

WEIGHTLIFTING USA

December 2007 • Vol. 26, No. 3



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RECORD

Jeff Wittmer - 94kg
2007 National Champion
Pan Am Games team member

Wattone
SPORTS
Performance



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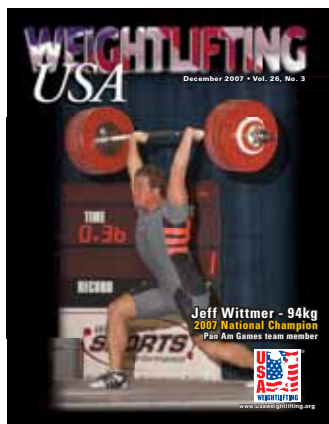
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USA WEIGHTLIFTING MISSION STATEMENT

USA Weightlifting's mission is for our athletes to win Gold Medals in the Olympic, & Pan Am Games and World Championships through the development of weightlifting in the United States.

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1 Olympic Plaza,
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Phone: (719) 866-4508
Fax: (719) 866-4741

E-Mail: usaw@usaweightlifting.org
Web Site: www.usaweightlifting.org

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2007 Editorial Calendar

Spring	Feb 15	Mar 15
Summer	May 15	Jun 15
Fall	Aug 15	Sep 15
Winter	Nov 15	Dec 15

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PRESIDENT'S MESSAGE

By Frank Eksten



It has been a difficult time for many of us as we have mourned the loss of a close friend, tireless co-worker and a tremendous supporter of USA Weightlifting, our Executive Director, Roger DeGarmo. We are just now realizing the quality of work Rodger was doing for our sport and how many new and exciting projects he had in the works for USA Weightlifting.

An emergency meeting of the Board of Directors and staff was called immediately after the memorial service that was held in Colorado Springs for Rodger. At this time a plan was developed to continue the day to day operations as we had the World Championships coming up in the next several weeks.

The Board then approved Dennis Snethen to assume the role as our new Executive Director in October following the World Championships. He would move to Colorado Springs and fill that position in an interim role at least through the Olympic Trials. We are very fortunate to have Dennis available for this role as he was one of our final candidates for the Executive Director position until he withdrew his name for consideration and Rodger DeGarmo was promoted to that position in March of 2007. Dennis moved to Colorado Springs in the second week of October

and is now in place and working hard as we prepare for 2008.

Before accepting his role as Executive Director, Dennis resigned as President of USA Weightlifting. The Board of Directors then voted to have myself, Frank Eksten, assume the position of President.

As we work through this difficult transition, it has been the goal of our Board of Directors and staff to continue the day to day operations of USA Weightlifting with as little interruption as possible through the end of the quadrennial. We must continue to support our best athletes as they prepare for the Beijing Olympics and to continue to develop our younger athletes, as they are our future. All this must be done with as little disruption as possible to the athletes.

As we move into 2008, Dennis and I will certainly try to do the best job possible for USA Weightlifting for the remainder of the quad. We ask for your patience as we all work through this challenging time. We are working hard with USOC to maximize their support for our programs. There will be difficult decisions in the near future as we are always facing new challenges in our sport. We will do our best to keep the membership informed and to do what is right for USA Weightlifting.

Thank You ♦

EXECUTIVE DIRECTOR'S MESSAGE

By Dennis Snethen



On August 28th, 2007, USA Weightlifting was faced with some devastating news. Rodger DeGarmo, our newly appointed Executive Director, passed away in his sleep from heart failure. He was on assignment in Chicago doing an onsite visit for the 2009 Pan Am Weightlifting Championships. Rodger leaves behind his wife Suzanne, and two daughters, Maggie and Paige. He was a person of high integrity and his family always came first. He was also a dedicated employee who loved the sport of weightlifting. Rodger was a great friend of mine and he will be truly missed.

Rodger DeGarmo's service was conducted in Colorado Springs, with the help of the United States Olympic Committee. His service included many family and friends. Eulogies were presented by Mark Colligan, University of Nebraska coach, Don Typer (Rodger's first weightlifting coach) and Wes Barnett, United States Weightlifting Hall of Fame member and Olympian. After the services the Board of Directors of USA Weightlifting met in the office and decided that I would serve as Interim Executive Director to help the sport move forward.

Traveling to Colorado Springs to work in the office was an unusual experience for me. I was known as the volunteer President of the Federation and National Office for the

past seven years and now I am an employee for the membership. The first day I started working in the national office, I felt as though I was walking into a hornet's nest. My first mission was to complete all deadlines, to get ready for the American Open and to prepare the agenda for the Board of Director's meeting in November. Also, little did I realize, the USOC had many documents and procedures that I needed to take care of.

I would like to thank your new USA Weightlifting President, Frank Eksten, for all of his support and volunteer hours in helping with the transition. Also, the entire office staff, led by Laurie Lopez, has been a great help. Some of the areas that I'm working on, which I have had plenty of experience with, are fundraising, public relations and managing staff. My personal goals are simple: fundraising, media coverage and increasing the membership. In the coming months I will be contacting the current sponsors and focusing on new sponsors. I plan on posting more information on the website and listening to our members on new and exciting ideas on how to promote and market our sport. We have a lot to be thankful for, as we just received four slots in the Olympic Games with our women's team and three slots for the men's team. Now it's time to promote the athletes and support them as we approach the Olympic Trials on May 16th and 17th in Atlanta, Georgia. Mr. Dean Alford, CJ Stockel and the organizing committee have been working hard to make sure it will be a great event! ♦

MEMORIAL - RODGER DEGARMO "1969-2007"

By Mike Gattone

To my Friend Rodger;



They say that "life isn't fair" and when a well loved 38 year old man with a wonderful family and a dream job dies in his sleep, this certainly seems true.

The shock, disbelief, and sheer insanity of this realization is still so raw, but no matter what any of us does the reality remains; our family member, friend, leader, and co-worker is gone. This is a reality that we will all have to deal with everyday. And yes, life isn't fair, horrible things happen often and there's just no logical explanation, but sometimes, wonderful things happen to.

A young man can find a beautiful woman, fall deeply in love with her and realize the dream of becoming her lifetime partner. He can be blown away by the loyalty that leads her to follow him around the country as he quests after jobs in his field. He can be comforted by the fact that even though he is traveling, often she is at home keeping everything right and steady and ready for when he comes back.

He can be blessed beyond imagination with two precious children. Children which he has watched develop and grow into young women, and which he could adore and cherish and talk about even when he was away from them. He could be blessed by these children who provided him warmth and comfort as he spoke to them on the phone just before he went to bed when he was traveling for work.

A young man can be blessed with family. Parents who love and support him, and a brother who he shares pride with and an unbreakable bond which holds them together even when they were living far apart.

Life isn't fair, and many men go through it struggling for purpose or not having "windmills to slay", but

sometimes a young man gets a dream that drives him and takes over. The drive seems illogical and the goal seems to not make sense, but to him it is passion, and purpose. It fills him with a wonderful thrill, it energizes him, it gives him a gift that many are not granted. The dream may be as obscure as wanting to lift great weights over his head, but it is his dream and it fills him. And even though it punishes his body; his back, and his knees, it also allows him to perform admirably on an elite national stage. The dream takes him around the country, and allows him to meet and bond forever with other crazy people who also have the dream. It defines his friends, his employment and much of his free time, it is wonderful and special and he gets to love it and live it everyday.

Life isn't fair, and many men go through it working at drudgery and holding down jobs they hate, but sometimes a man chooses to take jobs following his passion, his purpose, and his love. The jobs are not always glamorous, and they certainly don't always pay much. The jobs cause him and his family to move and to struggle, but the jobs allow him to do what he was born to do. They allow him to meet and impact young people that grow to love him and need his strength and leadership. And in the end, his fortitude and dedication can lead the young man to attain one of the highest possible positions in his small field serving as a leader to his surrogate family and trying to better the sport he loves. Being in the position may seem improbable to some, but to those that knew him well they realize that his class, quiet dignity, confidence and pure passion for what he is doing make him the perfect candidate. Achieving this position is a culmination and affirmation that he was doing just what he was always meant to do.

Life isn't fair and many men go through it with few close friends and relations. But thankfully some men are gifted with friendships that go beyond mere physical proximity. They are the products of bonds that are forged in dirty gyms, in cars and vans

on athletic road trips, in hotel rooms sharing dreams of greatness and goals of accomplishments, and in venues of competition around the country and world. Most people can't understand these bonds but the ones who are blessed with them can't believe their great fortune and don't know what they would do without them.

Life isn't fair and many men die lonely and in obscurity. But once in a while a man is blessed with spending the last day of his life pursuing the dreams and visions that he has always wanted, that he was born to. He gets to make grand plans, and be working with friends he loves. He gets to spend his last night sharing a wonderful meal and a good glass of wine with these friends talking about his family, and his mission. He gets to go to bed following a comforting talk with his children and his wife, and he gets to hunker down knowing that they are waiting for him at home and in just a few more days he will be met by their loving embraces.

Life isn't fair and the early taking of our friend Rodger DeGarmo is proof of that. But life is also wonderful and magical and the content of Rodger's short life affirms this. In this horrible tragedy we must have faith and hope and be reminded to love and cherish every moment from ripping another callous while training, to watching our children being born. And finally we must be reminded to love and hold each other because we don't know when we will see each other again.

Rodger's inner light and humanity united and filled many of us friends, acquaintances, and business associates. This light allowed Rodger to bring people together, even those who may have previously been rivals. In the end, it is this light in him, and all people that I will choose to remember as I go forward in my life, and hopefully this is the legacy for our sport, families, and lives that Rodger has left for us.

I will miss you my friend!

*In love and remembrance,
Mike Gattone* ♦

2007 NATIONAL CHAMPIONSHIP HIGHLIGHTS

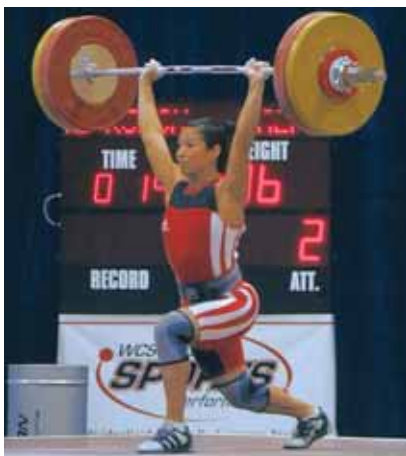
By Kara Yessie
High Performance
Communications Coordinator



Schaumburg, IL- The 2007 National Championships were hosted by Chris Cook, Mike Gattone, Lou Mangsol and Roger Nielsen, all natives of the Chicago area. This premier event was held at the Renaissance Hotel & Convention Center and was the primary qualifier for the 2007 World Championships in Chiang Mai, Thailand & the XVth Pan American Games in Rio de Janeiro.



