

TABLE OF CONTENTS

Better Coaching - So You Want To Be Great “Big Event” Coach: Three Things That Can Make or Break You	2
<i>- By Sean McCann, Ph.D., USOC Sport Psychology Department. From www.usolympicteam.com/coaching</i>	
Athlete Development - Practice Like A Girl, Compete Like A Boy – Training the Total Athlete	5
<i>- By Kathleen J. DeBoer. From www.usolympicteam.com/coaching</i>	
Strength & Conditioning - How Much Strength Is Enough	9
<i>- By Ed McNeely. From Junior National Strength Training Program.pdf</i>	
Strength & Conditioning – The King of Exercises – The Squat	12
<i>- By Danny O'Dell. From Issue 21 of Successful Coaching Newsletter</i>	
Strength & Conditioning- The Full Squat from The Trainers Perspective.....	15
<i>- By Danny O'Dell. From Issue 23 of Successful Coaching Newsletter</i>	
ARC MEMBERSHIP APPLICATION FORM	19

BETTER COACHING

SO YOU WANT TO BE GREAT “BIG EVENT” COACH: THREE THINGS THAT CAN MAKE OR BREAK YOU

Like athletes, some coaches thrive in high pressure situations and others fare poorly. The Olympic Winter Games in Salt Lake City were my fifth Olympic Games, and by closely observing coaches at the Games, I have noticed certain behavior patterns that exist in the coaches who excel under pressure. For simplicity's sake, I organized these behaviors into three key skill areas:

- self-knowledge,
- having a coaching-stress-thermostat, and
- building strong relationships with athletes.

I am regularly surprised by generally, successful coaches who have large “blind spots” or are unaware of issues that others recognize. Often, coaches are in the dark about the blind spots until something goes wrong at a big event. In preparing for big events, I suggest gaining self-knowledge in two areas, being able to define coaching excellence at big events and getting feedback on your strengths and weaknesses shown under stress.



SELF KNOWLEDGE

Define Coaching Excellence

In an Olympic Coach article (Spring 1997, “How Do You Know You Have Done a Good Coaching Job”), I wrote about how difficult it was for Olympic coaches to evaluate their own coaching performance

separately from the medal performance of their athletes. Forcing yourself to write a checklist of “behaviors of excellent big-event coaches” before the event can help increase self-knowledge. By rating your skills in each of these behaviors (e.g., daily organization, flexibility under pressure, optimism, ability to delegate, etc.), you have clues about your potential blind spots at big events. Of course, success at big events is related to excellence, but it isn't the same thing. As Joe Paterno said, “Success is perishable and often outside our control. In contrast, excellence is something that's lasting, dependable, and largely within a person's control.” If you strive for big event coaching excellence, success is likely to come.

Learn Your Stress Personality through Feedback

One of the most useful, and difficult, things a coach can do is receive honest feedback from the people around him/her. For big event coaching, it is useful to know how those around you see your strengths and weaknesses when you're feeling criticized, angry, nervous or depressed. These four conditions are regular visitors to coaches at big events. Knowing how athletes and other staff perceive you during those moments can help you develop a strong plan using your strengths and compensating for your weaknesses. Unfortunately, research has shown that the higher your position in an organization, the less likely you are to receive honest feedback. You need to have at least one person in your coaching environment who isn't afraid to tell you the truth. Do you have such a person?

A THERMOSTAT FOR COACHING SUCCESS

Like a thermostat that releases coolant to an engine in danger of overheating, it is important for coaches to have mechanisms to handle the increased stress of big events. Coaches who lack these mechanisms tend to get in “survival mode” during big competitions, and those just “trying to make it through” a major event do not excel at coaching. There are four key strategies to building your own stress-thermostat:

1. Controlling anxiety

People vary greatly in how nervous they get during competition. Nervousness is not a problem unless it interferes with your ability to coach your best. Unfortunately, I have witnessed numerous examples

of a nervous coach coaching poorly at important events. This can happen by

- making other staff nervous,
- worrying endlessly, about spreading nervousness to athletes,
- by over-coaching (saying too much),
- under-coaching (saying too little),
- focusing on not making mistakes instead of taking advantage of possible opportunities,
- becoming rigid, tense and/or irritable, and
- draining the fun from everyone around you.

If one or more of these symptoms happened to you at smaller events, they are more likely to occur at bigger events.

To battle coaching anxiety, you must be good at controlling thoughts, feelings, and your physical state. Identify the thoughts and feelings that calm you down, then develop the ability to call-up those thoughts and feelings when nervous. For example, one successful coach thinks of his family for 30 seconds before he gives a speech to his team. This allows him to believe his message of having fun, staying relaxed and being aggressive. In addition to thoughts and feelings, develop breathing and relaxation techniques to quickly lower your heart rate and slow breathing helps prevent your coaching body from undermining your coaching mind.

2. Stress-management strategy.

Successful coaches have some way to reduce overall stress. For most coaches, the most successful way is exercise, although some read, listen to music, write letters and play video games. Whatever strategy you use, the key is to continue the strategy during big events! Too many coaches give up a stress management strategy during the Olympic Games because they “just don’t have time.” If managing stress makes you a better coach, you can’t afford to stop managing stress in the big events where the most stress occurs.

3. Compartmentalizing.

A number of issues can interfere with your ability to focus on the present. They may include; unfinished business, questions about schedule changes, unexpected technical challenges, anger over stupid decisions, challenges in your personal life, and a variety of other issues. To have an effective meeting with an athlete during a big event, you must learn to compartmentalize (set aside those thoughts and focus on the here and now). Compartmentalizing is a key skill to master. Without it you may lose the ability to solve problems quickly and the ability to connect emotionally to the people around you. Simple techniques can help you develop the ability to compartmentalize. A strategy used by some coaches is to identify a physical place which becomes the last point where extraneous thoughts are allowed to enter your head. For example, a coach who always drives a car to competitions literally opens a glove compartment, takes a breath, drops in all extra unhelpful thoughts, closes the glove compartment and leaves those issues for after the competition. Another coach uses a two sentence verbal checklist before talking to individual athletes on competition day. Before approaching the athlete, he says, “Where am I? I’m right here, right now.” With this exercise, he assures all other thoughts are cleared from his mind so that he can attentively listen to the athlete.

4. Impulse control.

The powerful emotions that hit you at big competitions are one of the things that make coaching at big events so much fun. On the other hand, strong emotions sometimes overwhelm coaches. While anger and frustration may be real and appropriate responses to a bad call that could cost your athlete(s) a medal, effective big event coaches



learn to control the impulse to vent anger during the competition. Impulsive shouting, swearing or physical display of your feelings sends a negative message to other coaches and your athletes. At a recent Olympic Games, an athlete told me that an

angry outburst by her coach made her feel that the coach didn't believe she could win in her next event. In fact, the coach was angry, but not at the athlete's performance. The outburst sent her a message that caused her to assume he was angry about her performance. For a coach at a big event, finding a safe place to express feelings is one thing, but losing control is not acceptable. With everyone under stress, losing control is risky.

