

the **CrossFit** JOURNAL

March 2006



Training in Austere Locations

- James Decker

As much as we CrossFitters enjoy being able to get online to CrossFit.com to see what new challenge Coach has for us in the Workout of the Day (WOD), we don't have that luxury every day. Work, deployments, and life all disrupt even the most carefully planned schedule, and sometimes we find ourselves far removed from even basic exercise facilities. If you too find yourself in this situation, rather than putting your fitness on hold (and letting it decline) until you get back to civilization, consider the following suggestions to maintain or even improve your GPP (general physical preparedness) while you are enjoying the great outdoors.

Do yourself a favor now and copy down a few months' worth of WODs from the archives. Keep them on disk or in a small notebook, and don't leave home without it. If you are able, make up a small portable workout kit. I always try to bring at least one set of rings, a small pair of parallettes, a 55-pound dumbbell, and a stopwatch. With my notebook (filled with past completed WODs, times, scores, and, more importantly, techniques I have used in the past to substitute equipment or exercises in order to participate in the WOD), my travel kit is complete. Now when I hit the ground, I need only time, a small space, and a

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Parallette Training Part 2

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The press to handstand is an incredible tool for developing strength in the shoulders and upper back. It is also an impressive feat in its own right. While a press to handstand is not terribly difficult to execute once learned, it can take a while to develop the required strength, flexibility, and understanding of the technique.

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~ Roger Harrell ~

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Once learned, it can be modified continually to progressively increase the demands of the skill.

Some flexibility is essential to execute a press handstand with correct technique. The ability to do a decent "pancake" (a forward bend with straight back from a seated straddle or pike on the floor, so that your chest contacts the floor or your legs) will help maximize efficiency of the movement. (See issue 41 of the CrossFit Journal for tips on improving flexibility.)

Most of the following handstand drills can be performed either on the floor or on parallettes. In general, working the drills on parallettes will make the movements easier. The parallettes create a more stable base for the handstand as well as providing more clearance for presses from the L or straddle L. If you use parallettes, start with your feet on a mat or other raised surface so your feet are level with your hands to start. Once you begin to develop some proficiency with the move, you can lower or remove the mats.

Press to headstand

To learn a press to handstand, you must first learn a press to headstand. Start by placing both hands on the floor about shoulder width apart, then place the top of your head on the floor about 8 inches in front of your hands. From this position straighten your legs and pull your feet in toward your face so that your toes are on the floor and your hips are directly above your head. This is the key position that must be learned to progress to a press to handstand. From this position you should be able to straddle wide and slowly lift your hips and legs into a headstand with a bit of pressure on your hands. This movement should not require much effort. If you find you are pushing hard with your hands to get your feet off the ground then your hips are not directly above your head. Return to the previous position and try to ensure that your torso is completely vertical. Once you have lifted to a stable headstand, practice lowering your toes to the floor in a straddle position, lightly touching your toes on the floor, and then pressing smoothly back up into a headstand. Throughout this motion your hips should remain directly above your head.



Handstand straddle down against a wall

Kick to handstand with your back against a wall. Straddle and lower your toes to the floor. This motion should be identical to the straddle down from headstand except that you are now on your hands with straight arms. Consciously keep your back pressed against the wall, maintain a hollow chest, and keep your shoulders extended and as open as possible.



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Press to handstand leaning on a wall

Stand facing a wall, place your hands on the floor a few inches away from the wall, and press up to handstand. Start with your shoulders directly over your hands and arms perpendicular to the floor, not angled back with shoulders closer to your feet. And, above all, remember to lift your hips completely before lifting your legs. Your lower back should contact the wall before your legs are brought up. Resist the temptation to bend your arms. A bent-arm press to handstand is markedly different than a straight-arm press to handstand, and working the press with bent arms will slow your progress to straight-arms. Reverse the motion, and straddle down controlled to the floor.

Press to handstand with a spot

There are a few basic methods for spotting a press to handstand. For the first method, stand facing the spotter, and then bend to place your hands on the floor so that your back is to the spotter and your shoulders and hips are aligned directly above your hands. The spotter places his hands on your hipbones. As you press to handstand, the spotter should lift and pull your hips back toward himself. The spotter should not lift straight up, as this will hinder your ability to perform the skill. Instead, the spotter should just keep your hips aligned and stabilized over your shoulders.

In both the first and second methods, the spotter's knees can be pushed against your shoulders to brace you and help open the shoulders in the press.

The second method involves the same start position as the first, but instead of grabbing your hips, the spotter will reach over your legs and grab your inner thighs. This allows the spotter to assist with the compression and straddle, helping to ensure proper body positioning.

The third method's start position involves the spotter standing to one side of you. If the spotter is on your left side, he will place his right hand on your upper back and left hand on your stomach. This enables the spotter to assist with opening the shoulders in the press.

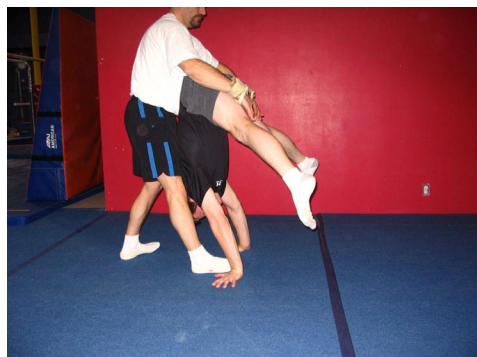
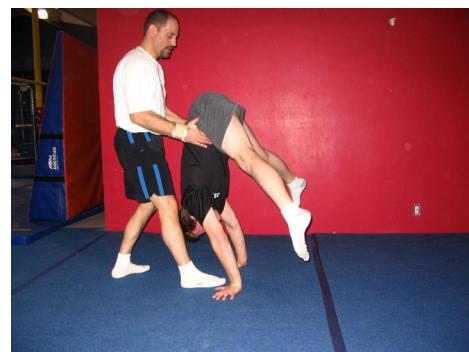
As with all spotting, it is the spotter's job to reinforce proper technique and minimize involvement in the action. He should do as little work as possible to get you in to the handstand.

Press to handstand from a straddled stand

If the preceding progressions have been trained, the next step is to work on a freestanding straddle press to handstand. Continue to focus on opening your shoulders and lifting your hips over your head before lifting your legs. Think about compressing into a pancake as your feet lift off the floor. Your legs should go out to the sides, not back behind you.

Press to handstand starting with your butt against a wall

Once you have a press to handstand, or are very close, working a press to handstand starting with your butt against a wall will force proper technique. Start in a straddle stand with your butt against the wall and your hands on the floor a few inches from the wall. Press to handstand attempting to reach the handstand without your feet touching the wall. This drill forces you to lift your hips and bring your legs around to the sides rather than back.



