he was quite sure that the lifters he had competed against at the international level were much stronger than he was. He cited the example of Hossein Reza Zadeh, the Iranian superheavyweight whom he saw do a 230-kg (506-pound) power clean at the 2004 Olympics "without bending his knees" at the catch. Shane said he never saw him squat anything much heavier than 280 kg (616 pounds) for a triple in the warm-up room, but a guy who is about to compete in the Olympics might not be inclined to do a PR back squat in the warm-up room at the meet just to show everybody. The 230 power clean was all Shane needed to see. He had the same impression of the other lifters in the "A" session, where the lifters expected to place high in the meet are grouped. Shane's opinion about strength is not to be ignored: he has squatted over 1000 pounds in suit and wraps, and I personally witnessed him squat 804 in a pair of lifting shoes, shorts, and a t-shirt—no belt or knee wraps—and handle the weight *explosively*, immediately followed by five standing back flips.

After a certain level of technical improvement, which occurs relatively early in a lifter's training, the quantity that will always remain the most improvable is strength.

I know athletes who have been at the Olympic Training Center in the weightlifting program for various periods of time and never been asked for a PR back squat, front squat, or, god forbid, a deadlift the entire time they were there. This is a common feature of weightlifting training in this country, where the only lifts that are emphasized or coached for technique are the snatch and the clean and jerk. Some weightlifting coaches may tell you that they train the squat hard, but this critical exercise is approached with the "Just put the bar on your back and squat it" coaching method, the same one that has worked so brilliantly for high school football players for decades—and to similar effect. It is as if they think that coaching the squat, the press, and the deadlift for technical correctness and efficiency is beneath their dignity, that technique is only important in the snatch and the clean and jerk. Some of their lifters even have perfect form on the two lifts, in the B session. The critical thing is that quite often the A-session lifters have less than perfect snatch and C&J form, but are strong enough that they can get away with it.

Strong Enough?

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The lifters who regularly stomp us to death at the World Championships are probably not coached for strength either. Their programs have the luxury of high enough participation and a large enough pool of very strong lifters to choose from that strength coaching need not be a primary concern. China has 1.3 million registered lifters—they can find eight men and seven women strong enough to beat us without a lot of trouble. But not devoting a bunch of time to making their national team stronger doesn't mean that strength is not important to them. If you're on their team, you are by definition very damn strong. And if you can't stay strong—or, more likely, alive—on their program, they can find someone else who can. Big, efficient programs like those run by most European, Asian, and some African countries advance enough athletes to the higher levels that the national team has plenty of strength talent to choose from, and the program itself does not have to focus on strength. It is just like the NFL, and for exactly the same reason—a huge talent pool and lots of feeder programs. USA Weightlifting, with its 3,000 members, is not. My point is that if your weightlifting team is good enough that you don't have to worry about making them stronger, that's wonderful, but if it isn't, you'd better do something about it. We don't seem to be.

And again, if strength is not important, why do we worry about steroids? An entire enforcement bureaucracy—USADA/WADA—now exists because of athletes' persistent use of drugs that are primarily taken to make them stronger, by whatever mechanism. Steroids do not make your technique better; they just make you able to handle heavier weights with your same technique. Bodybuilders don't use them to make their Double Biceps pose more fluid and precise. Cyclists don't use them to make their pedal stroke more efficient. Professional wrestlers don't take them to improve their Sleeper Hold. Baseball players already know how to hit the ball; steroids just help them hit it farther, not more precisely. Whatever the reason for taking them—improved recovery, neuromuscular efficiency, weight gain and leverage improvement, "tightness," aggression, and so on—they work because, ultimately, they make you stronger. And, clearly, stronger is important enough to these athletes to risk a career for.

Athletes and coaches in other sports share this misunderstanding. Judo is a martial art with strength and technique components that are not quite analogous to Olympic weightlifting. It takes to longer to gain technical proficiency in any martial art because of the much more extensive catalog of movements involved and the complex nature of their application. A weightlifting meet always involves three snatch attempts followed by three clean and jerk attempts; a judo match consists of the extemporaneous application of the appropriate number of many thousands of technique permutations, depending on conditions that change constantly over the length of the point. Technical ability in judo is arguably much more important and much harder to develop than it is in weightlifting.