BUILDING STRONG RELATIONSHIPS WITH ATHLETES

The best coaches understand their athletes. Period. When coaching at big events, your athlete may surprise you by showing something you haven't seen from them before. A coach told me after a devastating and surprising failure at the Olympic Games, "I didn't think I had to talk to him about managing pressure. He is a World Champion! Of course, in hindsight, he had lots more pressure and expectations here. I worried about some of the others, but not him. I should have talked to him." Understanding your athletes and developing effective communication is the heart of effective coaching. Big event coaching is no different except the consequences of not knowing your athletes are bigger! Key items to remember about knowing and understanding your athletes include:

Don't overlook emotions. Feelings are often more important than thoughts at big events. People react differently to stress, and athletes may be on a completely different page than you. Know the early warning signals for confidence problems, nervousness, and over-arousal. One coach told me after the fact, "I saw her nodding and smiling, but I could tell she was so fired up that she wasn't listening at all." Taking five extra minutes with this athlete to calm and remind her of how simple the job was made all the difference for this Olympic medal winner. Develop good questions. Getting in the habit of asking, rather than telling, pays dividends at big events. Rather than guessing how athletes are doing, asking the right questions can help develop self-knowledge, self-control and selfconfidence. Among the best questions you can ask are those that remind athletes how they got where they are. For example, asking what they did to make training go so well the day before is a great way to talk to athletes before a big event. Remember, it is always a good idea at big events to focus on what to do, not what if. One of

my favorite exercises to use with a nervous athlete at a big event is made up of four questions:

- What is your job? Sample answer, "wrestle well tomorrow."
- How do you do that? Sample answer, "Attack the first minute, then go harder."
- Can you do that? Sample answer, "Yes! I'm in amazing shape."
- Will you do that? Sample answer, "Yes!"

Asking questions can become a routine that allows you to quickly understand what your athletes are thinking. Additionally, it lets athletes find their own solutions rather than simply agreeing with your solution. If athletes can't say it, they aren't likely to believe it!

Develop trust so athletes can express weaknesses. Guess how many athletes like to tell their coaches that they are afraid? Exactly, none do. Guess how many coaches want terrified athletes to keep it to themselves at a big event? Okay, maybe some would! But you cannot solve a problem if you don't know it exists. Athletes need to be able to tell you when they need your help, and when their own skills are over-matched by the situation. A dangerous myth athletes hold is that mental toughness means ignoring dangerous and distracting thoughts, anxiety, and self-doubt. Many athletes believe that talking about fear makes it real, while trying to push unwanted thoughts and feelings away equals mental toughness. Unless they have a strategy for controlling their thoughts and fears, however, this approach is doomed to fail at big events, where the demons are so much bigger! This problem increases significantly if athletes are afraid to admit weaknesses to their coach. Treating nervousness and self-doubt as being normal at big events allows you to discuss and solve these challenges with the



athletes. On the other hand, if mentioning these things is taboo, you won't know until you see them arrive in the form of defensive and tentative behaviors during competition.

Know the difference between "good quiet" and "bad quiet." You must know how your athletes look when they are ready to perform versus when they are trying to look as if they are ready to perform. Knowing the difference is the key to big event coaching, because knowing means that you know when to brake, steer and get out of the way. Of course, it isn't just quiet athletes you need to be able

to read. You also need to know what it means when an athlete laughs with others, does jumping jacks, talks on the cell phone or prays. You must know their normal competition routines and ones you are seeing for the first

time. Big events often bring new behavior, and you must determine if it is good or bad. The best way to determine good from bad is to compare with past behavior, which is always the best predictor of future behavior. Behavior seen for the first time at an Olympic Games isn't necessarily a bad thing, but it isn't always good either. If you and the athlete communicate well, it is rarely a problem to ask an athlete how they are doing, especially if that is your normal routine. Like athletes, you should always question why you are doing something for the first time at a big event.

The extra adrenaline that comes with big events like the Olympic Games and World Championships are like an ocean wave coming at you. If you have the three key areas figured out (self-awareness, coaching stress-thermostat and strong athlete relationships), you can catch that wave like a surfer and have a great and successful ride. If you don't, well, it's like a wave coming at you.

ATHLETE DEVELOPMENT

PRACTICE LIKE A GIRL, COMPETE LIKE A BOY – TRAINING THE TOTAL ATHLETE

I'd rather coach women in practice settings any day, but if we are talking about coaching in competition, I'd prefer coaching men." I have heard this statement or a variation of it from many coaches who have



worked with both female and male teams in a wide variety of sports. This pattern in references for different genders in different

situations, while not universal, is certainly common enough that it cannot be attributed to isolated coaching idiosyncrasies.

When I question those making the statements, the responses are again very similar. The preference for females in practice settings stems from the observations by these coaches that the female athletes listen better, are more interested in learning technique and in knowing specifically what their role is in different situations. Since most coaches find the details of technique and strategy fascinating, the attention of their athletes to these areas is naturally affirming. The stated preference for males in competitive situations is that male athletes can block out extraneous concerns and "just play," that they take initiative in making things happen, and that the goal of winning is never questioned and always shared, if not always accomplished. For coaches, who are universally competitive people, these responses in contests are viewed as natural and normal, and any other response perplexing, if not utterly incomprehensible.

So what causes these differences? Do our athletes

come to the gym with the predisposed characteristics to battle or to bond already hard wired into them? Or, are we training them to respond differently to practice and competition? I believe the answer is a combination of both factors. One way to unpack the issue of predisposition is to look at how athletes choose to behave when they are not being lead or coached. A friend of mine has taught eighth-graders how to play volleyball in co-ed physical education classes for over twenty-five years. He describes these patterns of behavior when the students enter the gym. The first boy who comes into the gym grabs a volleyball off the rack and either shoots baskets with it or tosses it up and hits it against the wall.

The first girl who enters the gym sits down on a bleacher first girl or she may sit down in a different place on the bleachers. As more boys enter the gym, the games they are playing either expand or multiply. After a number of girls are in the gym they will get in a circle and pass and set the ball around the circle, laughing and talking as they exchange the ball.