In the 48 kg class, Stacy Suyama, lifting unattached, snatched 73 kg for a PR and also clean and jerked 87 kg for a PR, achieving a lifetime best total of 160 kg. Melanie Roach, competing in the 53 kg class, made a notable comeback to the sport, achieving her best total since her return. Roach, representing the Calpians Weightlifting Club, ended with 78 kg in the snatch and 106 kg in the clean and jerk, for a total of 184 kg, only missing her last attempts in both competition lifts. This put her in a good position to qualify for both international events.



In the 58 kg class, it was Hilary Katzenmeier of East Coast Gold's lucky day. Katzenmeier went 3 for 3 in the snatch with 74 kg, 76 kg, and 79 kg for a PR in the snatch. This series of good fortune continued in the clean and jerk, with Katzenmeier



attaining another PR with 91 kg for a lifetime best total of 170 kg. Once Jackie Berube, an OTC resident athlete teammate, failed to lock out any attempts in the clean and jerk, Katzenmeier moved into the first place position. She received the championship title, breaking Berube's streak which would have been her 4th consecutive national champion title.

Even though it may not have been Natalie Woolfolk's best performance in the 63 kg class, she was able to secure her spot on the national team with her opening attempt with 98 kg



in the snatch and 114 kg in the clean and jerk for a 212 kg total. Carissa Gump, also competing in the 63 kg class for East Coast Gold, snatched 88 kg and had a PR clean and jerk of 117 kg, equaling her best total of 205 kg. Gump's performance put her in contention for a World team spot and it would be confirmed at the conclusion of the championships.



In the 69 kg class, it was a battle between Aimee Anaya and Cara Heads, both of Team Southern California. Anaya went 3 for 3 in the snatch, making a PR with 91 kg. Heads attempted to beat Anaya in the snatch by 1 kg after completing her second attempt with 91 kg, but was unsuccessful. This put Anaya in first place due to bodyweight advantage.



In the clean and jerk, Anaya was successful with 105 kg on her second attempt. Cara Heads moved to 106 kg on her 1st attempt to move ahead of Anaya, only to miss the jerk. Heads repeated with 106 kg, missing the jerk again. In her final attempt, Heads was able to lock it overhead for a 197 kg total. Anaya was the remaining lifter with one attempt left, loading 107 kg on the bar. Anaya was determined to win the championship title and was triumphant on her final attempt, coming away with a 198 kg total. Doreen Fullhart, lifting in the 75 kg class for the Front Range Weightlifting Club, achieved her lifetime best total with 221 kg, lifting 104 kg in the snatch and 117 kg in the clean and jerk.

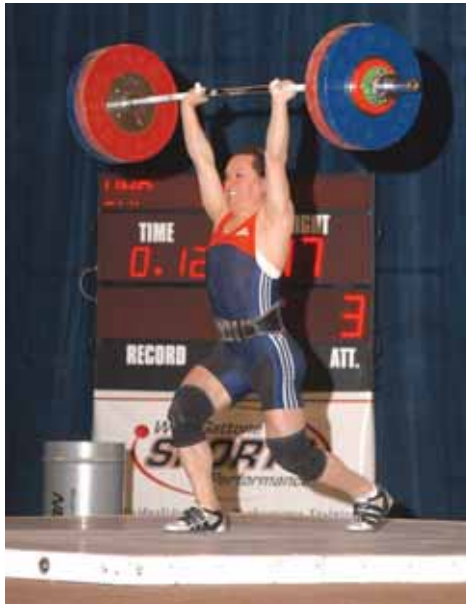


Lifting in the 75+ kg category was Emmy Vargas representing Nomad Weightlifting Tribe, and Cheryl Haworth, lifting unattached, both residents of the OTC. The spotlight was on Emmy Vargas as she pulled out all the punches, not letting anyone stand in her way of making the 2007 Pan Am Games team. Vargas opened with 100 kg in the snatch and moved to 105 kg, only to miss the weight behind. Disappointed with second attempt, Vargas took a chance and moved up to 107 kg and it was successful! But that was only small glimpse of what was to come in the clean and jerk.



Vargas opened in the clean and jerk with 130 kg, 3 kg off her best, making it look easy. On her second attempt, she made a gutsy move by increasing the weight by 9 kg to 142 kg which would put her on the Pan Am Games team. Vargas racked the weight, only to have the enormous weight push her over and roll behind her. She had 2 minutes to recover and come back out to attempt over 300 lbs. This time Vargas cleaned the weight and stood up with what appeared to be little difficulty and fired the weight overhead with a solid lockout! Vargas secured her spot both National teams. An incredible performance by Emmy Vargas, who demonstrated her excitement as she bounded off the platform toward Coach Bob Morris. After all the commotion had subsided, it was Cheryl Haworth's turn to grace the stage. Cheryl made all her snatches (118 kg, 122 kg, 125 kg) and clean and jerks (145 kg, 150 kg, 155 kg), going 6 for 6 for a 280 total. Haworth was the only lifter in the competition to go 6 for 6 in all lifts to receive the Rich Schut's award.

Upon the completion of the final women's session the two teams were named. The 2007 Pan American Team in descending order is: Cheryl Haworth, Natalie Woolfolk, Melanie Roach and Emmy Vargas, with Jackie Berube and Carissa Gump as the alternates. The 2007 World Championship team in descending order is: Cheryl



Haworth, Natalie Woolfolk, Melanie Roach, Doreen Fullhart, Emmy Vargas, Stacy Suyama and Carissa Gump, with Aimee Anaya and Jodi Vaughn as the alternates.



In the men's categories, much of the excitement began in the 69 kg class with the battle between Henry Brower and Jake Johnson. Brower, representing Team Savannah, opened with 125 kg in the snatch and Johnson followed with a 1 kg increase at 126 kg. Brower's second attempt was also successful with 128 kg. Johnson of the Mid West Weightlifting Club jumped to 130 kg on his second with another solid lift. Brower was not able to return the favor, giving Johnson the lead in the snatch. Johnson made all 3 snatch attempts,



Johnson made all 3 snatch attempts,



including a personal record. Brower and Johnson both made their 1st and 3rd attempts, finishing with 162 kg and 159 kg respectively. Johnson added a couple more PRs totaling 286 kg for the championship title, with Brower just 1 kg shy of Johnson's PR day.



In the 77 kg class, Matt Bruce, lifting for Gayle Hatch, had a lifetime best across the board. Bruce finished with a PR snatch of 145 kg and clean and jerked 182 kg for another PR, and a 327 kg total. This landed Bruce a spot on both the Pan Am Games team and World Championship Team. Kendrick Farris from Shreveport Bossier was on another record streak, after equaling his best with 155 kg in the snatch, Farris pulled out a gutsy attempt with 200 kg on his 3rd attempt after jumping 10 kg from his second attempt. Farris totaled 355 kg for the championship win.

The 94 kg class was intense between the top 3 contenders. Vardanian, lifting unattached, didn't appear to be a threat, but sneaked up behind Wittmer of Wesley Weightlifters in the snatch. Vardanian was 1 kg shy of Wittmer's PR snatch with 152 kg; however, he also set a PR, went 3 for 3, and broke the national junior snatch record in this category. Martin, also lifting



unattached, fell short of Vardanian's record lift, finishing with his 2nd attempt of 150 kg. In the clean and jerk, Vardanian opened with a personal record of 185 kg but was unable to put anymore weight overhead, finishing with a 336 kg total. Next up was Martin with 189 kg. After missing his first two attempts with that weight, Martin decided to take a break and move up while Wittmer made his first attempt with 193 kg. This put the pressure on Martin, asking for 196 kg on his 3rd attempt, a 7 kg jump. This led to an incident of misfortune when he lost the bar behind, grabbing his arm in severe pain. He was escorted off the platform to be treated in the medical area. Finishing off the 94 kg class was Wittmer with his successful opening attempt with 193 kg for a 345 kg total and a spot on the Pan Am Games team.



In the 105 kg class, Cody Gibbs of Shreveport Bossier equaled his best total with a 160 kg snatch and 195 kg clean and jerk, giving him a 360 kg total. In the final session of the 2007

National Championships, Casey Burgener and Zach Schluender were the last competitors to achieve World Team spots in the 105+ kg category. Schluender had a lifetime best performance with a 162 kg PR snatch, a 198 kg PR clean and jerk and a 360 kg total.



Upon the completion of the final men's session the two teams were named. The 2007 Pan American Team in descending order is: Kendrick Farris, Chad Vaughn, Matt Bruce, Casey Burgener and Jeff Wittmer, with Zach Krych and Derrick Johnson as the alternates. The 2007 World Championship team is: Kendrick Farris, Casey Burgener, Chad Vaughn, Jake Johnson, Henry Brower, Matt Bruce, Cody Gibbs and Zach Schluender with Donny Shankle and Jeff Wittmer as the alternates.



Congratulations to all the athletes and their fine performances at this year's National Championships. Cheryl Haworth and Kendrick Farris were named the best lifters of the competition. They were presented

with lifting figures from a local artist.

Many thanks go to the local meet organizers, volunteers and local sponsors for their outstanding efforts at making this year's championships a success.

For complete 2007 National Championship results please visit: www.usaweightlifting.org. ♦

RESIDENT COACHES REPORT

Women's Resident Program Report

By Robert Morris, Women's Resident Coach



There are currently 14 women training in Colorado Springs, 11 residents and 3 training specials.

The residents are Jackie Berube,

Doreen Fullhart, Carissa Gump, Cara Heads, Cheryl Haworth, Hilary Katzenmeier, Megan Kranz, Kelly Lynch, Sam Turnbull, Emmy Vargas, and Natalie Woolfolk. The 3 training specials are Rachel Hearn, Amanda Hubbard, and Heather Snethen.