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Parallette Training - Part 2

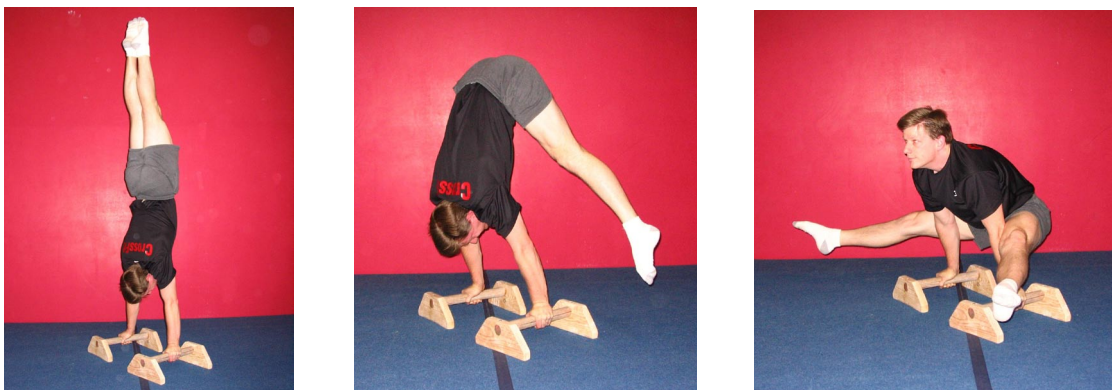
~ Roger Harrell ~

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Press to handstand lower to straddle L

Once a press to handstand is accomplished, you should begin lowering to a straddle L out of every press handstand. This will further develop your press strength and reinforce proper positioning. It will also begin to develop the bottom part of the press which will allow you to press to handstand from an L or straddle L. From the handstand straddle, bring your toes down toward the floor. Keep your hips as high as possible throughout. Once your legs pass vertical, lift your toes in front of you and lower your hips into the straddle L. Aim to control this motion throughout.



Straddle L press to handstand on parallettes

To press to handstand from a straddle L you must consciously think about pressing down on the parallettes, keeping your arms straight, and lifting your toes forward as you lift your hips backward. It is natural to want to kick your heels back as you start the press but this makes the press significantly more difficult. Lift your toes to compress into a pancake as far as possible to reduce the load on your shoulders. As with the other drills, once the handstand is obtained you should lower back down to straddle L. Once this skill is attained on parallettes it can be moved to floor.

L press to stand on parallettes

This drill helps to teach the required compression and proper technique for an L press to handstand. From an L-sit on parallettes, lift and press your hips back and over your head until you can place your feet on the parallettes behind your hands, with legs straight and in a partial straddle. The goal is to compress into a pike as much as possible and place your feet on the parallettes as close to your hands as possible.

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~ Roger Harrell ~

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L press to handstand on parallettes

If you can press to stand on parallettes and you can perform a straddle press to handstand from straddle stand, then an L-press to handstand on parallettes is simply combining the two. Start in an L-sit on parallettes and then lift and compress into the pike as much as possible. Lift your hips and press through the straddle stand position and continue into the handstand. Be sure to lower back down to the L after the press is completed.

To increase the difficulty and improve technique and compression, tape a broomstick or rod across the parallettes just behind your hands. This will force an intense compression in the press in order to clear the rod.

Standing pike press to handstand

Start in a standing pike. Lean forward and lift your hips to press to handstand while keeping your legs together. It is essential to lift your hips into the handstand before lifting your legs to maximize efficiency in this movement. Focus on keeping a tight pike as long as possible.



Straddle planche press to handstand

This is the first press in which all previous techniques are ignored. This press requires an initial lifting of the heels and lowering of the hips to reach a planche position. (An understanding of the planche is assumed [see "Parallette Training, Part 1" in last month's *CrossFit Journal*].) Focus on intensely tightening your shoulders as you press into the planche. Then press to handstand by leaning slightly forward and pushing your hips into the handstand. Do not lift your heels and arch, rather press your hips to the handstand while maintaining an open-hip straddle position.

Wide-arm press to handstand

Start in a straddle stand as with other presses but instead of placing your hands directly beneath your shoulders, turn your fingertips outward and place your hands as wide apart as possible. Eventually, this can be done with your head within an inch of the ground. All previous press techniques apply. Be sure to first lift your hips up, then bring your legs around to the handstand.



Assistance exercises

Seated leg lifts will help train the compression required for an efficient press. Work them with your legs in a straddle and also in a pike. Sit on the floor in a straddle or a pike. Place your hands on the floor in front of you (straddle) or just outside your knees (pike), so your torso is leaning forward slightly. Keeping your butt on the floor, lift your feet as high as you can. The further forward you place your hands, the more difficult this will be.



Through the progressions describes here and with consistent, dedicated practice, virtually anyone can learn a press to handstand, though only a select few will ever accomplish some of the most difficult presses to handstand. Working these presses will give you a measure of your current strength, flexibility, and technique, as well as providing a tool to develop them further.

The Slow Lifts

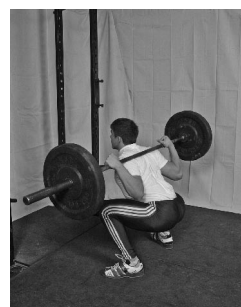
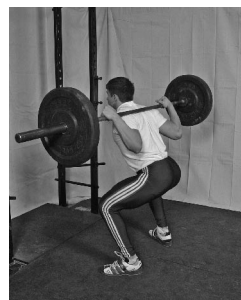
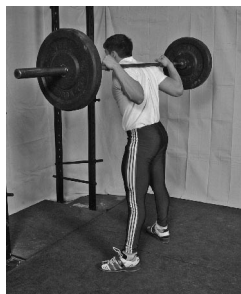
~ Mark Rippetoe ~

The “slow lifts”—the squat, the press, the deadlift, and the bench press—form the basis of any effective program to improve strength. And strength is very important. It is the difference between a very successful varsity athlete and a bench warmer, an independent older person and a nursing home resident, a correctly chosen gym membership and a waste of money.

When I was a little boy, my daddy took me to work with him at his café. He worked long hours and would never have gotten to see me if I hadn't gone back to work with him in the afternoons, after his well-deserved and often interrupted nap. One of my favorite people to see at the café was the shoeshine guy from the barber shop on the corner. Roosevelt Pope was in his fifties at the time, and, had social conditions differed in the early 1930s when he was young, he would have been an amazing athlete. As I remember, he was about 5'10" at probably 190 lbs., with an athletic bearing and a broad sense of humor. Roosevelt had really nice arms, but I don't know if he trained them. At the time I didn't think to ask.