This differentiation is not universal, meaning there are girls that will display the characteristics typical for boys and boys who sit rather than engage, but they are the rare exceptions. The teacher reported to me that this pattern of gendered behavior has not changed for the twenty-five years he has been teaching volleyball to his classes. When choosing unsupervised interaction, the males choose competitive play, the females choose cooperative play. What happens when athletes are being coached? The 1990 Olympic Sports Festival was held in Chapel Hill, North Carolina. The eight men's and women's volleyball teams trained at Carmichael Gymnasium and an auxiliary facility. Bill Neville, a veteran coach with broad experience working with both males and females at both the elite and beginning levels, was the head of the volleyball delegation. In that role he spent considerable time observing the practices of the various coaching staffs. He made the following



generalization about the training: the women's teams, regardless of the gender of the coaching staff, spent a lot more time on technique and positioning drills than the men's team; the men's teams spent a lot more time in competitive, game-like drills than the women's teams. I tucked the comment away for further reflection and observation because I was curious as to whether this tendency was peculiar to volleyball or held true across various team sports. When I returned to my college administrative post, I watched a variety of teams in practices to evaluate Neville's hypothesis. The pattern he had observed in the volleyball practices

held true for our basketball teams, our baseball/softball teams, and our soccer teams. Like the volleyball teams with the practices, the women's teams spent more time drilling on positioning, and repetitive technique-oriented sequences; the men's teams spent more time in head-to-head, competitive, results-oriented sequences.

Since most of those coaching at the collegiate level had spent all of their time coaching either men or women, the

coaches were unaware that this difference in training methods was so prevalent. At our institution only men coached the men's teams but both men and women were in head and assistant positions with the women's teams. As with the Olympic Sports Festival, only the gender of the athletes had an impact on the nature of the practice activities, not the gender of the coach.

When I asked our coaches to reflect on the difference, the most common speculation was that the female athletes did not have the same physical skills in terms of movement, jumping ability and power as the male athletes, and, therefore, good technique was more critical to their success in playing the game. Shortly after these

conversations I went to watch a friend coach his son's six-year-old basketball team. When we entered the gym the boys were engaged in a variety of activities, some competing with each other by shooting long shots from outside the three point line, others playing H O R S E, still others trying to dribble without having another child steal the ball. The coach started the organized part of the practice with a few dribbling drills. The boys engaged in these exercises so lackadaisically that the coach stopped the drill and scolded them harshly, pointing out that dribbling was an essential skill to playing the game and they should pay attention to their method.

Next he introduced a shooting drill. My friend began by explaining to his charges how to hold the ball in their hands, where to position it in relation to their bodies and how their hands should look on follow-through. During this explanation the boys fiddled and nudged each other, rarely looking at the coach. As

soon as he gave them the go-ahead to practice this technique, they ran to the baskets and immediately started playing a game to see who could make



the most baskets in the shortest period of time. Shortly thereafter, about fifteen minutes into the sixty minute workout, the coach divided the boys into teams for competitive drills, scrimmaging first in three-on-two fast break situations and progressing to five-on-five drills. These six-year-olds had no skills or movement abilities whatsoever, yet they spent most of their practice time in competitive, game-like progressions.

My next opportunity for observation was at the Women's Volleyball World Championships in Sao Paolo, Brazil, when I accompanied our national team as an advisor. Our practice times frequently overlapped with those of the other women's teams. During the course of the two weeks I watched the

silver medalist Brazilian team and several of the Asian teams in training sessions. These were the best women's volleyball teams in the world, full of elite athletes with 15-20 years of high-level training and competition. They were, for the most part, above average jumpers with great body control and movement skills. Their practices, however, were amazingly technique oriented. They worked for long periods of time on footwork drills for blocking and transitioning from defense to offense. They spend considerable time on serving and passing drills. Only occasionally, for a few minutes at the end of a training session, did I observe anything that resembled a scrimmage or competitive exchange. These back-to-back observations of a beginning boy's team engaged mostly in game-like activity and elite level women's teams engaged mainly in technique training made me question the rationalizing lore I had been given by my peers as to the reasons for the gender differences in training

regiments.

The truth is that we as coaches are training our teams to their strengths because they are more cooperative and easy to deal with when engaged in activities in which they are comfortable. By our methods we reinforce what they

already do well—teach females cooperative play, teach males competitive play. What we must realize, however, is that by our focus on technique, positioning and tactics we short-change our female athletes. We don't subject them regularly to the uncomfortable stresses of competition. In the same vein, by our focus on battle, rivalry and proving oneself in training males, we leave them under-prepared also. They don't get exposed to the difficult discipline needed to learn stress-proof technique or the repetition necessary to refine integrated tactics. To make a female team more competitive, we must practice competing. We must accept that the "me versus you" nature of a contest can be difficult for those who choose cooperative play when left to their own devices. For females, then, competitiveness

must be taught and rehearsed. On the other hand, the male worldview grounded in proving oneself in opposition to others does not lend itself to the restraint of repetitive drilling. For males, then, the discipline to train, to learn proper technique must be taught and rehearsed. Each of you at this point can cite examples of elite athletes in your sport who are exceptions to these stereotypes—athletes who are both rigidly disciplined and insanely competitive. Yet I venture you could make a much longer list of those who didn't quite make it because they were accomplished in only one half of the equation.

The unanswered question for coaches is: how much competing do you put into your training if you are coaching women, or how much drilling do you demand if you are coaching men? It's a tricky question. Each coach must evaluate the capacity for anxiety-

producing activity among his or her athletes. My observation is that the younger the athletes the lower their tolerance for unpleasant experiences. Their primary motivation for engaging in the sport is to "have fun." More mature athletes realize that periods of stress in training are part of the process in pursuing athletic excellence.

I've also seen that, in most cases, a major jump shift from current practice does not work. Radical shifts make athletes edgy and confused about the goals of training. They quickly lose the sense of enjoyment they get from participation. The coaches of female teams who have the most success with teaching competitiveness are verbal and straightforward about what they are doing and why. Instead of assuming their athletes know how to compete, they make the practice of competing a regular, disciplined, and evaluated part of a workout. They also verbally deconstruct the inevitable conflicts that result from forcing their athletes into the uncomfortable situation of battling against each other. They accept the strife as part of the learning process. Finally and very importantly, they are

attuned to the level of anxiety on their team so they can quickly revert to calming, process-oriented drills when necessary. Those who failed at teaching competitiveness plunged their teams into a mano-a-mano struggle without explanation or debriefing. The resultant fretfulness and disruption of team chemistry is generally disastrous to relationships among the players themselves and with the coach. The feminine ability to put emotions into words and the penchant to problem-solve verbally makes authentic communication between coach and athletes, and among the athletes themselves a

prerequisite for success in training a female team to compete

Basketball's Rick Pitino is the coach I have observed who had the most success with training



males in repetitive, technique-specific, non-competitive sequences. He did this by separating his technical training from his team training. His morning sessions were individual—one or two athletes at a time, short—20 minutes, and frequent—four times per week. The focus was completely on technique—shooting the three, cross over dribble, stutter step and accelerate, head/ball fake and shoot, free throws, etc. The athlete was corrected each time he performed a technique incorrectly regardless of the result of his efforts.