Two weeks after returning from the world championships Doreen had surgery on her hip. She has been working hard on her rehab and we expect that she will be ready for the nationals.

The current training cycle for the American Open started on August 20, which gave us 15 weeks. All of the following figures are what was planned for the training cycle. The first 5 weeks were high volume and medium heavy intensity. The average volume was 344 reps and the average intensity was over 81%. These numbers varied from a week of 388 reps to a week of 265 reps, and a high of 83.6 % intensity to a low of 77 %.

The second 5 weeks, which we are finishing up tomorrow, will be an average of 238 reps and 85.5 %

average intensity. These included a high of 285 reps and a low of 178 reps, and high of 87% and a low of 82.4% intensity. The third and final 4 weeks (I am not counting the last week of training because the last week will only have about 40 to 60 reps depending on which day the athlete will be competing on), the 4 week average will be 225 reps and 86 % intensity. This will include a high of 245 reps and a low of 190 reps, and a high of 88% and low of 82.5% intensity. These reps and intensities are counting only weights 70 % and above. The reps that are counted are in squats, pulls and all lift related exercises.

These numbers will vary with each individual athlete, taking into account injuries, illness, overtraining, and individual needs and weaknesses. As a rule the reps do not vary more than about 15 and the intensity by 2 percent per week. There is usually one workout per week that we bring in a few of the athletes and we work on technical problems that the individual athlete is having problems with. These workouts are with weights that are under 70 % so those reps are not counted. This workout is done on Tuesday mornings. The rest of the training schedule is Monday, Wednesday, and Friday twice a day and Tuesday and Saturday once.

The morning workouts usually consist of squats and a lift related movement, such as power snatch or snatch from blocks. The afternoon workout will be a lift and pulls, with Fridays being both lifts and pulls. Saturday is more individualized to work on weak points. After the lifting workout is over, the athletes go next door to the strength and conditioning gym and do some general training to work the opposing muscles and the core area. A sample of what we do next door would be leg curls, dumbbell curls, lat rows, wrist curls and hanging leg raises. We do these for 3 or 4 sets of 8 to 10 reps, except for the abs which will be up to 25 reps per set. The first half of the cycle we do agility work twice a week before the Tuesday afternoon and Saturday workouts. The agility work is stopped when we get into the high intensity workouts.

When the workout is over, the athletes go to the recovery center where they will either cold plunge, hot and cold contrast, sauna, steam, or get a massage. These vary from day to day so their bodies don't become accustomed to any one method. We have found that since the recovery center opened up the athletes are able to come back more prepared for the next workout. ♦

Men's Resident Report

By Paul Fleschler, Men's Resident Coach



Currently in the program, the athletes are making their final preparations for the American Open. Although we

are preparing and training hard for this competition, our true training objectives are continuing to peak for the National Championships and the Olympic Trials.

We currently have nine full-time resident athletes and one training special. Our full-time residents include: Casey Burgener, Travis Cooper, Steven Jarvis, Pat Judge, Zach Krych (off-campus), Robert Murphy, Zach Schluender, Norik Vardanian and Henry Woodard. Kyle Yamauchi is a training special through the American Open.

Our current training regimen for the American Open can be broken down into four 4-week phases: a general preparation phase (weeks 1-4), a strength phase (weeks 5-8), a power phase (weeks 9-12) and a direct preparation phase (weeks 13-16).

In the general preparation phase (GPP) our main emphasis is to increase general conditioning and prepare the body for the increased

volumes and intensities in later phases (work capacity). In addition, we evaluate the technique of every athlete and use this time to make their technique as efficient as possible. Although technique work is consistent through all phases, the GPP phase allows us to spend more time refining technique without overloading the major joints i.e. knees, back, wrists and shoulders. We also use this time to work on any evident weaknesses an individual athlete may have such as leg, overhead, core or general overall strength.

The goals of the strength phase are to continue to increase work capacity through repetitions by means of compound movements. Some examples of compound movements might be clean + front squat + jerk for doubles or 2-3 cleans + jerk or 3 position snatches etc. Because these are compound movements, working through multiple joints for repetitions, the effects on the neuromuscular system are much

greater than even the classical movements themselves (Siff & Verkhoshansky, 1998). The main objective is to increase functional strength while increasing intra-muscular coordination (recruitment, rate of firing and synchronization) through the use of appropriate intensities and volumes (Siff & Verkhoshansky, 1998).

Following the strength phase is the power phase. The main purpose of the power phase is to use the strength gains from the previous cycle(s) and convert it to power, hence the name. Emphasis is still placed on the compound movements; however the reps may be lower with some movements while increasing the intensity. While the classical movements, snatch and clean & jerk, are seldom used in the strength phase in favor of compound movements, the power phase introduces the classical movements on a more regular basis, typically two snatch and one clean & jerk per week.

The fourth and final phase is the direct preparation phase. In this phase, the classical movements are of the highest importance by emphasizing higher intensities more frequently while still assuring the most efficient technique. In fact, the volumes of all exercises, which are now limited, are lowered in favor of higher intensities. In addition, recovery is increased by lessening training frequency. By reducing volumes and training frequency while emphasizing the classical movements with higher intensities it is hoped that the athlete will peak for the upcoming competition with positive results (Siff & Verkhoshansky, 1998).

References

Siff, M. C., & Verkhoshansky, Y. V. (1998). *Supertraining: Strength Training for Sporting Excellence* (3rd ed.). Johannesburg, South Africa: University of the Witwatersrand. ♦

USOEC/NORTHERN MICHIGAN UNIVERSITY WEIGHTLIFTING RESIDENT ATHLETE PROGRAM

By Andy Tysz



I would like to take the liberty to thank the selection committee and the Board of Directors for the opportunity to represent USA Weightlifting in the position of Head Coach for the Resident Program at

the USOEC Training Center. This is truly an honor for me and I pledge to pursue all avenues in my power to ensure the best possible training environment for the students selected to participate in the program.

I would also like to thank Anna Martin. She was instrumental in providing a smooth transition of leadership through the summer and beginning of the semester. She was a great assistance in accelerating the learning curve by bringing me up to speed on various policies and procedures of the program and institution.

Our first official day of training was August 27th, 2007. The students all came in at varying levels of fitness and preparedness. That being said, each and every student came in with an exceptionally high level of motivation. From day one, each person has

been open and receptive to a new training philosophy, much different from what they had experienced in the past. Overall, our training has been successful thus far and I am anticipating continued positive results. We have already had a few personal records set in various lifts after only a month and a half of training. This is a testament to the work ethic of the group, their continued support of each other and trust in the program. I would be hard pressed to be more pleased with the results and attitudes of these students.

The training has been arduous for some of the students not accustomed to phases of higher volume in preparation for a healthy and successful competition phase, but they continue to have pleasant and positive attitudes toward the training and this is the case for all of the students. This demeanor is something I stress as a contributing factor to quality recovery and intense training sessions; I believe they are starting to identify with its efficacy to high performance. The resultant progress is a confirmation of this. I have every confidence this will continue with only minor setbacks from time to time.

NMU Resident Athlete Assessments

Alex Argueta

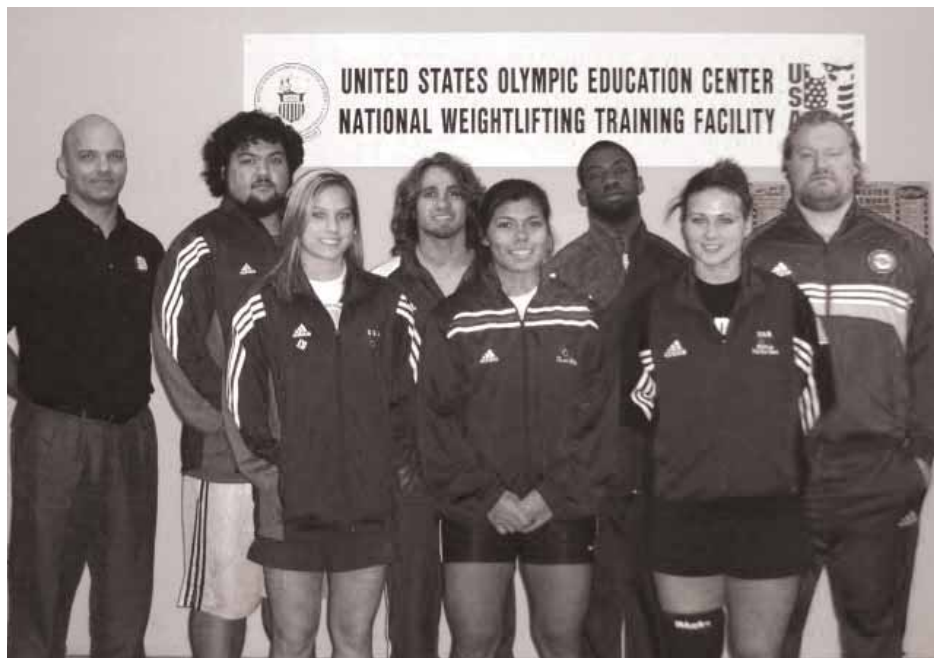
Alex came into the semester coming off a cessation of training following her performance at the Sicily Trophy Tournament in Italy. She attributed this self-imposed layoff to minor nagging injuries and a general sense of fatigue. We have worked with diligent communication to bring her back into a condition to prepare her to move into each phase with a maximal output. This approach has been going well with an indication of this through her achieving a personal record in the power clean of 77.5 kg on Monday, October 8th.

Ashley Suggs

Ashley came into the semester with a decent level of fitness, but no weightlifting experience throughout the summer. She spent the summer rehabilitating a knee surgery which was never fully taken care of from last year. She has made exemplary progress with a couple of bumps in the road, but nothing to hinder training. She has also done some lifts she has not achieved in a long time.

Chelsea Kyle

Chelsea came into the semester with a decent level of strength, but a relatively low



volume tolerance. Her prior training has been geared toward a more Bulgarian approach. We have taken our time developing her abilities to endure the higher volumes and it has paid dividends. She was able to achieve a personal record in the power clean of 75 on Monday, 8 October and matched her best competition CJ of 85 kg on Wednesday, October 10th.