I was always fascinated by Roosevelt's hand strength, and the things he would do to show me. He could take a stuck lid off of a jar that would embarrass my dad. He could bend a bottle cap between his thumb and his ring finger. He could do other things that I don't remember at 45 years' remove, but the impression he made on me was one of confidence and power that elevated him in my esteem well above the position the social circumstances of the day would otherwise have dictated. And he was a nice man to boot. He brought me bubble gum without my even having to get a haircut.

I look back to 1961 and I see clearly that strength means way more than the ability to generate force against a resistance. It has always meant capability. It has always been the means by which people accomplished things in interaction with their environment. Its acquisition has always improved the acquirer in more ways than intended.



Strength is the ability to generate force against a resistance, irrespective of the movement produced by doing so. If the resistance doesn't move at all, the force exerted against it is still measurable with the right tools, and the muscular effort used is said to be “isometric,” wherein the muscles stay the same length. If the movement of the resistance is controlled by something other than the muscular effort (by the exercise or measurement device, since this cannot occur otherwise), the movement is said to be “isokinetic.” This is a silly thing, like a quadriceps isolation, since it does not occur in nature, or under any circumstances the human body is designed to accommodate.

When we consider movement that is controlled by the muscular force applied to the resistance, power becomes an important concept. Power is force applied to a resistance that causes the object providing the resistance to accelerate, or change velocity. Force applied to a

stationary force plate is a measurable quantity, but it is not power. Movement is required for power to exist. In the weight room, if the weight on the bar stays the same, the bar moves faster when more power has been applied to it. If the weight gets lighter, it's obviously easier to move faster, so power would depend on how much faster it gets moved. As the resistance or weight decreases, the lifter's power output decreases as well, due to the inability of a human to continue to move an object faster and faster as its weight decreases. (Humans have inherent limitations in the nervous system and the contractile mechanism of muscle tissue that machines don't have, and as the weight approaches zero this limit velocity takes less and less force to achieve.) The same is true with increasingly heavy weight, but as the weight increases to the point where it's too heavy to lift at all, power decreases all the way to zero, since movement is required for power. At a 1RM, force is very high, while power is very, very low. Powerlifting really is misnamed.

Power—the ability to accelerate—may be the most important ability to display in all sports, even those involving only the accelerated movement of the body, such as gymnastics and diving. In two athletes with exactly the same skill level, the more powerful of the two will be the better athlete, since the more powerful one can utilize those skills more efficiently.

In all of sport, the highest power outputs ever measured occur during the second pull of the snatch. I would guess that the lowest would occur in the posedown at the Mr. Olympia, but I may be wrong.

Strength contributes to power by providing the force involved in the acceleration, which is obvious. Equally obvious is the fact that strength improvement will improve power, although there are other factors involved that depend on the efficiency of an individual's nervous system.

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The Slow Lifts

~ Mark Rippetoe ~

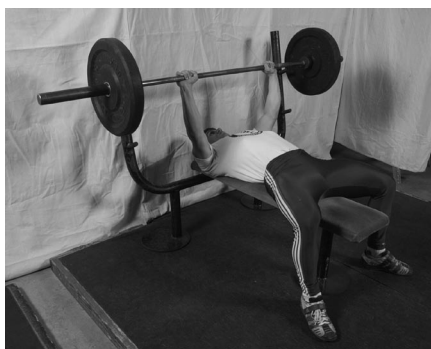
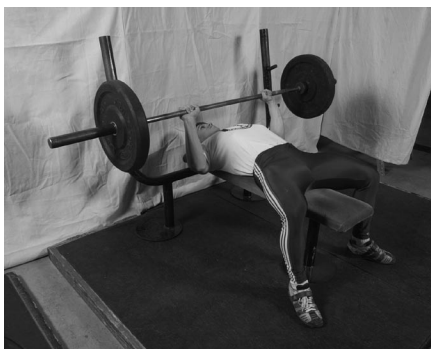
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Less obvious is the subtle role that strength plays indirectly in the execution of the movements that depend on power, both sports skills and power-dependent training exercises. In all expressions of power, there are elements of the kinetic chain that generate the force that produces the acceleration, and there are elements that transfer the force to the resistance.

For example, in a clean the power is generated by the extension of the knees and hips at the feet against the ground, and it is transferred up the back and down the arms to the bar. The efficient transfer of power along the trunk segment is possible only if the muscles that stabilize the trunk are able to hold it in perfect isometric contraction during the transfer. Any laxity in the back causes some of the power that would ideally get to the bar to be absorbed elsewhere. In the same way that towing a car with a long spring is not as good an idea as using a chain, a mobile body segment absorbs force that an immobile segment would transmit.

The muscles that hold the segment immobile are therefore critical to its function in the kinetic chain. A loose back during the clean produces an unfinished pull, as well as an unpredictable bar path, since varying amounts of force get to the bar. And the muscles' ability to hold an isometric contraction depend on their ability to produce sufficient force to hold all the mobile segments of the vertebral column perfectly immobile while a tremendous load is trying its best to move them. That ability to produce force is strength.

The squat, press, deadlift, and bench press all incorporate the isometric and dynamic components of the quick lifts—the snatch and the clean and jerk—because they are multijoint movements that involve lots of muscles doing lots of things during the movement. The slow lifts can all be done fast themselves, and can therefore be used to develop power as well as strength.



Louie Simmons didn't invent the idea, but he taught us the lesson.

In contrast, the quick lifts cannot be done slow, and are always used to train power. They cannot be used as strength exercises, since their execution requires a high bar velocity: a slow snatch will not rack; a slow clean is a deadlift. The squat can be done with heavy weights that preclude high velocities, but it requires high force levels, and so allows force production to be trained. In novices, any movement that uses weights that are heavier than have been lifted before can produce strength increases, since they are thoroughly unadapted to force production, and the isometric effort used in the clean and snatch will develop strength in these

people. But in more advanced lifters the quick lifts are not useful for developing strength, since strength is not the limiting factor in their execution.

Of greater interest to the general public is the relationship between strength and endurance training. The media, damn near all of it, in collusion with doctors, physical therapists, athletic trainers, "exercise physiologists," high school coaches, the ACSM, the YMCA, Dr. Phil, Jake, Tony, and various other experts, have all managed to equate fitness with aerobic exercise. The cruel fact is that strength training contributes mightily to endurance/aerobic training, and endurance training contributes essentially nothing to strength training.