I observed a session one day in which a player missed 90% of his shots. The coach running the drill stood where he could only see the player's form, not whether he made the basket or not. His comments were directed at the prescribed shooting form, which was correct most of the time. The coach said nothing about the misses. The sessions were also at game speed and very efficient. The athlete was breathing hard, yet aerobically, most of the time and, depending on his position, took between 250 and 400 shots per session. The main reason for the success of this training regiment is the individual

nature of the sessions. The athlete was working only to satisfy the coach and the soul focus of the coach was the technical accuracy of a particular movement. The absence of rivalry and very clear feedback patterns allowed for concentration on method rather than outcome. Unlike the successful female practices, there was no conversation and no explanation.

The mundanity of the individual training was numbing, even to me as a casual and occasional observer. But the effectiveness is also clear. Pitino's players are known at the professional level for their excellent fundamentals and healthy self-confidence in their abilities. Their technical efficiency has also been said to mask physical limitations allowing them a couple of years or a season as a professional that they might not otherwise have had. Training complete athletes will not happen automatically. It takes purposeful attention by the coach to the part of

Work and Play Differently” and is currently serving as the Executive Director of the American Volleyball Coaches Association.

STRENGTH & CONDITIONING

HOW MUCH STRENGTH IS ENOUGH

The majority of rowers use some form of resistance training in their preparation for the rowing season. While strength is obviously very important for a competitive rower how strong does a rower have to be? Does it really make any difference in rowing performance if you increase the weight you can squat from 500 lbs. to 550 lbs.?

Table 2. Strength to Weight Factors for Women

	High School	U 23	Club	National	Olympic
Squat	0.8	1.0	1.25	1.4	1.6
Deadlift	0.8	1.0	1.25	1.4	1.6
Bench Pull	0.6	0.8	0.95	1.1	1.2

Table 1. Strength to Weight Factors for Men

	High School	U 23	Club	National	Olympic
Squat	1.0	1.3	1.4	1.7	1.9
Deadlift	1.0	1.3	1.4	1.7	1.9
Bench Pull	0.7	0.9	1.05	1.2	1.3

successful competing that is difficult for them. Females must be taught, through frequent repetition, how to benefit from and be comfortable with head to head competition. Males must be taught, through daily rehearsal, how to benefit from and be comfortable with repetitive sequences focused on technique and tactics.

Without knowledge of each gender's predispositions, coaches easily gravitate toward a training regiment that reinforces that gender's strengths. The results are frustrated coaches and semi-prepared athletes. Just as we take responsibility for all other aspects of training, coaches must be accountable for teaching their athletes either the competitive fire (female) or the technical discipline (male) that is essential for athletic success.

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Every sport requires a certain level of strength to achieve optimal performance. Increasing strength beyond these levels does not necessarily improve performance and in some instances can be detrimental to performance. Once the ideal level of strength has been achieved the time needed to increase beyond this point could be better spent training something else i.e. rowing technique, aerobic fitness, flexibility, or anaerobic fitness.

How Much Strength do Rowers Need?

There are several ways to determine the strength demands of a sport. A biomechanical analysis of the forces generated on the foot stretchers, oar lock, or at the blade can provide good information on how much force is developed with each stroke. Elite rowers generate their highest forces on the first stroke of a race. These forces have been found to reach 1352 N, which is roughly equal to 135 kg, for men and 1019 N or 102 kg for women. Back in 1975,

research on the East German National team indicated that the minimum level of rowing strength required for international competition was 133 kg. With the increases in boat speed and changes in oar technology this is undoubtedly higher today.

A second method for determining strength goals is to base them on the strength levels of elite competitors. Presumably, if a competitor is medalling at the Olympics or World Championships they are strong enough to be successful. This doesn't hold true all the time because of differences in technical efficiency and aerobic fitness but it is a good starting point. In order to study maximal force generation at the catch Secher developed an isometric apparatus that was adjustable so as to suit individual rowing positions. Using Dutch Olympic, national, and club level rowers it was found that international rowers on average generated 204 kg of force. National level rowers generated 183 kg of force and club rowers generated 162 kg of force. Using other non-specific rowing tests – isometric arm pull, back extension, trunk flexion and leg extension – on the same groups of athletes, it was found that the higher the competition level of the rower the greater the strength in all tests. The use of non rowing tests of strength has its pros and cons. Force application in a boat is technically different than it is in a leg press or squat. While these tests are very good for determining if the muscles are strong enough to do the job they don't necessarily reflect someone's boat moving ability. Weight lifting tests do have the advantage of being low tech, they don't require computer links to strain gauges or force plates, and easy to administer. Concept II has developed a machine called the Dyno which works on the same air resistance principals as the erg but can be used for strength training and testing. This is a very well made machine and in time will probably become a standard tool for strength testing for rowers. Unfortunately, because it has only been on the market for a couple of years I can't provide any strength norms for it yet.

Strength and Body Weight

Strength can be classified as either absolute or relative. Absolute strength represents the maximum amount of weight that can be lifted one time. Larger people tend to have higher absolute strength than smaller people because they carry more muscle mass. Relative strength is the maximum amount of weight that can be lifted one time in relation to bodyweight. Relative strength is of more importance to a rower than absolute strength. The amount of weight in a boat affects the drag through the water. Increasing absolute strength is of no benefit if the weight gain offsets the strength gain by increase resistance through the water. Increasing relative

strength makes it easier to accelerate the boat with each stroke because strength has increased without increasing the drag. It is because of the importance of relative strength that the strength goals presented here are expressed as percentages of bodyweight.

Strength Goals

The table of goals above have been developed from the data I have collected during my consultation with rowers from novice high school rowers to Olympic Champions as well as from an examination of the force and strength research that has been done. Because the goals are expressed as multiples of body weight they are applicable to both heavyweight and lightweight rowers.

Using the Tables

To use the table take your body weight and multiply it by the appropriate factor. For instance if you were a 200 lb. Male club rower you should be able to bench pull 210 lbs. one time ($200 \text{ lb. Bodyweight} \times 1.05 = 210$). These tables are appropriate for rowers aged 15-35. Strength normally decreases after age 35 and those under 15 should be focusing on technique and body stability instead of maximum strength. In a future article I will provide tables for rowers over age 35. If you currently are able to meet these goals you can focus your training on other areas. If you can't meet these goals strength may be one of the things holding back your performance. Here are some pointers to help you reach your goals:

1. Take a Long Term Approach to Strength Development

Don't try to achieve these goals overnight. It may take several years for you to reach the strength goal at each competitive level. Notice how the strength level of Olympic rowers is twice that of the high school rower. The average age of Olympic rowers is 26-28 years old. This gives the high school rower about 10 years to double their strength. Rapid increases in strength are possible but won't likely be maintained from year to year.