Collin Ito

Collin has also been improving on his tolerance to higher volumes and seeing the early benefits of this type of approach. We are keeping a close communication of his readiness status and planning training accordingly. He is another athlete that has seen some advanced results; he produced a personal record power clean of 155 kg on Monday, October 8th.

Justin Brimhall

Justin came into the semester with a very high work capacity. We have been taking advantage of this by pushing the volume in efforts to get his bodyweight to the appropriate levels after some loss over the summer due to manual labor type of em-

ployment. He has seen good results and much more consistency in his snatch movement, already surpassing the results from this year's World University Cup. We are striving to get him more consistent with the jerk movement.

Paul Roberts

We have made some headway as recently as this week on his technical efficiency and consistency. His overall strength levels are high, so our main objective has been to smooth out his movements and maintain a more consistent understanding of the importance of his positions.

Vance Newgard

Vance came into the semester with exemplary levels of work capacity and movement consistency. We have been working to go even further with this and reap the benefits of his hard work over the summer. ♦

MEMBER CONTRIBUTIONS

Many thanks to the following members for their generous support of USA Weightlifting programs.

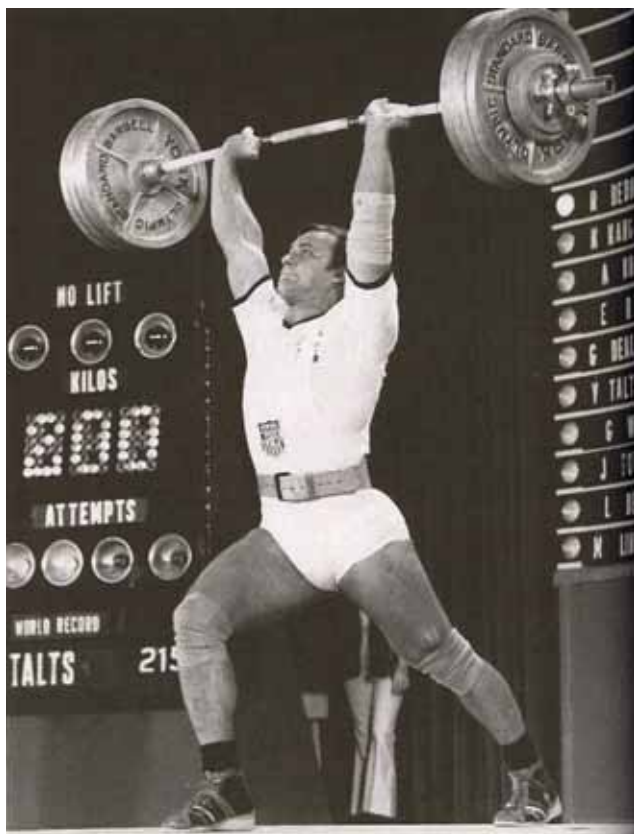
Banister, Thomas
 Boros, Janos
 Burke, Sean
 Byrd, Warren
 Carleton, Peter
 Davis, Robert
 Davison, Leah
 Dick, Andrew
 DiLustro, Stephen
 Dimitriou, Peter
 Dowswell, Miles
 Eitelberg, Michael
 Erickson, John
 Espinosa, Dennis
 F2 Foundation (2007 Men's WL)
 Fera, Michael
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 Gilman, Adam
 Hadley, Gregg
 Hagerman, Nicole
 Helwig, Michael
 Hornsby, William
 Houlihan, Dan
 Jacobson, Yvonne
 Kono, Tommy
 Lansky, Richard
 Lovat, Mark
 LWC45 - War Eagle WLC
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 Rigney, Colin
 Salgado-DeMello, Brenda Lee
 Schadle, Nathan
 Scoles, Donald
 Selander, Alan
 Springman, Anthony
 Storie, Beth
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 Talbot, Brittany
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Lift Strong



BOB BEDNARSKI: A TRUE STAR OF US WEIGHTLIFTING

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For those who were active in the Iron Game during the mid to late 1960's, especially in the US, one weightlifting star shined more brightly than perhaps all the others – “The Ninth Wonder” – Bob Bednarski. He was a true phenomenon, who had more charisma than any other lifter I have ever had the pleasure of seeing perform. But his dominance was fleeting and his descent from the perch on Mt. Olympus that he once enjoyed was nearly as rapid as his rise. His story is at once a wondrous example of the magic that one person can conjure when hitting on all cylinders, while at the same time an apocryphal tale of how fast one can fall from greatness when conditions change.

Bob Bednarski began his weightlifting career at the age of 15. It was at this time that he made his first attempt to see what he could lift. The outcome of that test was to offer little evidence of the greatness he was to achieve. At a bodyweight of 125 pounds, he struggled to lift 90 lb. overhead, not a bad result, but certainly nothing extraordinary. Yet that struggle to raise 90 lb. developed in the young man an almost instant affinity for the barbell and, almost immediately, Bob began train seriously. His body adapted very rapidly to his training and nine months after his first attempt at lifting a barbell, Bednarski decided to enter the Rhode Island State Weightlifting Championships. His bodyweight had increased significantly by this time, so he competed in the 148 lb. bodyweight category. He managed to press and snatch 170 lb., then C&J 215 lb.

This was very respectable lifting for an athlete with such limited experience and it earned him a second place finish, to a former National Champion. But, more importantly (as future years were to demonstrate), Bob's performance led to his finding a coach who would be with him much of the rest of his career. It was the man who had defeated Bednarski at the State Championships – Joe Mills. A legendary coach in the New England area, Joe was highly respected nationwide. Mills was impressed with the enthusiasm of this youngster. He was soon teaching Bob the finer points of lifting at Joe's Central Falls Weightlifting Club.

Bob continued to gain bodyweight while improving his technique. Within months, he moved his three lift total up to 700 pounds for Rhode Island State record in the 165 lb. bodyweight category. His bodyweight continued to increase as he grew (Bob was to reach a height of 6'1”), so him moved up to the 181 lb. category. The new bodyweight agreed with him and he soon broke all the New England teenage records in the 181 lb. category, including a 275 lb press, which was a Sr. New England record as well as a Teenage record.

In May of 1964, Bednarski won the Jr. Nationals with a 900 lb. total and was named best lifter overall. His total was a new Teenage American Record. A month later, he competed in his first National Championships. While he failed to make a total, he did press 307 lb. for a new Junior World Record. Before turning 20, Bob pressed 321 lb. for another Junior World Record, snatched 270 lb. and made a 340 lb. C&J, for a total of 930 lb. By November of 1964, his total had increased to 960 lb., which was enough to win the North American Championships. Buoyed by garnering this prestigious title, he returned home and trained harder than ever, increasing his press to 330 lb., his snatch to 290 lb. and his C&J to 380 lb. His progress was so outstanding that Strength & Health (S&H) magazine featured Bob in their “Lifter's Corner” early in 1965. During an interview published as part of the article, Bednarski predicted that he'd give a tussle to Bill March, at the upcoming 1965 Nationals. More importantly, in a hint that the fearless nature that Bob was to become famous for, he said “However, even if I am able to win the championship of my own country, I will not be satisfied until it become the best mid-heavyweight lifter. In 1968 I plan to total in excess of 1100 pounds, which I'm sure will necessary for victory” (at the Olympic Games).

Bob did not perform well at the 1965 Nationals, totaling only 950 lb., which was well below his best. But as was typical for Bob at this stage in his career, a setback led to his developing even more determination to succeed. He soon decided he needed to increase his bodyweight once again, to move into the heavyweight division. Bednarski reasoned that extra bodyweight, and a greater focus on squatting, would boost his lifts substantially. He also recognized the need to eliminate some of the flaws that he then had in his technique. He believed the resulting

combination of greater strength and better technique would lead him to greatness, and he was right.

At that time, there was only one bodyweight category above the 90 kg. division – heavyweight. Most lifters balked at moving up from 90 kg. to heavyweight, as the weights needed to excel in that unlimited bodyweight category were much higher than those needed to be competitive in the 90 kg. category. But there was another reason some avoided the heavyweight class – it was dominated by a 6'5", 160 kg., giant named Leonid Zhabotinsky, who many felt was invincible. Nevertheless, Bob's move to the heavyweight division soon proved to be a good one.

Bednarski's strength improved dramatically as his bodyweight increased. His meteoric improvements were reported regularly in S&H magazine, inspiring all who read about them (as one who did, I can attest to that firsthand). By October of 1965, Bednarski had moved his total up to more than 1100 lb., via a 360 lb. press, a 326 lb. snatch and a 417 lb. C&J, at a bodyweight of just over 220 lb. A month later, at a bodyweight of 225 lb, Bob pressed 381 lb, snatched 340 lb. and made a C&J with 441 lb. At this point, he was again interviewed by S&H and was asked for another prediction regarding his future lifting at a higher bodyweight. He opined that if there is a 242 lb. division added to the Olympic schedule, he would compete there. However, he indicated that if only the unlimited division was available he would increase his bodyweight to approximately 250 lb. and would press 420 lb., snatch 390 lb. and lift 500 lb. in the C&J. It's amazing how close this "wild" prediction (as most viewed it at the time) turned out to be.

In late 1965, Bob relocated to York, PA, to train at the famous York Barbell Co. gym, and work for the company. And he seemed to flourish in his new environment. By January of 1966, Bob's best lifts had improved to: to 381 lb. in the press, 350 lb. in the snatch and 446 ½ lb. in the C&J. In March, he competed in the Eastern States Championships, pressing a relatively low 355 lb., but snatching 345 lb. and lifting 430 lb. in the C&J, for a total of 1130 lb. He also shouldered an American Record exceeding, 450 lb. in the clean, but could not stand up from the squat position.

Bednarski repeated the same total at the National Championships that year, to earn

second place position to Gary Gubner. However, he did succeed with a C&J of 445 lb., which weighed out at 446 ½ pounds, enough for a new American record. Except for the C&J, Bob's lifts were well below his bests. Bob Hoffman, who wrote a report on the Nationals in S&H magazine, speculated about Bednarski's weak nerves in competition.