Here's why. Let's take the example of a cyclist riding in the Hotter 'N Hell Hundred, which is after all the largest sanctioned bicycle race in the world, right here in Wichita Falls, Texas. This cyclist, riding down the mind-numbingly flat roads of Wichita County, will be able to maintain a speed of about 18 mph for an agonizingly extended period of time in the sweltering August morning, unless he is killed prematurely by an inattentive oilfield worker driving onto the road, blinded by sweat and dust. This poor bastard is able to maintain his 18 mph pace by applying a uniform amount of force, x pounds, to each pedal stroke. (Let's ignore that fact that he uses a complicated circular stroke, and just assume that he is pushing his pedals like most everybody does on a bicycle.) Let's say that we force him to do the unthinkable and perform a correct squat in order to assess his lower body strength. After much whining about his knees and how the squat doesn't really correctly simulate the range of motion of cycling, he manages a 1RM with 135 pounds. So his pedal force constitutes a percentage of his squatting force, $x/135$. (This 1RM deal is just for the sake of illustration. I am a moral man, and I would never test a cyclist, or any other untrained squatter, at 1RM.)

Now, we blackmail him into training the squat for 8 weeks by threatening to release

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The Slow Lifts

— Mark Rippetoe —

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the pictures we took of him squatting. After an initial period of easy work to allow time for him to adapt to the unfamiliar eccentric component of the training—which is absolutely necessary when training cyclists—he increases his 1RM squat from 135 pounds to 270 pounds, a doubling of his effective leg strength.

What happens to his pedal force at 18 mph as a percentage of his max squat? It goes from $\times/135$ to $\times/270$. It is reduced by half. Because leg strength doubled, it now takes half of his previous force production capacity against the pedals to maintain the same 18 mph pace. He is stronger, and so he doesn't have to work as hard to do the same work.

This analysis applies at some level to every activity that requires repeated submaximal contractions. By lowering the relative intensity of each individual effort, the cumulative effort is reduced, and depending on the range of motion of the activity, may even be shifted farther toward the oxidative end of the metabolic continuum, which fuels long slow distance efforts.

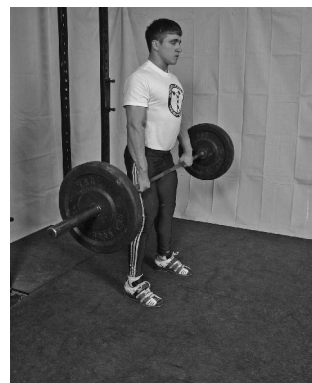
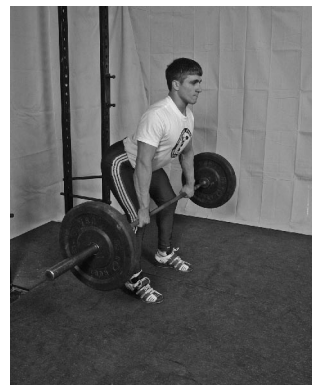
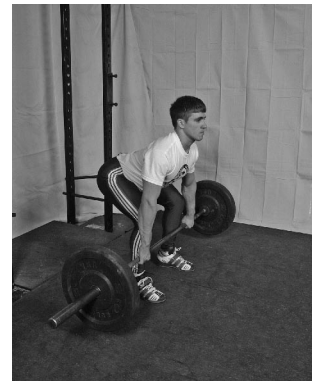
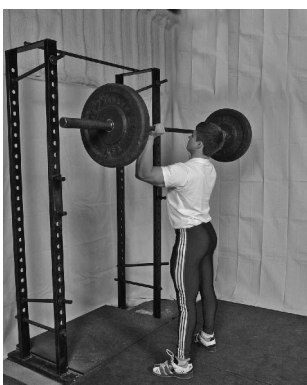
Although squats and all the other slow lifts depend on the phosphocreatine/glycolytic energy regime, they have the ability to positively influence activities that are primarily oxidative in nature. By increasing strength and improving the efficiency of each component contraction, strength training makes an important contribution to every type of athletic activity.

But what about endurance training's benefit to strength training? There is none. Activities that utilize oxidative metabolism do not depend on force production, and so do not produce strength. Anything you can do for an uninterrupted two hours can't be that hard, in terms of the amount of force required. It produces endurance adaptations at the cellular level, changes that are actually detrimental to strength. Long slow distance work destroys muscle

mass, beats the hell out of your knees and hips, and takes way too long. Don't do it.

So, you ask, why do we squat, press, deadlift? Because these lifts work all the muscles and joints in the body, they simulate normal human movement patterns, and they produce strength appropriate to all uses of the muscles and joints. They can be trained fast or slow, done with a minimum of equipment, and form important components of the quick (i.e., Olympic) lifts. They affect the body in a systemic way, producing sufficient stress that a hormonal response is produced to facilitate recovery and adaptation. They are very hard. They produce psychological toughness when trained correctly. And absolutely no one has ever gotten brutally, ungodly strong without doing them.

What about the bench press? The bench press is inferior to the (overhead) press as an overall exercise, but it does allow for the development of greater



upper-body strength than the press since the position on the bench is supported. The fact that bigger weights are done on the bench is good for upper body strength, but bad in that the limiting factor is the ability of the trunk to support the weight while it is lifted, and that doesn't get trained on the bench. So, it's a trade-off. All standard commercial gyms have several benches, so it's easy enough to do them, but be sure to use the press for at least half of your upper-body work.

The squat, press, deadlift, and bench press have been used for decades by the strongest athletes on the planet. There is good reason for that. Any program that doesn't use them is inferior to one that does, and any athlete who neglects them is doing less than what is possible in his performance, and less than what is absolutely necessary to maximize his strength.

end.

Speed Development

Karl Geissler and John Baumann

Sprinting is a skill. It is beautiful, violent, functional, and potentially destructive if conducted in an unsafe manner. It can bring glory to an athlete or be a factor in the survival and success of a warrior on the battlefield. At its simplest, it is a means of getting the body from one point to another in the shortest possible time, yet it is also a very complex, specialized motor skill that requires a high degree of coordination. Broken down into its fundamental components, it can be thought of as repetitive maximal force efforts; as such, it clearly exposes any muscular imbalances that exist in an athlete.

Defining the needs

CrossFit embraces ten physical abilities that define optimal fitness. When examining efficient sprinting, we need to test this activity against the demands of these abilities. Obviously, it is about speed. However, the other nine abilities also play a role in sprinting, especially when it is considered as a component of the CrossFit training model.