2. Keep Everything in Perspective

Just because you haven't achieved the strength goals that I have outlined there is no reason to panic and wildly change your program. Decreasing the amount of aerobic training or technical training so that you can spend more time in the weight room may help you reach your strength goal but it may not make you a better rower. Look at all aspects of your performance before changing your program. Aerobic and technical training are far more important than strength is to your performance. If you feel that you are technically proficient and aerobically very fit then

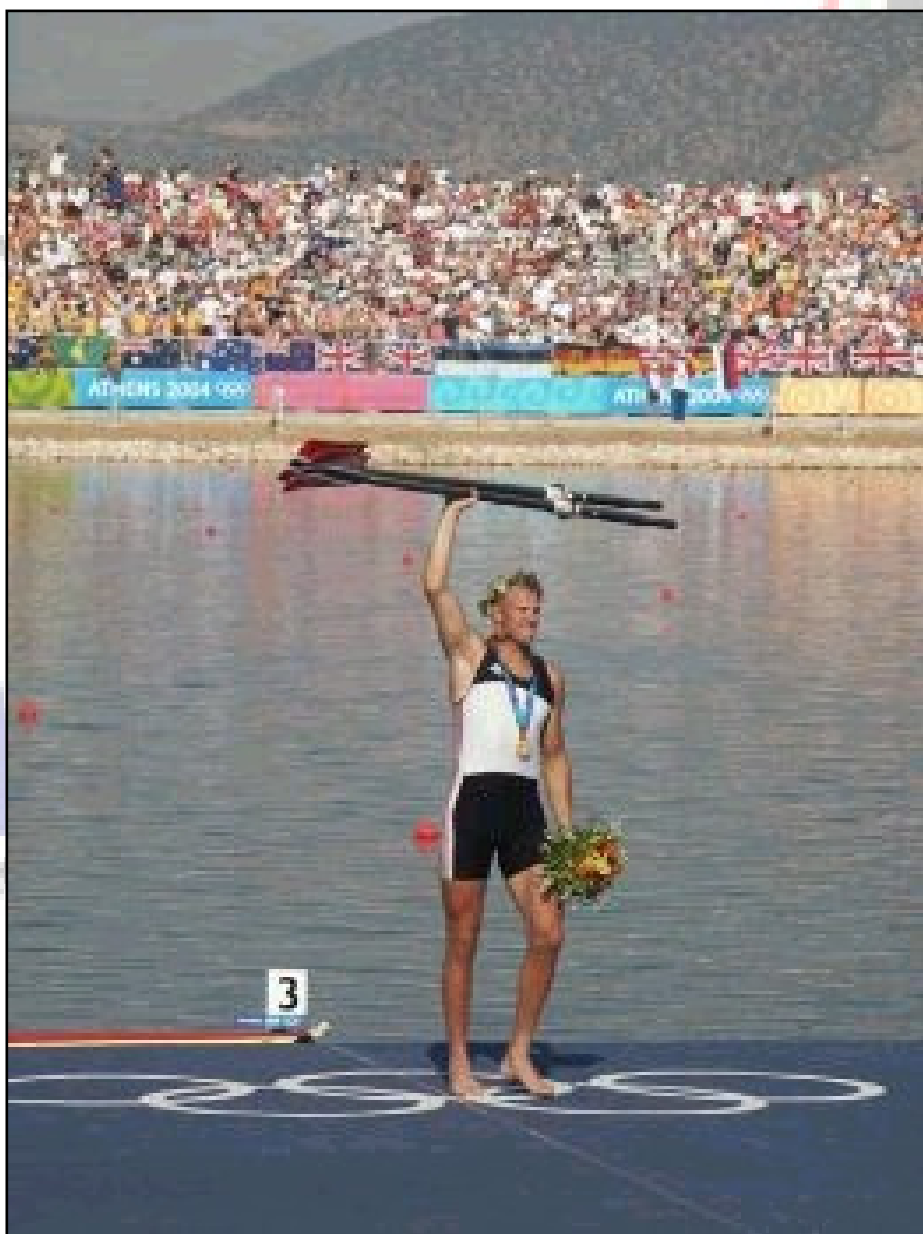
maybe you can decrease the time you spend on these things until your strength level improves. Otherwise work on the other things first.

3. Don't Over Do it

Keep strength training sessions short. Sessions that last longer than 45-60 minutes often lead to overtraining. Shorter more frequent training sessions cause greater strength increases than long infrequent sessions. Try to fit in 3-5, 45 minute sessions each week.

4. Focus on Strength not Strength Endurance

Until you have adequate strength, strength endurance training should be eliminated from the program. Strength increases do not occur with the high repetition, low resistance training common in strength endurance programs. Strength endurance training without adequate strength only means you are getting better at being weak.



STRENGTH AND CONDITIONING

THE KING OF EXERCISES: THE SQUAT

Walk into the many commercial gyms located throughout the nation and you will no doubt see a multitude of mirrors and machines spread throughout the facility. Now glance around and take note of all the patrons working out on the 'abdominal' machines' or doing twists on the rotation devices in an effort to 'spot' reduce. You no doubt will also see men and women wearing weight belts as they do endless sets of lightweight barbell or dumbbell curls, maybe with an actual bar in hand, but more than likely seated in a machine.

What do all of these observations have in common with one another?

These well meaning but ill-informed people are for the most part, exercising in a fashion that will not and does not contribute a great deal to the improvement in the fitness, strength or power levels of the human body. In many instances, they are simply enhancing their 'mirror' muscles and not developing the vital structural and muscular changes that will sustain them, as they grow older. Look carefully and you may see a squat rack tucked away in the corner, but you probably will not see anyone using it. This is the fate of the power rack in the majority of the largest commercial gyms, its there but not used very often. Why? Because of the gym owner's fear of someone getting hurt, doing squats. Or using so much weight that it 'scares other members away' or even worse yelling and using chalk to help keep the bar on the shoulders during a heavy lift intimidates other members.

Just what are all of these people trying to accomplish?

Is it to forge the 'Perfect body'? Perhaps they are trying to lose a bit of weight for the upcoming holiday or to tone up their body or maybe to improve their level of fitness. So you ask yourself just what does this have to do with the king of exercises. Well let me tell you it has everything to do with the squat, but in a slightly round about way. A well toned body, which may eventually lead to the perfect body (whatever that may mean) on the way to increased physical fitness and better health all begins with added muscle mass. Added muscle mass increases the basic metabolism rate of the body. This in turn helps to burn a higher percentage of calories throughout the day and into the night. Therefore, even as you sleep, your muscles are helping to keep you trim and slim. The lower body has massive amounts of metabolism increasing potential. The best and most efficient way to tap into this is by doing heavy legwork. Not machine leg curls or leg presses but with squats. Bar on the back, sweat producing, breath taking and heart pounding squats.