Weeks later, Bednarski raised his total once again by making lifts of 407 lb. in the press, 342 lb. in the snatch and 452 lb. in the C&J, at a bodyweight of 238lb. Lifting at the North American Championships shortly thereafter, Bob pressed 375 lb. and snatched 340 lb. Those lifts placed him behind the man who had defeated him at that year's Nationals, the silver medallist from the 1965 World Championships, Gary Gubner. By the time Gary was finished lifting, Bob needed a C&J of 440 lb. to defeat the powerful Gubner and Bob came through to make that lift under pressure. It was the first time Bob had done what he needed in the heat of a close competition in a long time. His performance earned him a spot on the two man team that would represent the USA at the 1966 World's Championships in East Berlin.

In Berlin, Bob shined. He finally pressed 182.5 kg., snatched 160 kg and made 195 kg. in the C&J. Those lifts earned Bob and gold medal in the snatch and a silver medal, overall, in the heavyweight division, second to the great Zhabotinsky. In recognition for his fabulous improvements and high placing at the Worlds, Bob was selected for the S&H magazines' inaugural "Lifter of the Year" award (covering the year of 1966).

In January of 1967, Bob sustained a minor injury to his elbow, but by National Championships in June, he was back in good form. He pressed 410 lb., snatched 330 lb. and made 435 lb. in the C&J to win his first National championship, and clinch a berth on that year's Pan American Games team. Prior to the Pan Am's, the news from York was that Bob was ready to put up the biggest lifts of his life and show the giant Zhabotinsky that he was closing in fast. At the Pan American's, Bednarski pressed a personal record 418 ¾ lb., suggesting that the reports on his condition had not been exaggerations. He then snatched his opening 330 ¾ lb. But on his next attempt, after lifting 347 ¼ lb. overhead, he struggled to control the weight, which was out of position and falling behind him. That resulted

in a severe elbow dislocation.

Bob's 1968 Olympic dream, if not his career, seemed over. Experts at the time gave Bob little chance for recovery, and one of the major weightlifting publishers and writers of the time went so far as to say that such was the inevitable fate of someone who tried to challenge the great heavyweights at such a relatively diminutive bodyweight.

When Detroit's Russell Wright, one of the premier sports medicine experts in the world of that time, examined Bob, he didn't have the heart to tell the young man that it appeared 80% of the ligaments that supported Bob's elbow had been seriously damaged by the accident at the Pan Am's. While doc Wright encouraged Bob as he provided some physical therapy to the young athlete, the doctor privately told Dick "Smitty" Smith (York Barbell's trainer at the time) that Bob's career was effectively over (and Wright was known as an optimist when it came to treating sports injuries). After Bob returned from his visit with Wright, the local York physician who had taken over Bob's case from Wright forbid him to lift until further notice. But Bednarski was eager to train so Smitty had Bob pressing the empty bar overhead and doing leg work almost immediately. Over a period of several weeks, the strength and mobility in Bob's elbow improved dramatically, to the point where he pressed 400 lb. from the rack by the time he had a follow-up visit with the York physician. The amazed doctor said he'd never seen such a fast recovery from such an injury and gave Bob the go ahead to begin training again with very light weights (of course he was unaware of what the athlete had actually been doing - don't try that at home!).

With the doctor's green light, Bob began to do C&J's and eventually light snatches. He and Smitty began to think about competition again and the opportunity came in the form of an Invitational competition in NY, organized by Murray Levin in December of 1967.

Exactly 100 days from the day of his tragic injury at the Pan American Games, Bob stepped on the competitive platform once again in NY. It was no token appearance. After lifting rather cautiously in the press and snatch, Bob smashed the American Record in the C&J with a lift of 450 lb.!

A month later, at the Philadelphia Open

Bob was determined to inaugurate the new (in the US) 242 ½ pound category). He weighed-in at 241 lb. Bednarski pressed 415 lb. and snatched 321 lb. He then opened his C&J with 415 lb. and those of us in the audience thought he was done. But Bob did the unexpected and called for a second attempt at 455 lb. The competition had gone on so long that it was already about 2:30 AM and when Bob's intent to break his own record was announced to the audience, it was as if an electric charge spread instantly through the crowd. We were stunned but thrilled that Bob would try a record so soon after his previous record-breaking performance and after such a long day of lifting. Bob strutted to the stage, paced back and forth behind the platform and then raised his arms upwards, then out to his sides in what was to become his signature pre-lift pose. Then he went to work. He pulled the bar to his shoulders fairly smoothly, but not easily, pushed up hard to get out of the squat and then jerked the barbell solidly overhead. The audience (of which I was a member) went insane. Those of us who had missed Bob's December miracle had been treated to an unexpected New Year's gift and we were all buzzing with excitement over what we had just seen.

As we were beginning to gather our things for the trip home, we heard something we absolutely could not believe – that Bob would take still another attempt! It is probably that very few of those in the audience could imagine why Bob would take another attempt after breaking the record, or what it would be. But we were not kept in suspense for very long. It was announced that Bob had decided he would make an attempt at the absolute world record 220 kg. (485 lb.), with his own attempt at 220.5 kg. We were floored. Imagine a man who perhaps 130 days earlier had been written off as a weightlifter, a man who had just performed two miracles only weeks apart, attempting a weight that was a full 30 lbs over the personal record that he had just established! And remember that he weighed less than 110 kg. – a full 50 kg. less than the man who held the record he was chasing!

Yet, minutes later, there he was, 220.5 loaded and Bob pacing back and forth. I have never personally had the pleasure of seeing an audience at any event so mesmerized and electrified. People were screaming and waiving their arms to encourage this most amazing of men who intended to reach for the stars that night. Murry Levin,

who was to go on to become a long term President of USA Weightlifting made a rare show of emotions – he was standing on a chair screaming for Bob to attack the barbell.

After much preparation, Bob pulled on that bar with everything he had, and in a flash he was under it – no deadlift here! Though he tried valiantly to stop the bar, it soon crashed off his shoulders to the platform. Unfazed, Bob jumped up and growled. He seemed to be signaling that while the barbell had won this time, it wouldn't be so lucky the next time out. And he was right. I consider myself lucky to have been in the audience that night to have seen such a remarkable attempt, one that would have to rank as one of the most courageous ever performed. I doubt anyone who was there will ever forget that evening. It was pure weightlifting magic.

How did Bob manage to create his "magic". Certainly one key factor was his ability to create and sustain a belief in his ability to prevail against all odds. In a conversation with Bob during the 1970's, he told me that one of the keys to his ability to sustain a positive mental attitude was a mental habit that he developed during his meteoric rise. He learned to almost automatically and instantly categorize all statements made to him as either positive or negative. If he categorized the statement as positive, he would listen carefully to it, then commit it to memory and repeat over and over to himself, emphasizing and expanding on the most motivating aspects of the message he had heard. So if someone said "You are going to be a World Champion some day", he'd think not only about the statement (which he'd hear over and over in his mind) but also picture that outcome. The result was a tremendous boost in his confidence and enthusiasm.

When he heard a negative remark like "That Zhabotinsky is too big", he would immediately brush it aside in his mind, never to hear of it again. Of course in later years, when Bob was beginning to make some mistakes in his life, such as using certain drugs, this mental approach that had made him impervious negativity also caused him to dismiss good suggestions from people who told him he could not succeed if he continued to do use those drugs. So an extremely powerful tool can generate disaster if used improperly, but unbelievable success if used appropriately.

Another factor that contributed mightily to Bob's success was his legendary for his ability to concentrate. Bob once told me that, when he was at his very best, he was concentrating so hard on making his lifts that he sometimes didn't know whether he had made them or not. It was only when he emerged from the focus that had enabled him to make a lift that he noticed referees and audience members waiving their arms. And it was only at this point that he realized he had made the lift!

Bob's training and powerful mental techniques continued to push him forward. In February, lifting at the National YMCA Championships at a bodyweight of 243 lb., Bob pressed 420 lb. snatched 335 lb. and made 465 lb. in the C&J, the latter lift being another new American Record. Nevertheless, he was defeated by the fast rising Ernie Pickett, who had pressed a World Record 445 lb. that day. Not to be outdone for long, Bednarski went after Pickett's total record the next month. He pressed 430 lb., snatched 350 lb. and made 465 lb. in the C&J, to create a new American record in the total of 1245 lb. A month later, he pressed 451 ½ pounds to take away Pickett's Sr. World Press Record and make one himself for the first time.

By the time the Nationals arrived in June, the word was that Bob was a little over-trained and probably would not attempt any records that day. But instead that day was to become the stuff of which legends are made.

It was an incredibly hot and humid on the day of the competition (high 90's in temperature and humid as well) and there was no air conditioning in York PA's William Penn High School, where the competition took place. A number of great lifters fell by the wayside during that competition, overcome by the heat, but not Bob. After pressing a World Record 456 ½ lb. and snatching a second attempt 340 lb. (he did not take a 3rd attempt), he opened with a 425 lb. C&J. Then, feeling he had only one good attempt left in him, jumped 28 kg to a WR 220.5. Approaching the platform with his signature stalking style, he pulled the barbell well and moved under it quickly, catching it slightly low on the shoulders and a little forward. He struggled out of the clean and set for the jerk. Known as a reliable jerker, Bob was no disappointment here. Balancing the bar in a forward position overhead, as was

his custom, he quickly recovered from the split, the excited head referee gave him the down signal almost immediately and then pandemonium exploded. He had made the greatest overhead lift in the history of mankind and he was now within about 7.5 kg. of Zhabo in the total - with 3 months to go the Olympic Games in Mexico City.

At the request of Bob Hoffman, Bednarski traveled to Mexico several weeks after the Nationals. At the invitation of the Mexican Weightlifting Federation, he would appear as an extra lifter. Although he wasn't initially scheduled to go heavy, Bob could never resist an enthusiastic audience. He decided to make one all out effort at a World Record for his fans south of the border. He opened his presses with the colossal weight of 210 kg. (462 ¾ lb.). After cleaning the weight, he failed to press it. Not wanting to disappoint the audience, he cleaned that weight 3 more times (4th attempts were permitted for records at that time) but could not hold the press on any of those attempts.

An objective appraiser would have to have considered Bob's informal exhibition incredible, even with the missed presses. After all, there was probably no other lifter in the world who would have considered cleaning 210 kg. 4 times in one day. But there were those who had other viewpoints on Bob's performance. I actually heard an official who was on the selection committee for the 1968 Olympic Team say "How dare Bednarski start with such a weight, he needs to be taught a lesson". Sadly, the attitude of that official was apparently not a lone one. There were a number who felt Bednarski was too big for his britches and an opportunity to teach him that lesson would soon appear.