Individual sprints may not require cardiovascular endurance, yet repeated bouts of sprinting with short recoveries will have a dramatic effect on the body's ability to utilize oxidative processes. In short, the waste products of high-speed running (hydrogen, carbon dioxide, and lactate) will be relieved only by the body's ability to aerobically cycle this waste out of the system. Stamina will be tested by sprinting, so continual bouts of sprinting can improve the athlete's ability to process, deliver, store, and utilize energy.

Sprinting requires a great deal of strength, because force needs to be applied from leg to leg to accelerate the body. Strength is also necessary to stabilize the muscles of the leg so that force application is powerful and not chaotic. Insufficient strength and/or muscular imbalances often lead to dramatic and serious injuries. Efficient

and powerful running requires a great deal of dynamic flexibility, which cannot be acquired through static stretching. (In a future article, we will discuss a protocol that can be used to develop this type of flexibility.) Power is definitely required and developed through sprinting. Many exercises, skills, or sports express power in two-footed movements, but sprinting is continual power movements in a single support. Speed occurs as we cycle through those movements and work to generate maximal velocity.

Coordination, agility, balance, and accuracy all have a role in the performance of an efficient and powerful sprint stride. A world-class 100-meter sprinter will have a rhythmic quality to their running pattern that is developed after constant rehearsal of their mechanics. Arm swings, leg cycles, and postural position require coordination, or the results will be either comical or horrendous. The sprint stride requires a great deal of agility, especially in the transition from starting (acceleration) mechanics to a full-out (maximal) run. Balance is required with each stride, because force is transferred each time the runner interacts with the ground. Great sprinters have an uncanny ability to place each foot in a near-perfect position as it relates to their center of gravity, whether it is at the start of a race or when they have achieved their maximum velocity. Even accuracy can be necessary, in that the athlete needs to control their movement to apply a force in an optimal direction. If the athlete does not have proper body control, then contortions can occur that affect their ability to move forward as fast as possible.

Terminology

When discussing sprint/speed training, there needs to be some common terminology to help to describe the qualities that we hope to achieve. Velocity describes the rate of motion

in a given direction, often expressed as distance/time (e.g., miles per hour or meters per second). Acceleration describes the rate of change of velocity, and force is the effect one body has upon another. In sprinting, this can be thought of as the human body acting against the ground. Energy describes the capacity to do work, expressed in the formula $\text{force} \times \text{distance}$. Power is the force against the ground required to move the body forward in a given amount of time (work/time). Stride length (the distance covered in one running step) and stride frequency (the speed of the legs, or the number of steps per second) are typically understood as the two variables that need to be increased to improve running speed.

Physiological requirements for sprinting

Sprinting is predominantly an anaerobic activity, dependent mostly on the utilization of the ATP-CP energy system. Traditional long slow jogging tends to hamper the development of this energy system. As in weightlifting, the first 2 to 3 seconds of energy expenditure are "free," in the sense that no waste product is being generated. Running/lifting bouts of 6 to 7 seconds place heavy demands on ATP and require resynthesis of ATP-CP. This anaerobic alactic energy system is the rocket fuel that we want to tap into; however, it will only last about 7 seconds each time. Traditional track and field training of this energy system (anaerobic alactic) consists of successive runs of 30 to 60 meters with 1:30 to 3:00 rest between runs. Emphasis is placed each time on purposeful and explosive strides. In the three minutes following a 30- to 60-meter training bout, the ATP energy stores are replenished up to 95 to 98% of the pre-bout level, and CP are replenished to around 75%. The body will develop adaptations to effectively use this energy system for the greatest

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Speed Development

Karl Geissler and John Baumann

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possible gains.

Sprint training also produces other adaptations that are not metabolic in nature: strength gains, muscular and neural recruitment processes, and synchronization and coordination of the efficiency of movement. Training at maximal effort (speed) will improve your skill and your coordination for performing at higher intensities through the full spectrum energy pathways and types of movements. Traditional aerobic training has no effect on buffer potential, and will hinder the development of these critical non-metabolic adaptations. As with all physical adaptations to exercise, the changes depend on the nature and intensity of the exercise performed. So the muscle buffering capacity is related to the effort put forth. Over an eight-week training period, an increase of 15 to 50% of muscle buffering capacity can occur, depending on the training age and condition of the athlete. Training at high intensity will help the individual economize their use of the supply of energy within the muscles.

Ways to begin development

In future articles we will lay out techniques that can be utilized to improve running mechanics and energy system recruitment and prevent injury, and we will provide further explanation of drills and activities that can be used every day to improve your athletes' performances. As a starting point, work to increase stride length and stride frequency. Increased stride length comes from improved flexibility and strength. A common functional tactic is to incorporate resistance running, either with sled pulling or hill running. Stride frequency is best developed by maximal-speed running. Emphasis should be on good posture and efficient mechanics: the head is neutral and relaxed; the shoulders and pelvis stay

in alignment with each other; and each foot is placed squarely beneath the center of gravity. Try incorporating skill runs into workout days. For example, you might do something like the following to add speed development work to some recent WODs:

Day 1

Hill runs: 5 runs of 50-60 meters

15-12-9-6-3-rep rounds for total time of:

185-pound deadlift
Handstand push-ups
Vertical leap, 1 foot above reach

Day 2

Maximal-speed runs: 6-8 runs of 50-60 meters

Clean and jerk 1-1-1-1-1-1-1-1-1-1 reps

You do not have to be a highly gifted athlete or sprinting specialist to see improvement in sprinting. Moreover, developing your speed running and improving your sprinting skill can lead to marked advances in other skills necessary for high-level athletic performance.

end.

Sources of additional information

<http://www.usatf.org/coaches/education/>

Bompa, Tudor O. *Total Training for Young Champions*. 1999.

Carr, Gerald A. *Sport Mechanics for Coaches*. 2nd ed. 2004.

Ecker, Tom. *Basic Track & Field Biomechanics*, 2nd ed. 1996.

Gambetta, Vern & Gary Winckler. *Sport Specific Speed: The 3S System*. 2001.

Gambetta, Vern. *The Gambetta Method: Common Sense Training for Athletic Performance*. 2nd ed. 2002.

McFarlane, Brent. *The Science of Hurdling and Speed*, 4th ed. 2000.

Newsholme, Eric, Tony Leech, and Glenda Duester. *Keep on Running: The Science of Training and Performance*. 1994.

Kipping Pull-up Progression

— Eva Twardokens —

If you haven't heard all the debates about the kipping pull-up versus the strict pull-up, you should probably spend some time on the CrossFit.com message board doing a bit of homework. Searching for "kipping" or "kipping pull-up" will return many threads, but the granddaddy of them all is <http://www.crossfit.com/cgi-bin/discus/discus.cgi?pg=prev&topic=22&page=9021>.