Naming the squat the king of all exercises is not without foundation; just look at a few of the benefits of this powerful activity.

- Lean muscle mass is increased
- Basic metabolism is faster
- Your general physical fitness and work capacity are positively improved
- Mental and physical energy levels are amplified
- You will sleep better
- Body fat will be lowered
- Endorphins, the body's natural painkillers are released into your body
- The heavy load on your shoulders, back and legs helps to make your bones stronger by increasing their mineral density
- The connective tissues of your body adapt to the load and in turn become stronger and better able to tolerate the additional stress of the weight

Squats have been blamed for nearly every body ailment in the book due to misinformation and incorrect squatting style. As in all new exercises, if you have not been squatting consistently in the past now is the time to talk to your doctor and get their opinion as to whether or not squatting will benefit you, considering your current health situation. As a lifter, you need to know the correct technique to do any exercise. Some are more tolerant of movement breakdowns than others-the squat is one that is not as forgiving of mistakes in form. Therefore, the following is a mini guide to a successful squat. Each one of the following is a contributor to a successful and correct squat.

Before you begin, make certain you have good spotters assisting. They can help you move backward out of

the rack or squat stands by gently guiding you backward into your set up position. Each spotter needs to know how many repetitions you are going to do, or attempt to do before the set begins. You and they must be talking so each one knows the part of the other. The amount of spotting on hand will be determined by your ability to lift the load, the spotter's ability to spot and the combined experience and strength of everyone involved in this endeavour. The power rack is an essential part of the weight room gym and it is the most used piece of equipment in the facility.

The power rack if you are unfamiliar with what they look like is a full cage built to protect the lifter during maximum attempts. The 'J' hooks hold the bar in place until the lifter removes it and backs out into the set up. Position these hooks just below the point where your clavicle hooks into your sternum as you face the bar. Placing them at this height allows the bar to be returned even after it has slipped a bit on your back or after you have slumped over during the lift. Always face the bar as you squat so you can be facing the hooks upon a successful lift. In other words, do not back into the 'J' hooks at the end of your lift. It is too easy to miss them and cause injury to yourself. The power rack has safety pins that are heavy enough to catch the bar if the lift is missed. Correctly setting these pins is an important step to safe squatting. The pins need to be low enough so the lift can go full depth but high enough to allow the lifter to settle down and rest the bar on them if the weight overcomes the lifter.

Hand positioning on the bar needs to be even from side to side yet still allow for total control during the entire lift. Looking at the bar you will see a series of knurling and grooves machined into it. All Olympic bars are grooved the exact same way and the current major brands of squat bars all have a heavy and deep groove pattern directly in the center of the bar. This is to help hold the bar on your back so it will not slip off so readily as would be the case with a smooth center. As you grasp the bar, notice where you have placed your hands in relation to the grooves. Each of your hands will determine the final balance position of the bar on your back. The bar can be gripped in two ways; one is with a closed grip with the thumb and fingers encircling the bar. This is the recommend way and the safest way to hold the bar. The second manner of holding onto the bar is with the open grip, i.e. the thumbs are not circled around the bar. A lack of wrist and shoulder flexibility will predetermine the grip in most cases. Once your hands are in position it is time to get under the bar.



Babies naturally assume a good squatting position. Head up, back straight and heels on the ground

Look directly at the center of the bar, dip under it with your head and rise up on the other side while still keeping your hands on the bar. Positioning the bar on your back is a matter of preference towards either the high bar or low bar style of lifting. In the high bar method, the bar will be resting on top of the posterior deltoids right at the base of the neck. This has a tendency to cause irritation just under the bar. It is used with a wider than shoulder hand grip and tends to cause a straighter up style of lifting. The low bar, on the other hand has the bar placement resting on the lower part of the shoulders. This is a point where the deltoids and traps come together. It is essentially a shelf for the bar and is very comfortable but technically harder to master for an inexperienced lifter. This position of the bar makes for a shorter moment arm of the lift and contributes to a higher load capability. It is well worth learning from a knowledgeable coach.

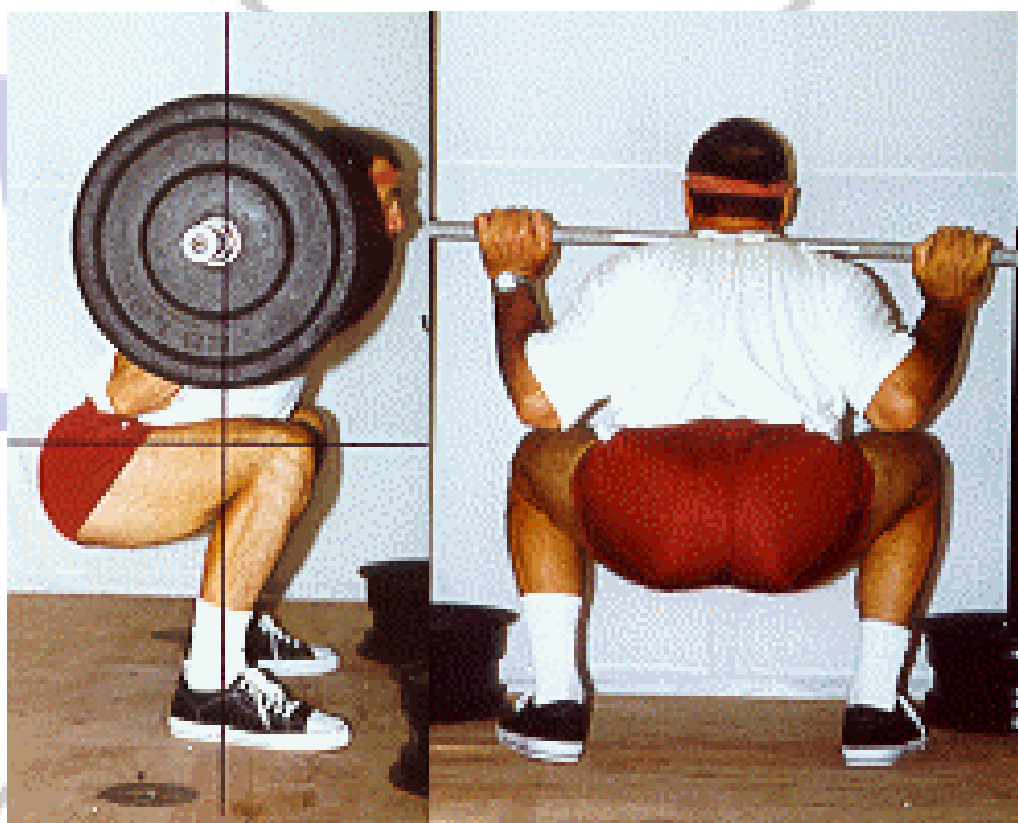
The use of a lifting belt is controversial. My position is it is NOT NECESSARY unless you are nearing peak weight. Up until then it is an unnecessary crutch and should be avoided. Relying on the belt will not build up the supporting structures of the body. Synergism of muscular action is the key to heavy lifting and a lifting belt takes away this coordinated muscle affect. Strength adaptation takes place under properly designed programs. It does not need artificial assistance at the beginning of a career. Lifting within your capacities and building up your strength will serve you well in the end. Leave the belt off.