The Final Olympic Trials were held August of 1968, in York, PA, only six weeks before the Olympic Games (the Nationals were categorized as a "Pre-Olympic Trial", performances at which were supposed to be counted toward making the Olympic Team). On the advice of Bob Hoffman and John Terpak, who would coach the Olympic Team that year, Bob did not peak for the Trials. The coaches had assured Bob that all he needed to do at the Trials was to show he was still in shape. Bob therefore elected to train right through the Trials, in hopes of reaching his peak in Mexico City at the Olympic Games. He did not plan on extending himself at the Trials.

After making a relatively low (for him) press, of 192.5 kg.424 lb., Bob snatched a personal best of 162.5 kg. and had a near miss with 165 kg. In the C&J, he made 205 kg., missing two heavier attempts (during the competition, Bob was first informed that he might actually have to defeat Joe Dube and/or Ernie Pickett, so he tried valiantly to outlift them in the C&J). In fact, he later took a 4th attempt in the C&J to prove that he was "in shape", actually shouldering a World Record 222.5 kg. but failing to stand up from the squat clean. Despite the fact that his best lifts made at the Nationals and Trials equaled the World Record in the total (held by the giant Zhabotinsky), the selection committee responsible for choosing the Olympic Team that year decided not to take Bednarski to the Games.

Here was a man who held 2 of the 4 World Records in this bodyweight category, who made a personal record in the snatch at the Trials while training through them and whose best lifts were equal to the World Record in the total. Yet the decision was made to leave him home (there were no objective, pre-announced, standards for selecting a team in those days). It was later reported that when the Olympic Weightlifting Team from the USSR learned that Bednarski was not with the US team, they could not believe their good fortune. To his credit, Joe Dube won a bronze medal for the US, though with a total well below his best. Ernie Pickett became ill from the water in Mexico and was unable to complete a press, and Zhabotinsky cruised to victory, having to make only his opening C&J and winning with a total that was a little more than 7.5 kg under Bednarski's total at the US Nationals.

The Selection Committee's short sighted decision proved not only to be a disaster for the US Team (excluding the one man who had a chance to win), but it was to have a tragic effect on Bednarski personally. Years later, Bob told me what I already knew, that the committees' decision to leave him home had extinguished his "magic". Bob would go on to lift some amazing weights in later years, but he was never able to gain the momentum that had enabled him to do such miraculous things in 1966-68. He was never able to give his full heart to weightlifting again, to trust those who ran the sport, or to truly believe that he could do anything he set his mind to do.

It was reported in S&H magazine that Bednarski had C&J'd 500 lb. in training just before the Olympic Games in 1968, in a sort of vain effort to prove he should have been in Mexico City. But Bob told me personally that the report was a fabrication. He did shoulder 222 ½ kilos in the gym at that time, but did not recover from squat position with that weight.

Bob was deeply depressed about failing to make the 1968 Olympic Team. However, he continued to train, if not with the same intensity. In November of 1968, at a birthday celebration for Bob Hoffman, Bednarski pressed 400 lb., snatched 330 lb. and made a C&J of 462 lb., all believed to be World Records in the newly adopted (on an international level) 242 ½ lb. category. Weeks later, he totaled in excess of 1200 lb. for the first time in the 242 ½ lb. division. He pressed 405 lb., snatched 332 lb. and made 465 lb. in the C&J. In March of 1969, he clean and jerked 473 lb. in training, at a bodyweight of 236 lb. At the Nationals, in June, he pressed 400 lb., snatched 345 lb. (which actually weighs 347 ½ lb.) and made 465 lb. in the C&J (which actually weighed 466 ½ pounds). His lifts constituted new World Records in the snatch, jerk and total.

Later that year, Bob competed at the World Championships for the first time in the 242 ½ lb. (110 kg) bodyweight category. He pressed 182.5 kg., snatched 160 kg and made 212.5 kg. in the C&J, for a new World Record in the total, or so almost everyone thought. However, after Bednarski's last C&J, the Soviet delegation contested the lift. They argued that Bednarski had not changed his last attempt from an initially called for 457 ¼ lb. to 468 ¼ lb. in time for the change to be legal. Their argument prevailed for the moment. Bob's last C&J was taken away and he was declared the silver medallist. The American's were not the only ones upset. The audience on the host country (Poland) was incensed. They had been rooting for Bednarski (who was of Polish decent) over the USSR lifter, Jan Talts (the USSR was considered by many to be an unwelcome occupier of Poland at the time).

A year later, an official IWF investigation proved that Bednarski and the American contingent had changed Bednarski's 3rd attempt to a heavier weight in ample time, but the officials had delayed communication with the announcer. Consequently, the gold medal was awarded to Bob retroac-

tively, though he had been robbed forever of the thrill of mounting the winner's platform when the victory was still fresh.

In January of 1970, Bob was reportedly in shape to attempt to 500 lb. C&J, at a body-weight of 242 lb. Lifting at the Philadelphia Open, Bednarski took a token press of 350 lb., a token snatch a 300 lb. and waited for the others to finish their C&J's. He then opened with 470 lb. He cleaned that weight three times, but in an unusual development for him (he was normally a very sure jerker), he missed the jerk each time. Before the 1970 Nationals, it was reported that Bob pressed 430 lb. in training, snatched 341 lb., shouldered 501 lb. in the clean (but was unable to stand up) and jerked 525 lb. from the racks (this latter lift was witnessed by many, as well as photographed).

At the Nationals, Bednarski pressed for 410 lb., which actually weighed 415 ¼ lb., snatched 330 lb. and made 445 lb. in the C&J. At the Worlds, later that year, he had a relatively poor performance, pressing only 402 ¼ lb., snatching 325 ¼ lb. and making 440 ¾ lb. in the C&J, for a disappointing third-place finish.

At Philly open in 1971, an out of shape Bednarski pressed 350 lb., snatched 335 lb. and cleaned and jerked 415 lb. He was experiencing some knee trouble at the time. At the Nationals later that year, Bob opened with 187 ½ kg in the press (413 ¼ lb.), hoping to excel in that lift and hold off his competitors to garner another National Championship. He made two shaky cleans on his first two attempts and then failed to press the weight each time. However, on his third attempt, he seemed to exhibit some of his previous abilities; making a very easy clean and confidently setting up to press the weight in his characteristic layback position. Most of those in the audience that day, especially those who knew Bob well, thought this press would surely go. Unfortunately, Bob never received the signal to begin the press. Center referee, Bob Hoffman, simply never signaled. After holding the barbell in a starting position for many seconds, Bednarski began to tremble from the load. He ultimately dropped the bar and left the stage in disgust.

There were varying explanations provided for the behavior of Bob Hoffman, with many believing that the aging patriarch of US weightlifting had fallen asleep that day. Hoffman himself claimed that as Bob cleaned his 3rd attempt, Hoffman's failure

to deliver the signal was a result of his deep disappointment at how poorly Bob was lifting and a personal reverie about the athlete's prior performances. Whatever, the reason, the failure to receive a signal was catastrophic for Bednarski. Although he was granted a further attempt by the officials, he was out of energy by this time and was unable to complete the lift.

Bednarski next appeared at the 1972 Philadelphia Open, with clearly ailing knees. He been pressing fairly heavy weights from the rack and managed a 400 lb. press, but he took token lifts of 275 lb. in the snatch and 325 lb. in the C&J. Later that year, he failed to make a total at the Nationals and many thought Bob was finally through.

However, Bob managed to heal his knees and was healthy enough to appear in competition in March of 1973. At that year's Nationals, in June, he made one snatch with 145 kg. (319 ¾ lb.), tying him with defending champion, Frank Capsouras, with Bob being the heavier man. Bob outlifted Frank in the C&J with 197.5 kg. (435 ¼ lb.) to win his 5th and final National Championship. He retired following that Nationals.

Though he'd won the 1973 Nationals, Bob was truly a shell of his former self. What had caused his fall from the pinnacle of world weightlifting? Bob grew up in an era of drug experimentation, the 1960's. It was an era when many thought that drugs were the answer to all of mankind's physical and spiritual problems. It was at this time that anabolic steroids came into prominence in then sports world. But athletes were experimenting heavily with many other kinds of drugs. Among those drugs were amphetamines and other forms of stimulants. One drug that was popular in York at the time was Syndrox. Bob felt Syndrox gave him as added boost of energy, so he used the substance for heavy workouts and competitions (remember that there were no bans against drug use at the time and testing for most drugs was many years away). After taking the Syndrox, Bob found it hard to sleep. He was introduced to barbiturates as a means to calm himself down after taking Syndrox. He soon began not rely on the barbiturates to sleep and developed an addiction to them.

What many physicians at the time did not realize was that barbiturates are one of the most addictive forms of drugs. Users often need to take more and more to get the same relaxing effects. Bob had a real

problem with these drugs, and it wasn't until he moved out of York and, supported by some wonderful friends, that he was able to kick his habit, go on to a productive life and even make the a subsequent credible comeback. But during the period when Bob was taking a "witches brew" of drugs to balance his moods, they were wreaking havoc on his mind and body, turning what had once been arguably the greatest lifting machine in the world into a much more ordinary lifter. Even the greatest can be felled by the pills.

When Bob retired in 1973, and most people, including him, thought that would be the last they'd ever see of the great Bednarski. But in 1975, Bob returned to training, in hopes of finally making and Olympic Team. Lifting at a heavier body-weight than ever before – about 275 lb., Bob made a personal record of 360 lb. in the snatch, and made a 450 lb. C&J officially. It looked like he might actually qualify for the Olympic Team. In fact, Bob told me that it was during this period that he made his lifetime best C&J of 490 lb. (at Joe Mill's Central Falls Weightlifting Club).

Sadly, Bob's body began to run down and in early 1976, he was forced to call it quits. This time, his retirement was for good. He would never again mount the weightlifting platform.