If you are already familiar with the debates, you undoubtedly know that the kipping pull-up is king. The question most beginners ask is, How can I learn to kip when I don't even have one pull-up? The answer is that it's possible to learn the movement with assistance. Often students who already have a number of strict pull-ups have the most trouble learning the kipping pull-up because it is necessary for them to break old, counterproductive habits first.

I developed this teaching progression by teaching myself how to kip and then trying the movements with my clients at CrossFit Santa Cruz. The progression has been surprisingly successful with practically every student who has employed it. Mastering the kipping pull-up is not only fun but also incredibly functional and powerful, and it will take minutes off many of your Workout of the Day (WOD) times.

Stable elevation device such as a plyo box or bench; stable bar; you.



Instructions

1) Stand on a box or bench directly beneath your pull-up bar and grab the bar with your hands wider than your shoulders but narrower than in your snatch grip. The easiest grip to use is the front grip (palms away from you), but you should eventually learn and use all the grips: front, back, and mixed.

Tip: The height of your box should be such that you can hang off the bar with a quarter-depth squat. If you have the choice of having too much height or too little, go for too much; you'll need to be able to bend your knees beneath you.

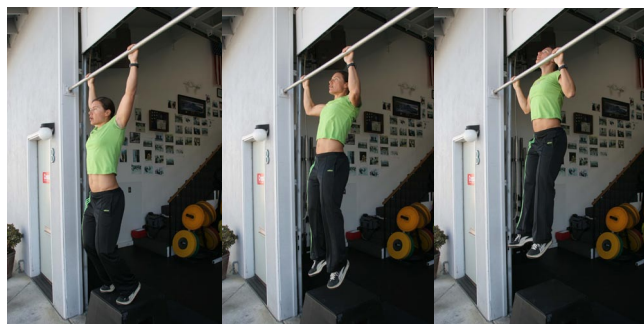


2) Practice the swing. Leave your feet on the box, bend your knees so that your arms hang straight from the bar and your shoulders are extended, and rock from heel to toe, bringing the hips back and forth respectively. Push the chest out along with the hips when you swing forward (into an arched position) and cave the chest in when you swing back (into a "hollow" position). Establish some rhythm and link at least five reps together before advancing to the next step.

Bonus: This movement helps develop shoulder flexibility, along with gymnastics

training and Olympic lifting skill-transfer exercises such as overhead squats, snatch balances, rack jerks, and the like.

3) Next, add a jumping pull-up. As your head passes under the bar and you are rolling back on your heels, jump until your chin is over the bar, then let yourself drop down onto the box. Catch yourself with your feet, with bent knees, and immediately drive your hips and chest forward into the front part of the swing, maintaining foot contact with the box. Once again, when you can link five reps together, you may move on to the next step.



4) Pushing your face and shoulders horizontally back away from the bar at the top of the jumping pull-up stroke, just as you get your chin above the bar, is the key to adding speed to the cycle, propelling yourself into the forward part of the swing, and linking one kipping pull-up to the next.

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Kipping Pull-up Progression

—Eva Twardokens—

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It creates just the right curve to maximize the speed of the descent into the “hips forward chest out” phase of the movement. [For a mathematical discussion of why this maximizes the speed, see the pages on brachistochrone curves at <http://curvebank.calstatela.edu/brach/brach.htm>. The push should be aggressive, initiating a fast swing; do not slow the descent or try to “muscle” through the bottom of the swing. Repeat the cycle to link several together and you’ve got it! For those who don’t yet have an unassisted pull-up, this is the way you should do pull-ups in the WOD.

Problem: Strict puller trying to muscle through the movement instead of swinging. You will identify this when you see a trainee arching the back through the whole movement and slowing the descent.

Solution: Have the trainee pike slightly in the jumping portion of the movement, and insist on a quicker descent.

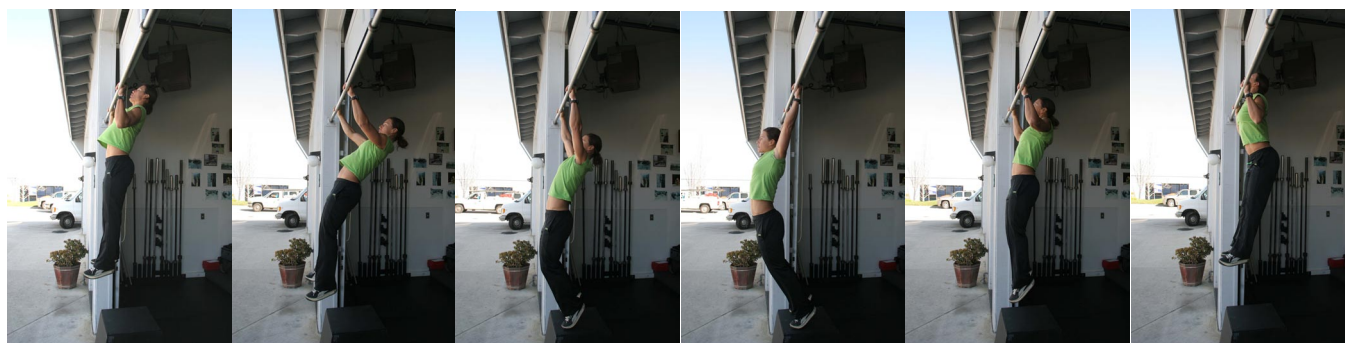
Problem: Dropping straight down after getting the chin over, often losing momentum at the bottom of the move.

Solution: The trainee is not pushing horizontally away from the bar at the chin-over portion of the movement.

are times when you just need to let trainees experiment for themselves. If they appear tired and overly frustrated, stop and come back to it another day. It is amazing what a few days of mental processing can do! And, finally, take advantage of the digital coaching portion of the message board (<http://www.crossfit.com/discus/messages/13350/13350.html>); there is a huge wealth of knowledge there.

Other CrossFit resources on the kipping pull-up

- Video of the teaching progression described in this article is at <http://www.crossfit.com/cf-video/eva-on-kipping.wmv>.



5) Once you have mastered the rhythm of the movement and feel you have gained some strength, start taking a bit of weight off your feet. It is a good idea to try your first unassisted kipping pull-up when you are fresh. Hang from the bar, swing a couple times, initiating with the hips and chest (not the feet!) and hit it! Most people who achieve one are so excited they don’t want to leave the bar.

Troubleshooting

Problem: Trainee not able to get chin over the bar.

Solution: Higher box. I have found that stacking 18-inch-diameter bumper plates on the box is a stable way to incrementally add height.



Communicate that this push must be aggressive!