Should you look up or down?

The head should be neutral or extended ten to twenty degrees with an eye on the horizon for maintenance of balance. If your head drops it carries the back with it and the back soon flexes forward. Once the back flexes tremendous compressive and shear forces result in the lower back regions. Correct form and correct technique should always precede any weight increases on the bar.

Back position

The back has to be held in a neutral to slightly arched position or injury will result. Bracing your abdominals adds additional support to the center of the body to assist the lower back muscles in carrying the load. If you are unable to lift the weight, then re-rack it or lower it to the safety pins and remove some of the load. If your back rounds off consider the many excellent back exercises to increase strength in this critical area of your body. It takes only a moment of foolishness or inattentiveness to seriously injure your back.



The initial steps back

With your hands and back set up, its time to move the weight out of the rack. Start out by lifting the weight with your legs and not your back. Now move it off the 'J' hooks. Take a small step back ward, followed by a second small step with the other foot. Move them into the set up position as you are stepping backward. Make certain they are both aligned evenly and are a little wider than shoulder width apart at the end. The wide stance may be uncomfortable at first but as you become accustomed to it, you will find it produces the most powerful lift style of all.

Controlling your breathing

While under the heavy bar it is easy to get into the habit of holding your breath during the execution of the lift. Holding your breath does help in moving the heavy iron as it stabilizes your core but it comes with a cost to your overall health. And that cost is a tremendous increase in your blood pressure. High blood pressure

has been known to directly cause damage to your body by raising the risk of having a stroke, causing a heart attack, damaging your kidneys and increasing the risk of a blood vessel aneurism. Any of which will cause a quick cessation of your lifting for the day.

Descending with the bar

Now that your feet are in position take a nice deep breath and get ready to give the weight a ride. The downward portion of the lift always begins with your hips moving backward first. Bending the knees first sets you up for problems in the middle and end of the lift by causing you to have to adjust for the flexed knees. Moving your hips and buttocks to the rear will set the squat up perfectly. Visualize trying to touch the wall with your buttocks as you move backward with the hips. Beginning with the hips allows the body to drop into a picture perfect squat with the lower legs perpendicular to the floor and the back straight and solid. The hip flexors and extensors, two of the most powerful muscle groups in the body will be at their maximum potential in this position.

If you have ever seen a small child of one to two years old squat you will have witnessed an absolutely perfect squat. Their little bottoms are nearly resting on the floor, their little lower legs are perpendicular to the floor and their backs are ramrod straight. Here is an excellent exercise to begin learning how to squat if you are unfamiliar with this technique. Stand next to an open doorway, hold onto the doorjamb with both hands held about mid chest height. Place your feet one foot away from the wall and lean back onto your heels. Now drop down to the floor. Do not let go of the doorjamb or you will fall backwards. Notice where your lower legs are, nearly straight up and down, aren't they. This is the ideal squat position and with the exception of many elite lifters one that is rarely achieved in the amateur ranks.

The bottom position

Once you have arrived at the bottom of the lift the easy part is over because now you have to get back up again. A successful rise separates the 'wannabes' from the 'doers'. The start back up begins with a hard push on the bar with both hands, and a sharp rise of the chest and shoulders. This starts the body and bar back up again by counteracting the downward movement of the weight. If you have not kept tight you will have flexed a small amount and this action somewhat nullifies this tendency. Try to wiggle your toes at the bottom, if you are unable to do so then you are already tipping forward. Flexing leaves you in a negative part of the power curve to get back up as it turns the early part of the lift into a good morning exercise and not a squat. You will unconsciously realize this just as your spotters consciously see it when your buttocks rise before your head and chest start coming back up. This is a Dangerous Situation that must be controlled immediately or a severe injury is looming around the bend.

Getting back up

Now that the weight is moving back up again, it is time to push harder and accelerate the bar. Keep the weight centered on your shoulders and back as you push upward. Maintain total control of the bar at all times during the lift.

Replacing the bar into the rack

As you approach the end of your set the spotters should be closing in to assist the re-rack process. Make certain you are in the 'J' hooks before releasing your grip. Each of your spotters will, or should, be paying attention to this placement and should have their hands on the bar helping to guide it back into place on the pins. The squat done correctly is truly poetry in motion and a beautiful thing to see. So start 'squattin'.

Article Reference

This article, written by Danny O'Dell, appeared in Issue 21 of the Successful Coaching Newsletter.

STRENGTH AND CONDITIONING

THE FULL SQUAT FROM THE TRAINERS PERSPECTIVE

We dissected the technique of performing a full squat in Successful Coaching Issue 21- [The King of exercises: the Squat](#). In this issue, we are going to describe what the coach should be looking at while the lifter is under the bar. The task of the coach is to be constantly aware of the proper mechanics of the squat and then 'cueing' the lifter to perform them in the right manner to make progress and to avoid injury.

In order to be 'technically' correct and successful, the athlete has to develop engram patterns very precisely during the early developmental stages of the learning curve. By definition, an engram is a neuromuscular, subconscious pathway of performing a physical movement. Superior exercise adeptness occurs from repeating this training process. At the top level of training the mind no longer consciously dwells on the exercise movement, instead the elite lifter is able to focus on the sheer muscle energy necessary to move the weight. Thus, the move is ingrained in the subconscious and automatic. Can you envision yourself stepping out from the rack with a six hundred pound barbell and then having to decide if you needed to first move your hips back or bend your knees to begin the lift.

A well-trained coach will effectively assist the athlete performing the exercise by providing both verbal and visual cues as to how best to perform the move. Improvements in technique will be seen in most lifters if the coach pays attention to the details of the lift and provides meaningful feedback. This means the coach has to observe the athlete from a 360 degree perspective. Videotape is an excellent motivator, as the lifter will clearly recognize errors of form, especially with the coach reviewing the tape with them.

The coach must always keep in mind one important aspect:
Is the movement under total control?