Yet great strength trumps technical ability in judo, provided that the players are of similar bodyweight. The sport places a high premium on the use of leverage to overcome an opponent's strength, but at some point strength cannot be overcome by anyone save the most highly skilled player. Great strength allows imperfect technique to be forgiven. My friend Gant Grimes, an experienced and capable judoka, was once destroyed by an opponent named Brad Sanchez, a guy who had beaten a national champion despite having trained for only a few months. Sanchez was a 500-pound bencher, strong everywhere else too, and his strength rendered an opponent's superior technical ability irrelevant. Gant was chokeslammed by this guy, and he says there was literally *nothing* he could do about it. [See "Strength on the Mat", below.]

Here is where the difference in the technical-ability learning curves for the two sports is critical; most weightlifters are experts at technique in a year, maybe two, whereas in a sport like judo, important improvements in technical ability can continue for decades. Depending on how much mat time you have accumulated—and how many months or years it takes to do so—it might behoove a judo player to spend at least a decent amount of time under the bar. And despite this fact, the vast majority of judo coaches resist the idea of adding barbell strength training to preparation for the sport.

As with most sports coaches who lack specific training or experience with barbells, their reluctance is understandable, the result of a perfectly reasonable desire to avoid coaching things they don't know about. Now, this has never stopped a high school football coach from telling his athletes to look up at the ceiling when they do their half-squats, but it is conceivable that a conscientious sensei who has never lifted weights might be reluctant to put a bar and plates in the dojo. What would not be understandable is that same sensei advising against learning barbells and spending 45 minutes twice a week doing them.

It is also understandable that endurance sports coaches might not have an appreciation of the contribution that strength training can make to training for long-slow-distance sports. The easiest way to understand how this works is to look at the example of cycling, where each pedal stroke represents the use of a percentage of absolute strength. If your absolute strength goes up (as it necessarily will when I take your narrow little cyclist ass into the gym and double your squat strength in six weeks), then the percentage of your absolute strength used on each pedal stroke at the same speed goes down (by about half). Or, the force you can apply to each stroke over your three-hour ride can go up. Either way, strength has contributed to pedaling endurance. And if you get your pull-up strength up too, you can more efficiently control the frame while you pedal: your pull on the bars decreases uncontrolled frame "rocking" and maximizes force directed to the pedals. That should be enough evidence for cycling coaches to appreciate the contribution of strength training to the sport, but somehow I don't think they will. Cycling coaches are among the most resistant human beings on earth when it comes to ideas involving things other than bicycles.

Strength is quite simply the quality that separates winners from losers. "All other things being equal," so the saying goes, "the

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stronger athlete will win every time." Old sayings are sometimes foolish, but not this particular one. Technical ability allows strength to be demonstrated more efficiently; however, having better technique does not make one stronger. Both are necessary, and both should be coached, trained for, and appreciated with equal enthusiasm. But even if we remove a particular sport from the discussion and substitute "survival" as the activity we're training for, I'd take strength over technique every time. Cardell would agree. The process that has yielded us and every other living thing on this planet has an appreciation of strength, and we should too.

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Strength on the Mat

Gant Grimes

Physical strength may or may not be *the* most important thing in life, as Rip says, but there is no questions that is vitally important in martial arts, especially judo.

Judo, like any worthwhile sport, favors strong, fit athletes with good technique. While some martial arts, like Brazilian jiu-jitsu, are highly technique-driven, Judo requires strength, power, and conditioning—in addition to technique—to be successful.

Gerald Lafon, a United States Judo Association Master Coach, explains that Judo has thirteen major variables, basic psychomotor skills, agility, kinesthetic awareness, techniques, flexibility, endurance, strength, speed, power, health, mental skills, tactics, and environment (very much like CrossFit, except you beat up *other* people).

Judo is simple (not to be confused with easy). You win by throwing your opponent to the ground, pinning him to the mat, or subduing him with a grappling technique. Basically, you impose your will upon your opponent while he tries to do the same to you. Obviously, there's going to be some disagreement about who does what to whom, and the player with greater skill in the above-mentioned areas usually gets to make those decisions.