Problem: Trainee performs the whole movement without getting his or her face within four inches of the bar. It appears as if he or she is floating behind the bar.

Solution: Earlier jump. The jump should happen just as the trainee passes backward under the bar. Also make sure the trainee isn’t pushing away from the bar before getting the chin over. Is the box too short? Raise it if needed. Make sure the box is high enough for the trainee to bend the knees and get a good jump.

Remember, rhythm and instinct are important in this movement. There

- Video showing the speed of kipping pull-ups compared to strict ones is at <http://www.crossfit.com/cf-video/strict-kip.wmv>.

- A thoughtful, informative community discussion of the merits of the kipping pull-up is at <http://www.crossfit.com/cgi-bin/discus/discus.cgi?pg=prev&topic=22&page=9021>.

- [Issue 32](#) (April 2005) of the CrossFit Journal features an article by Greg Glassman on the kipping pull-up.

end.

Parkour

~ Jesse Woody ~

Parkour is quite simply the art of navigating any environment quickly, confidently, and effectively with only the capabilities of your body to aid you. It's easy to see that how well it matches the CrossFit tenets of function, intensity, and variance, but it may seem surprising that it can also be universally scalable and beneficial. The concepts of environmental awareness and adaptation are of infinite usefulness to every person. Whether you are a senior trying to recover from a random fall or a soldier escaping an ambush in an urban environment, Parkour techniques can be applied to a variety of situations. By enhancing an awareness of your surroundings and building your confidence to overcome the obstacles throughout, you are given the key to a freedom that the untrained individual might never realize. To top it off, it's just plain fun! It requires nothing more than a good pair of shoes and an awareness of a safe and steady progression, so you will rarely be limited by lack of equipment. Instead, you will be able to apply the state of elite fitness we all strive for to any path of your choosing.

The term Parkour is a spin on the French phrase "parcours du combattants," which is the military obstacle-course training that has been in place since the turn into the twentieth century. While traveling around the world with the French navy, Georges Hébert (1875–1957) was inspired by the fitness and vitality of the indigenous peoples he encountered. By the time his tour of duty was complete, he returned to France with the concept of a *méthode naturelle*, or natural method, of exercise. Within this method, practitioners would run, jump, climb, swim, move quadrupedally (on all fours), fight, defend, and pick up and carry heavy objects. All of these individual aspects would be practiced randomly, either within a *parcours* course or in the natural environment. By moving the body in many varied and functional ways, he realized, an individual could become a true specimen of health and vitality. Hébert also realized that the

moral and mental faculties would need to be strengthened as well, and that any method that improved the body at the expense of the mind was doomed to failure. His personal motto "Be strong to be useful" (*Etre fort pour être utile*) illustrates this completely. Between the two world wars Hébert's concepts of the natural method were established as standard physical training for the French military. His concepts became the means for improving both the physical prowess and mental and emotional character of the soldiers in training.

Years later David Belle was taught these ideas of functional movement, useful physical skill, and the improvement of character by his father Raymond Belle, a firefighter and officer in the French military. After being involved with various sports in his young life, David decided he would expand his skills beyond the walls of a gym or the lines of a field. He took the ideas behind the *parcours* training and applied them to the suburb of Lisses outside of Paris. With a few friends he developed this art to navigate the urban landscape and overcome any obstacle they encountered. After years of training, a few videos of the young practitioners became public and the parkour movement expanded from there. Today there is a growing worldwide scene of both *traceurs* (parkour practitioners) and those who relate to parkour in some way.

The downside of this expansion is the apparent media bias toward dangerous stunts and acrobatic movements that can make even the most adventuresome individuals cringe. When exposed to Latvian kids performing back flips from 25 feet and insane Frenchmen jumping deadly gaps between roofs, many people regard parkour as an "extreme sport" that is appropriate only for the few individuals sick enough to huck their bodies from dangerous heights. Fortunately for us all, this isn't the case. Parkour is established through a manageable progression from the most basic roll to ground-level basics and then

moving into ground-level combinations. Any sort of height is attempted only after mastery of the foundation techniques, and all the benefits of parkour training can be gained without ever traveling above your own body height. The opportunity to expand and perfect movement in relative safety is endless, and an entire lifetime could be dedicated to pursuing virtuosity in the basics.

The basic movements are simply the expression of the human body's most effective methods of locomotion through varied environments. Over time, many standard techniques have stood out as universally effective: the basic landing and roll, the various vaults, the element of balance, the hybrid of both balance and jumping/absorptive power in the precision jump, and the element of climbing and swinging in the underbar and cat leap. For each of these there is an almost infinite amount of variation which depends on what the environment and obstacle may dictate. The same object may present an opportunity for both climbing and vaulting, depending on the angle of approach and speed and/or experience of the practitioner. After dedicating time to repetitive drilling of new techniques, a *traceur's* options for movement expand. Where once you may have been comfortable with only a two-handed vault at low speeds, you may now realize that you are capable of a more powerful monkey vault. From this point you begin to expand into the realm of more complex combinations of movement, and you can begin to overcome more complicated environments than you might have previously thought possible.

The discussion of these techniques can become simultaneously an oversimplification and an overcomplication of parkour's purpose. From refining individual movements in varied and random situations, the *traceur* progresses to combinations of movements that become more and more complex while also becoming smoother and less defined. Ultimately,

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Training in Austere Locations

—James Decker—

...continued from page 1



positive attitude to get a good workout
—if not always “as prescribed.”

For trips of a week or less, simple bodyweight exercises mixed with some traditional cardio, performed at proper intensity, can be adequate to maintain GPP. About half of the “girls” (<http://www.crossfit.com/cf-info/faq.html#WOD0>) are bodyweight-only; the Tabata protocol (<http://www.crossfit.com/cf-info/faq.html#Exercises0>) has many applications (<http://www.crossfit.com/cf-info/faq.html#WOD2>); and “Michael,” “J.T.,” and “Murph” can all be performed with minimal equipment. All you really need is something to pull up on, and an observant CrossFitter can find that practically anywhere.

For a longer or more remote trip (or if you are a particularly imaginative athlete), you can get really creative with your surroundings. Take a walk around, root through scrap piles, barns, and tool sheds, and start collecting apparatus for your primitive gym. Here are just a few suggestions to get the ball rolling:

- Trees: do pull-ups on branches, use as a handstand push-up support station, use for Koala-fying (Ask a Ranger about that one.)