On the occasion of Bob's induction into the USAW Hall of Fame, I told him "When one looks up into a dark evening sky, one can see what appear to be a countless number of stars. But the star that one remembers most after an evening of gazing is the "shooting star". And so it was with you Bob. Your star streaked across the American weightlifting scene in the late 1960's, thrilling observers and lighting the way for others to come. It was as star that those of us who were fortunate enough to see will never forget." The phrase – "we will not see his like pass this way again" is overused by writers penning obituaries, but in this case it is true. In the minds of those were around in the 60's, Bob's star will always shine brightly. How fortunate we were to have seen it! ♦

DIFFERENT APPROACHES TO TEACHING THE SNATCH

By Jonathon M. Janz,
M.S., C.S.C.S., USA
Weightlifting Club Coach

The snatch is one of the lifts attempted in the sport of weightlifting, and involves the lifting of a barbell from the floor to arms-length overhead. Strength and conditioning coaches also frequently use the exercise when training athletes of a wide variety of sports. When properly performed, the snatch is a very safe and effective means of developing athletic power. There are many different ways of teaching the snatch to beginners, and coaches are encouraged to find the method that best suits their particular style. This article will discuss several different teaching methods for the snatch.

The snatch is one of two lifts contested in the sport of weightlifting. In order to execute the lift, an athlete will grip a barbell and lift it from the floor to an overhead position at arms-length in one motion. It is a fast and powerful movement, where heavy weights are lifted in 1.2 to 1.5 seconds (23). In strength and conditioning, the snatch is utilized as a highly effective way to develop an athlete's power (5, 11, 13, 20, 34). The snatch, along with the clean and jerk, is also very safe for athletes to perform provided proper instruction is given (5, 32, 33). The rate of injury for weightlifters has been shown to be as low as 0.0017 injuries per 100 hours of participation (32). By way of comparison, basketball has 0.3 injuries per 100 hours and track and field has 0.57 injuries per 100 hours (32). Between the two competitive lifts, a study by Kuland reported far fewer injuries associated with the snatch than the clean and jerk (15). So given the potential benefits of performing the snatch, and acknowledging that proper instruction will make the activity safe and effective, it is beneficial to examine existing literature on teaching the snatch to beginners as well as inquire into the teaching methods of current weightlifting and strength coaches. This article will discuss the teaching of the snatch as done by four different organizations and coaches involved directly with the

sport of weightlifting. By studying the available information regarding the instruction of the snatch, coaches can choose a method that works best for them or formulate their own method of instruction.

Technical Description of The Snatch

In order to discuss the different teaching methods of the snatch, it is necessary to describe how the lift is properly executed. The following is a general explanation of how to properly perform a snatch. The figures contained within the description are measurements taken from elite weightlifters in the former Soviet Union (23, 24) and Greece (8). It is important to remember that while these figures are considered the ideal, they have come from elite athletes and cannot necessarily be achieved by beginners. Since no two athletes are built the same, it is important for coaches to optimize each athlete's lifting form based upon multiple factors including, but not limited to: Body shape and size, strength level prior to training, training experience, and physical limitations. The closer an athlete approaches optimum technique within his or her individual requirements and status, the safer and more effective the activity will be (5, 32, 33).

Starting Position (Figure 1)



In order to assume a proper starting position, the athlete must first place the feet approximately hip-width apart with the toes turned slightly outward. The barbell should be located directly over the metatarsophalangeal joints of the feet with the athlete's shins inclined so that they are in contact with the bar (23). The type of grip that the athlete uses to hold onto the barbell is known as the "hook" grip. This involves wrapping the thumb around the bar first, then wrapping

the rest of the fingers over the top of both the thumb and the bar. The hook grip places the thumb in a better position to apply force to the bar than with the normal overhand grip, and takes advantage of the powerful muscles at the base of the thumb (6). The amount of space between the athlete's hands depends on the angle formed between the arms and the barbell (a smaller angle denotes a wider grip). The ideal angle lies somewhere between 49° and 63° (or an average of 56°) (23). Several other factors may determine hand spacing including: Dimension of the barbell, dimensions of the arms, space between the head and the barbell when held at arms-length overhead, wrist discomfort, shoulder and arm strength, and balance (35).

The athlete's arms should be straight in the starting position, with the neck and head placed in a neutral or slightly extended position with respect to the back. The athlete's visual field should be directed forward or slightly toward the floor (23). Depending upon the athlete's dimensions and the width of the grip, the angle of the torso and knee in the starting position will vary. Ideally, a knee angle of 80° to 110° is desirable (23). The angle of the torso will vary from 25° to 50° depending again on the length of the athlete's limbs and the width of the grip. The shoulders should be located directly over the barbell assuring that the body is balanced over the mid-foot (24).

The First Pull (Figure 2)



The first pull begins with the extension of the knees and hips. The hip joints move in a vertical path as the torso shifts upward and inclines forward slightly while the head tilts back. The barbell is lifted in a smooth motion from the platform with a gradual increase in force and acceleration. The knees

stop extending once they reach an angle near 140° to 150° and the shins become vertical in attitude (8, 23). The torso is inclined approximately 30° with respect to the platform, and the hips are at an angle between 85 and 90° . The path of the barbell is not strictly vertical during the first phase of the pull, but rather towards the lifter during the extension of the legs, because of the increase in the incline of the torso (8, 23). The closer the athlete can keep the barbell's center of gravity to his or her own center of gravity, the greater advantage the muscles will have to impart force upon the barbell (23). Once the knees stop extending, the torso begins to straighten in an upward (and slightly rearward) direction. Due to the movement of the torso, the knees rebend under the barbell and shift forward. The knees will bend until they reach an angle near 120° to 130° , with the shins inclined toward the platform at an angle of 70 to 75° (8, 23). The torso becomes straighter, with an angle measuring approximately 58° and a hip angle of 105° (23)

The Second Pull (Explosion) (Figures 3 and 4)



The second pull begins when the athlete explosively extends the legs and torso, launching the barbell in an upward and slightly forward traveling arc (8). The barbell achieves

an overall maximum velocity of 1.65 to 2.05 m/s. As the barbell travels upward, the athlete's torso will arch backward. This will effectively keep the collective center of gravity between the barbell and weightlifter over the base of support (23).



The Squat Under (Figures 5 and 6)



After the athlete finishes executing the second pull, the barbell will travel to a height measuring approximately 73.5% of the athlete's height. The athlete will begin

to squat under it in order to receive the barbell at arms-length overhead. The feet will temporarily leave the ground (usually for about 0.1 seconds) before being replaced



a full squat with a slight arch in the lower back and the arms actively securing the bar overhead (23).

The Recovery (Figure 7)



The recovery from the squat under is accomplished by extending the legs and hips (standing up). The slight arch in the lower back is preserved during the recovery and the shoulders are shifted forward under the barbell (which is located above and slightly behind the head). The snatch is complete once the athlete assumes a completely erect posture with the barbell held at arms-length overhead. (24).

Skill Classification and Practice of The Snatch

Skills can be classified as being discrete, continuous, or serial in nature. Discrete skills have a distinct beginning and end, and have very rapid to moderate movement times. Some examples include kicking, throwing, and writing a signature (26). Continuous skills are defined as having no recognizable beginning or end, and may be sustained indefinitely until discontinued arbitrarily. Walking, running, and swimming are examples of continuous skills (26). Serial skills can be described as being comprised of a collection of individual actions that together form a complete task. The parts that make up the skill can be discrete or continuous in nature, but it is the order in which they occur that is most important. Examples of serial skills include starting a car and various assembly line tasks in a factory (26). Skills can also be described in terms of the environment in which they occur. Open skills occur in unpredictable or ever-changing environments. General decisions about movements can be planned, but specific decisions depend on what occurs in the environment (7, 26). Examples of open skills include driving on a freeway in dense traffic and returning a punt in football. Closed skills occur in predictable or stable environments.

Movements can be planned effectively prior to the execution of the task. Examples of closed skills include bowling, archery, and writing (7, 26).

The snatch has a definite beginning (starting position) and end (recovery), which would suggest that it is either a discrete or serial skill. The snatch can also be broken down into five parts for descriptive purposes (starting position, first pull, second pull, squat under, recovery), suggesting that it is a serial skill. The five parts of the snatch have a high degree of interaction, that is to say that each part has a direct effect on how the next part in sequence is executed, which in turn effects the entire lift. The order and proper execution of each part of the snatch is important to successful outcome of the movement. Many teaching models for the snatch recommend that the movement be broken down into several parts to facilitate learning. Several studies lend credence to this part-by-part method and have shown that learning is improved with this type of practice so long as it is performed within the required sequence (1, 10, 17, 22, 30, 37, 38). Some studies have shown that learning the parts of a skill in reverse sequence (known as backward chaining) is a highly effective way to improve learning (37, 38), while other studies suggest that forward chaining may be just as effective and produce fewer performance errors (2, 14, 31). Some coaches may use guidance as a way to introduce an athlete to the positions assumed during the execution of the snatch. There are several studies that support the use of guidance as a way to improve the learning of a skill (12, 18, 19, 28, 29). More recent more recent studies also support the use of guidance, but only if it is interspersed with active practice trials and progressively phased out (9, 25, 27, 39).

A few teaching models choose to break down the snatch into far fewer parts, or teach the movement as a whole from the onset, treating it more like a discrete skill. The movement time for the snatch is very short at 1.2 to 1.5 seconds, and its individual parts take only 0.1 to 0.5 seconds to complete (23, 24). A task with that short of a movement time does not allow for adjustments to be made based upon feedback during execution, nor to be run by more than one motor program (26). Additionally, breaking up a skill of this type and practicing its parts may disrupt the athlete's ability to learn the crucial timing

required between each part for proper execution of the whole skill (26). This would seem to lend support to teaching the snatch in its entirety as if it were a discrete skill as opposed to a serial skill. Some studies have shown that serial tasks involving short movement times or requiring a high level of interlimb coordination may be better practiced as whole movements rather than by parts (3, 4, 16, 36). However, even though the movement time for the snatch is quite short, the skill does not require an athlete to move his or her limbs in different patterns, but rather each limb mirrors the actions of the contralateral limb, reducing the need for exquisite interlimb coordination.

Research regarding the whole practice of serial sports skills with short movement times is scarce, and more study is needed in order to draw satisfactory conclusions. It is also important to note that none of the studies cited supporting either part or whole practice of serial skills used the snatch as the skill in question. More specific research utilizing the snatch or a similar skill would help to provide more definitive information.