Technique, skills, and tactics are dependent on mat time, so progress in these areas is fairly linear over the first few years. Some of the other attributes, like strength, agility, endurance, speed, and power, can be developed off the mat and independent of the others. Among the novice to intermediate ranks (those with less than three years of experience), aptitude in these other areas lead to greater early success. Indeed, there is at least one beginner at every tournament who dominates his class, defeating players with many more months and years of experience. More often than not, this upstart is the strongest athlete on the mat.

The importance of strength in Judo cannot be overstated. Strength is the *sine qua non* of international competition. Elite players must marshal all their strength just to get in position to execute a good technique. And for the exceptionally strong, a well-executed technique can become something special. Masahiko Kimura is regarded as one of Japan's greatest champions. The 85kg judoka was incredibly strong, even among elite competitors in his weight class. He seamlessly blended his tremendous functional strength with superior technique to the point that he regularly administered about ten concussions per training session. It got to the point where some judoka refused to train with him unless he refrained from using his special Osotogari (a leg throw) that he developed by practicing *against a tree*. Kimura is perhaps most famous for defeating Helio Gracie in a jiu-jitsu vs. judo match in 1951. Gracie, creator of Gracie (Brazilian) jiu-jitsu, regularly defeated larger, stronger opponents but reported that there was little he could do to combat the strength and ferocity of the Japanese champion.

Strength is even more important to the novice player. While strength makes good throws great, it can also make shaky throws good and poor throws possible. Beginners have a hard enough time executing a good technique in practice, much less when they're chasing somebody around the mat. The stronger players are able to compensate for imperfect postures or throwing angles by manhandling their opponents into position. They can also better control the shoving match that ensues when the players first clinch. A weaker opponent usually responds to this show of strength with a desperate application of opposing force (similar to oversteering when driving a car). In highway driving, this leads to a rollover. In Judo, this leads to an easy counter and a full point.

Strength on the Mat

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In some cases, superior strength trumps all other abilities. I vividly recall a training session almost a decade ago when I was free-sparring with a classmate named Brad Sanchez. Brad had studied Judo for only a few months, but he had won his weight class (over 100kg, open division) at several tournaments and even defeated a national ladder champion along the way. Brad was a natural martial artist and a quick study, but he owed his success to the fact that he looked and fought like a Kodiak bear. He simply mauled anyone who stood across from him.

At the time, I could deadlift 500 pounds, was benching in the low 300s, and was very fit from playing rugby. I was new to Judo but had substantial mat experience from jiu-jitsu and Kenpo. I liked my odds against the bear. In our first match, I actually blocked one of his throws (which shocked him more than anything) and countered him for a full point. The second match progressed like the first one. I blocked his throw and went for a counter. That's when my feet separated from the mat. Until that moment, I never conceptualized the power of a man who could bench press over 500 pounds and had functional strength to boot. Until that moment, I had never had my 215-pound frame lifted up with one arm and forcefully choke-slammed to the mat. And until that moment, I had no idea the human body could bounce almost a foot off of a gymnastics floor.

Brad taught me a simple lesson that night (ok, two lessons, the first being not to counter Osotogari with Tani otoshi twice in a row). The lesson was *strength wins*, especially at the novice and intermediate levels. It didn't just give Brad an edge; his strength advantage was so big that it allowed him to manhandle every opponent across from him, regardless of fitness, speed, or technique. And it was a lesson I never forgot.

People familiar with Judo remark on the conspicuous absence of any real strength-training program in the community. This is because elite judoka are already strong from years of pushing, pulling, and throwing their bodyweight around a mat. Their training time is better spent practicing and refining sophisticated counter-techniques. Unfortunately, this mentality has trickled down and caused a de-emphasis on strength training at the novice levels to the detriment of aspiring judoka everywhere. Novice players wile away the hours practicing technique after technique. Many of these novices quit the sport, frustrated by their lack of improvement or at the chronic injuries they suffer (largely because of gaps in their strength and conditioning). These aspiring judoka would be better served by balancing their technical practice with a fitness routine comprising gymnastics, metabolic conditioning, power, and, most importantly, functional strength.

Gant Grimes is a products liability attorney in Wichita Falls, Texas, who CrossFits so he can keep up with his kids. He played all the organized sports in high school before finding rugby, and he has trained in Kenpo, jiu-jitsu, judo, and tae kwon do.

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The *CrossFit Journal* is an electronically distributed magazine chronicling a proven method of achieving elite fitness.

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