- Rocks: substitute for kettlebells in swings, use for shot-put practice and for heavy lifts and carries
- Logs: do caveman Olympic lifts, caber toss, use as balance beams

- Sandbags: substitute for kettlebells/dumbbells, use for farmer’s walk, employ as ballast for other apparatus (for example, in wheelbarrows, or on improvised pulling sleds)

- Buckets (with weight): use for sumo deadlift high pulls, thrusters, Turkish getups, one-arm “dumbbell” snatches, weighted box steps

I am certain a soccer ball can be quickly found nearly anywhere on six of the seven continents (conveniently, they’re even cheaper if they already have holes in them!); get one, find yourself some glue and duct tape, and make a medicine ball. Think of an abandoned auto and the trove of exercises you can concoct with the equipment lying there: axle thrusters, leaf-spring Olympic lifts, bumper dips, tire flips/carries/drag. Where one person may see just exhaust pipes, I see useful (if ugly) parallelles.

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Parkour

Jesse Woody

...continued from page 13

the traceur pursues a mind state in which the individual movements lose their significance and are replaced instead with constant motion through any chosen environment. It is much like a martial art where you learn forms to master the basic movements only to gradually disregard these individual elements in pursuit of total mastery of the body and mind.

Along the way to this point, both the dedicated traceur and the recreational enthusiast will find innumerable benefits from incorporating parkour techniques into their training. Increased confidence, agility, balance, coordination, endurance, stamina, power, speed, and strength are just a few of the more obvious rewards. As these improve, more subtle changes also take place, and before too long the athlete will be viewing his entire environment from a different perspective. Mastery of both the body and the obstacles that might otherwise hinder its movement is a profound state. By moving purposefully through the basics in a safe environment, you gain the ability to approach every situation with the skills and confidence to find the most effective way over, around, and through anything that might stand in your way.



end.

Training in Austere Locations

— James Decker —

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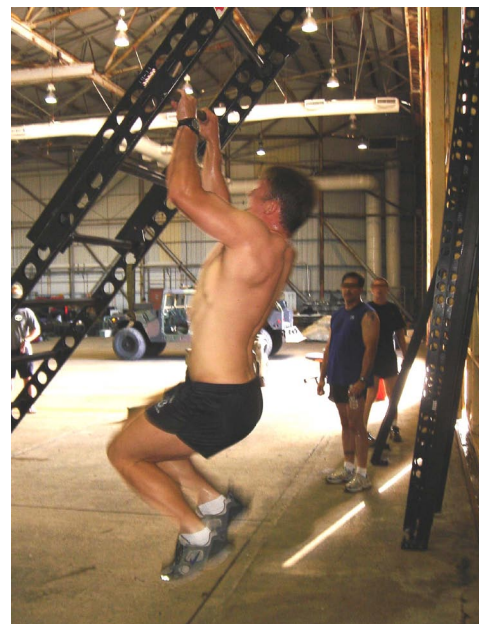


feet, and stack fifty hay bales? How long will it take to hit a tractor tire with a 12-pound sledgehammer 100 times plus do 200 squats? In many places in the world you can buy 50-kilo sacks of rice: what is your best time for the Rutman mile? How about Tabata woodcutting? If you have strong rope, you just increased your list of possible exercises by

an order of magnitude. And any type of ladder can make a great pull-up device.

columns, and—voila!—instant workout, not likely to be repeated anytime soon. You can use any bill of currency, or your airline ticket tracking number, or the bar code numbers off anything lying around... you get the idea.

Sooner or later, most of us will find ourselves away from home looking for a place to work out. While we may miss the conveniences and camaraderie found at our local gym, we can't use that excuse to just give up on our hard-earned fitness. Prepare before you go, keep your eyes open when



Remember the part in Rocky when the hero traveled to a remote farm in the snowy Soviet Union to train for his fight? Seem far-fetched? Now look at Kelly Moore's GPP and ask yourself if living on a farm ever hindered her training. On the contrary. You could spend thousands at Gold's/World/Bally and not get close to those results (even if you had Kelly's inspiring discipline and athleticism).

You can find some sort of stick in just about any location. Let's see a show of hands: How many flat-bellied, barrel-chested, steely-eyed defenders of freedom out there wish they had something even resembling the Olympic lifting technique displayed by a young lady named Sage? Grab that broom/shovel/pitchfork/sapling and start working on it! We have years of practice to catch up on.

How fast can you unload, move 25



If you absolutely can't think of anything to do, if you are not inspired by any of your surroundings, give this workout randomizer a try. I call it "Pay Your Dues." (see chart on page 16) Take any set of random numbers, plug them into the

you arrive, and don't be restrained by conventional thinking. How productive and stimulating, not to mention fun, these workouts will be is limited only by our imagination and creativity.

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Training in Austere Locations

James Decker

...continued from page 15

"PAY YOUR DUES"						
DIGIT	A	B-E	F	G		H
0	1	PISTOLS		(TIME)	(SETS)	
1	1	AIR SQUATS		15 MIN	3	6
2	2	BOX JUMPS	FOR TIME			
3	2	GOOD MORNINGS				7
4	2	HOLLOW ROCKS		20 MIN	5	
5	3	JANDA SITUPS				8
6	3	DIPS				
7	3	PUSH-UPS	FOR SETS	25 MIN	7	9
8	4	HANDSTAND PUSH-UPS				
9	4	PULL-UPS		30 MIN	10	10
A	1ST DIGIT OF NUMBER: HOW MANY EXERCISES					
B-E	2ND-5TH DIGIT OF NUMBER: WHICH EXERCISES					
F	6TH DIGIT OF NUMBER: MODE (DURATION OR WORK)					
G	7TH DIGIT OF NUMBER: MODE MODIFIER (TIME OR SETS)					
H	8TH DIGIT OF NUMBER: REPETITIONS					
	EXAMPLE- \$1 BILL, SER# F 67534265 A :					
	6 = 3 EXERCISES; 753 = PUSHUPS/JANDA SIT-UPS/GOOD MORNINGS;					
	4 =FOR TIME; 2 = 15 MINUTES; 6 = 9 REPS.					
SO, WORKOUT IS: PUSH-UPS, JANDA SIT-UPS, GOOD MORNINGS 9/9/9						
PERFORM AS MANY SETS AS YOU CAN IN 15 MINUTES, COUNT COMPLETE						
AND PARTIAL SETS FOR SCORE						

end.

the CrossFit JOURNAL

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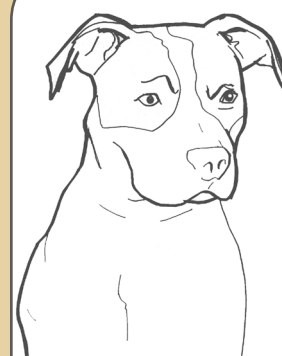
Your input will be greatly appreciated and every email will be answered.

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