If the load is not completely under control, all of attending spotters must take prompt action to protect the lifter from harm. The coach will have to pay close attention to these three major safety points:

Telling the spotters to assist in re-racking the bar if they are not aware of the lifters predicament
Lowering the weight on the bar so the exercise may be completed correctly the next repetition
Making certain the athlete gets additional rest time before trying the next set

Coaching points

Observation from the front vantage point at the beginning of the lift:

- Has the lifter centered the bar firmly on the back and shoulders
- Is the lifter in an upright standing position and not leaning over- the bar placement will dictate this portion of the stance.
- The low bar position causes the athlete to bend forward in order to keep the bar centered over the balance point of their body
- Is the chest held high at the beginning of the lift
- Is the head flexed forward or extended slightly upward, but not looking at the ceiling
- Is the bar properly situated and secure on the back, i.e. not dropping downward
- Is the back neutral to slightly arched and in a braced position
- Is the lifter standing straight and tall and not tilted to either one side or the other
- Remind the lifter to abdominal brace

Start of the lift from the rear observation point

- Is the bar symmetrically loaded with the correct weight on both ends
- Are the collars securely attached to both sides
- Is the bar correctly positioned, spaced and resting on the shoulders/upper back at the correct height for the athlete
- Are the lifters hands in the positioned properly and placed evenly on the bar
- Has the lifter placed their body under the bar and are they in the correct position to lift the bar off the hooks
- Has the head remained correctly in line with the back and not flexed forward
- Is the back rigid, slightly arched and braced

Start of the lift as seen from the right side

- Are the feet aligned evenly and not forward or backward relative to one another
- Is the athlete standing tall
- Have the hips started the rearward movement, or have the knees started bending first
- Is the back staying straight and solid
- Has the head stayed in line with the back in a neutral position or is it slightly extended
- The two-three steps back and the initial set up as observed from the front of the lifter
- Is the chest still kept high
- Have the two to three steps to the rear been small enough to clear the rack pins

- Is the body still vertically aligned or has it twisted off to either side
- Is there movement in the hips as the bar set up is completed
- Has the movement been stabilized and did it stop
- Are the feet spaced at least shoulder width or wider
- Are the toes angled outward and remaining in line with the knees

The back out and set up as seen from the rear

- Is the movement still under control by the lifter
- Is the back still solid and in a slightly arched position
- Are the hips starting to move from side to side in a continuing effort to balance the weight load
- Are the feet moving around or are they steady and sticking to one place on the platform
- Is the bar steady on the shoulders or is it moving around instead of being held firmly in place

The back out and set up as viewed from the athlete's side

- Are the back out steps under control
- Is the athlete standing tall under the load
- Are the feet correctly positioned in relative to one another and front to rear
- Is the back solid, slightly arched and braced

The descent as observed directly in front of the lifter

- Is the head lined up with the back
- Is the head positioned correctly and not tipped off to one side
- Are the hips even or are they moving to the side
- Are the feet in the correct position and in line with one another
- Did the hips move backward before the knees started to flex

The descent as seen from the rear

- Are the hips coming backward towards you before movement seen or felt anywhere else
- Is the back staying braced, solid and slightly arched
- Are the lower legs remaining perpendicular to the floor
- Is the head still in the upright position and not tilted to one side

The descent observed from the sides

- Did the hips move backward before any other movement was started
- Is the back staying braced, solid and slightly arched
- Is the head being kept in line with the back or slightly angled upward 10 to 20 degrees
- Is the load centered in the middle and slightly to rear of the feet
- Is the body tilting forward to any great extent
- Does the bar move downward in a straight line: there should be very little movement fore and aft of this imaginary vertical line
- Is this imaginary bar path appearing to go from down the ears to the middle of the feet
- Has the lifter accelerated the bar toward the bottom of the move
- Is the upper body angle in relation to the floor remaining the same throughout the descent phase of the lift
- Are the heels firmly in contact with the floor

The bottom position as seen from the front

- Is the head in line with the rest of the body
- Is the bar still placed evenly on the shoulders
- Has the body remained square with the lifting platform or has the athlete started to tip toward one side
- Has the body continued to face the front of the rack or lifting platform or have they twisted to one side
- Are the knees still aligned over the feet

The bottom position viewed from behind the athlete

- Is the back appearing to remain tight, slightly arched and braced or has it flexed at the bottom
- Is the bar even on the body from side to side or has it shifted to one side
- Has the body tilted to one side
- Is the athlete twisting to one side or the other

The bottom position-viewed from the sides of the athlete

- Is the back rigid, slightly arched and braced
- Is the chest still out
- Is the head parallel to the floor or extended slightly at 10 to 20 degrees
- Are the lower legs close to perpendicular with the floor
- Is the angle of the back and joint hip similar to those of the knees/lower legs

- Is the body slanted to one side or the other
- Has the body twisted to one side
- Are the heels remaining in contact with the floor

The ascent as seen from the front

- Did the initial upward move begin with the head and chest starting upward
- Did you notice the hands beginning with an upward push on the bar
- Is the torso angle staying the same throughout the upward phase
- Is the body positioned straight to the front
- Has it tipped to one side
- Has it twisted on the long axis
- Did the body tilt forward
- Is the head still stable and at the correct angle
- Were the legs and body moving from side to side

VERY IMPORTANT POSITIONAL NOTE: have the knees remained over the feet or did they move into a valgus position (knees move in an inward direction from the midline of the body). A Valgus position may be dangerous and harmful to the Anterior Cruciate ligament. It must be avoided during the lift.

Viewing the ascent from the rear

- Did the first upward move start with the chest, head and arms
- Did the body shift backward during the first move up
- Did the buttocks rise before the head, chest and arms moved upward
- Did the buttocks move laterally
- Is the bar moving evenly upward without a windmill side to side sway
- Is the loaded bar staying in line with the rack and not twisting to one side or the other

The ascent from the sides

- Did the buttocks begin to rise before the bar moved upward
- Did the knees cave into the valgus position
- Did the head and chest remain upright at the beginning of the ascent
- Did the back remain solid, slightly arched and braced
- Are the knees remaining in line with the feet and not going into valgus or varus (knees move in an outward direction from the midline of the body) positions
- Did the body torque to either side

Summary

This is just a small checklist of many of the obvious cues and clues that all professional coaches should have either in a written form or in firmly planted in their minds as they coach their athletes. Dr. Stuart McGill once stated 'Practice makes permanent'. Make sure your athlete's practice time is well spent, technically perfect and constantly re-enforcing and perfecting their individual and correct neuromuscular engram patterns.

Article Reference

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This form must be completed and returned by fax to Jamie Croly (National Secretary) at 011 781 2987 or by Email at jcroly@stithian.com. You will be notified by email of the receipt and acceptance of the membership application.

Membership fee of R100.00 per year will be invoiced after membership has been accepted and processed.