USA Weightlifting

USA Weightlifting is the national governing body for the Olympic sport of weightlifting in the United States. USA Weightlifting publishes the Club Coach Manual, which provides a teaching model for coaches to follow when instructing the competitive lifts to beginners. The basic premise of the USA Weightlifting model is to teach a collection of basic exercises that will provide a foundation for learning the snatch and the clean and jerk. These exercises are designed to increase the athlete's familiarity with the barbell, institute safe lifting habits, and strengthen the required muscles for weightlifting. The basic exercises are followed by a series of skill transfer exercises intended to help the athlete transition into performing the competitive lifts (35). The progression for the snatch as taught by USA Weightlifting is summarized in Table 1.

When learning the basic exercises, USA Weightlifting recommends that the athlete use an empty barbell. If that is too heavy for the athlete to lift properly, a broomstick may be substituted. The first exercise taught is the power clean, as USA Weightlifting considers this lift to be fundamental to the sport of weightlifting because it introduces the athlete to the concept of pulling the barbell properly. Since USA Weightlifting also recommends that the clean be taught before the snatch, they propose that coaches begin the basic exercises with a variation of the clean. It is suggested that the power clean be broken down into parts for ease of learning. These parts include pulling the barbell from above the knees, from knee-height, from below the knees, and finally from the floor. Once the power clean is learned, the athlete is taught how to press the barbell from behind the neck in a standing position, using a shoulder-width grip first, followed by a snatch-width grip. The front squat is instructed next, followed by the back squat. USA Weightlifting believes that both squatting exercises teach the athlete how to assume proper body positions when receiving the barbell during the snatch and the clean, and are also important for developing strength. The last of the basic exercises instructed is the power snatch. This lift is broken down into parts similar to those of the power clean: Pulling the barbell from above the knees, from knee-height, from below the knees, and from the floor (35).

Once the basic exercises have been learned and practiced by the athlete, USA Weightlifting suggests utilizing four specific skill transfer exercises when progressing to the snatch. The first of these exercises is the overhead squat. In this lift, the athlete holds the barbell overhead at arms-length, with a snatch-width grip. The athlete then performs a squat, learning to balance and control the barbell overhead. The second skill transfer exercise is the pressing snatch balance. For this movement, the athlete begins with the barbell on his/her shoulders. Using a snatch-width grip, the athlete will press the barbell overhead while squatting at the same time. USA Weightlifting states that this movement helps an athlete develop the balance and skill of moving his/her body under the barbell. Next, the athlete performs a similar movement to the pressing snatch balance, this time adding a countermovement to aid the pressing motion. USA Weightlifting refers to this exercise as the "heave pressing snatch balance". The athlete once again places the barbell on his/her shoulders with a snatch-width grip. Instead of pressing the barbell overhead while squatting, the athlete will first bend the legs as if preparing to jump and "heave" the barbell overhead while squatting beneath it. It is important to have the athlete assume a full squat as quickly as possible while locking the barbell at arms-length overhead, thus developing speed, strength, and confidence. The final skill transfer exercise is the snatch balance. For this lift, the athlete once again places the barbell on his/her shoulders using a snatch-width grip. A countermovement is then performed similar to that which is executed during the heave pressing snatch balance, but this time focusing on moving the body down into the receiving position as fast as possible. The countermovement should not make the barbell move in an upward motion, but rather should help to drive the athlete into a full squat. The athlete can think of the movement as pushing his/her body into a full squat, instead of pressing the barbell overhead. Once the skill transfer exercises are learned, the athlete may proceed with practicing the snatch (35).

Former U.S.S.R. National Weightlifting Coach Medvedev

Medvedev served as the coach of the Soviet national weightlifting team and wrote several texts on the sport of weightlifting, including *A System of Multi-Year Training*

Table 1

The USAW Model For Teaching The Snatch

Basic Exercises

1. Power Clean From Hang Above Knees
2. Power Clean From Hang At Knee Height
3. Power Clean From Hang Below Knees
4. Power Clean From Floor
5. Press Behind Neck With Shoulder-Width Grip
6. Press Behind Neck With Snatch-Width Grip
7. Front Squat
8. Back Squat
9. Power Snatch From Hang Above Knees
10. Power Snatch From Hang At Knee Height
11. Power Snatch From Hang Below Knees
12. Power Snatch From Floor

Skill Transfer Exercises

1. Overhead Squat
2. Pressing Snatch Balance
3. Heave Pressing Snatch Balance
4. Snatch Balance

Table 2

Medvedev's Method For Teaching The Snatch

1. Power Snatch From Hang Above Knees
2. Power Snatch From Hang Below Knees
3. First Pull From Floor
4. Snatch Pull From Floor
5. Power Snatch From Floor
6. Power Snatch From Floor With Overhead Squat
7. Snatch

in Weightlifting, which contained his view on how the snatch should be taught to beginners. Medvedev's approach involves backward chaining for the first part of the progression, followed by forward chaining for the second part. Using this teaching model, the athlete will begin learning the snatch from the point of the second pull, and proceed back through the first pull until the barbell is on the floor. From that position, the athlete will begin to reconstruct the lift in a forward manner, learning to execute each step in normal sequence. Medvedev also chose to utilize the power snatch in nearly all of the steps because of what he felt was the exercise's simplicity and ease of mastery. His progression for teaching the snatch is summarized in Table 2.

The athlete begins by learning the power snatch from the "hang" position above the knees. Hang position refers to the athlete holding onto an unsupported barbell at a height above the floor (i.e., not utilizing blocks to support the barbell). Next, the athlete executes the power snatch from the hang position below the knees. Once these movements are successfully completed,

Table 3

Ajan & Baroga's Method For Teaching The Snatch

1. Starting Position
2. First Pull From Floor
3. Second Pull From Blocks Above Knees
4. Power Snatch From Blocks Above Knees
5. Power Snatch From Floor
6. Overhead Squat
7. Snatch Balance
8. Snatch

the athlete is then shown how to perform the first pull up to the knees. The first and second pulls are then added together and performed with the barbell starting on the floor, completing what is termed the "snatch pull". The athlete next performs the power snatch from the floor, later adding an overhead squat to the exercise. After all of these steps are successfully completed, the athlete is ready to master the snatch (21).

Ajan and Baroga

The International Weightlifting Federation (IWF) is the international governing body for the sport of weightlifting. In 1988, the IWF published *Weightlifting: Fitness For All Sports*, by Ajan and Baroga. This text contained instructions for coaches teaching the snatch based upon methods employed in Romania (Baroga's home nation) in the 1970s and 1980s (6). Ajan and Baroga suggest a step-by-step method be utilized in which the athlete begins with the barbell on the floor and learns the proper starting position first. From there, the model employs both forward and backward chaining when reconstructing the lift. Ajan and Baroga also prefer the use of blocks to support the weight as opposed to the hang position when learning different parts of the snatch. Their teaching method is summarized in Table 3.

The athlete begins by learning the proper starting position for the snatch while the barbell is on the floor. Next, the first pull is introduced, in which the athlete is instructed to pull the barbell up from the floor to just above the knees. This movement is repeated until the athlete can perform it reliably with confidence. The second pull is taught next, with the barbell being placed on blocks at a height just above the athlete's knees. The athlete is instructed to pull the barbell upward by explosively extending the legs and torso in a powerful and balanced fashion. Once the second pull is mastered, the athlete then performs power snatches from the blocks, and then from the floor. When the starting position, first pull, and second pull are sufficiently learned, the athlete is shown how to properly descend under the barbell by performing overhead squats followed by snatch balances. Then, once the athlete is comfortable pulling and receiving the barbell in the overhead position, the snatch is practiced (6).

Table 4

Teaching Model Of The Bulgarian National Team

1. Back Squat
2. Front Squat
3. Clean Pull From Floor
4. Squat Clean
6. Overhead Squat
7. Snatch Pull From Floor
8. Power Snatch From Floor
9. Snatch

The Bulgarian National Weightlifting Team

Like the USAW, the Bulgarians teach the clean prior to the snatch, but do not break up the lifts as much as the USAW, Medvedev, and Ajan and Baroga. Instead, once the back squat, front squat, and clean are taught, the snatch is broken down into only three parts (overhead squat, snatch pull, and power snatch from floor). The Bulgarians begin with the clean as they believe it is less complex than the snatch and easier for beginners to learn (6). The Bulgarian teaching model is summarized in Table 4.

The back squat is instructed prior to all other lifts, as they believe it forms the foundation for all of the exercises involved in the sport of weightlifting. The front squat is taught next, with an emphasis on keeping the torso as upright as possible. Once both squatting movements are mastered, the clean pull is introduced in its entirety. The Bulgarian coaches do not attempt to break down the clean or snatch pull into parts, as they believe both should be thought of and practiced as single movements (6). The athlete is then taught how to perform the clean. Next, the Bulgarian coaches instruct the snatch pull, again in its entirety, followed by the power snatch from the floor. Once the athlete has mastered the power snatch, the coaches will gradually instruct the athlete to catch the barbell in successively lower squatting positions until a full squat catch is performed, thus completing the snatch (6).

Author Biography

Jonathon Janz is an intern strength and conditioning coach at the University of Minnesota.

Editor's Note: Contact the National Office for a list of References - (719) 866-4508. ♦

Pan American Games

Rio de Janeiro • July 14th-18th, 2007



U.S. Weightlifting Team
2007 Pan American Games
Rio de Janeiro, Brazil

Back row: Kyle Pierce & Rodger DeGarmo. Front row: Jeff Wittmer, Emmy Vargas & Casey Burgener



U.S. Weightlifting Team

2007 Pan American Games
Rio de Janeiro, Brazil



Back Row: Natalie Woolfolk, Melanie Roach, Matt Bruce & Roger Nielsen. Front Row: Dennis Sneathen, Robert Morris, Chad Vaughn, Kendrick Farris & Frank Eksten

Women's Team	Weight Class	Body Weight	YOB	1st	2nd	3rd	1st	2nd	3rd	Total	Place	
1. Melanie Roach	53	52.7	1974	74	77x	77x	101	104	108	182	3rd	BRONZE
2. Jackie Berube	58	57.85	1971	83	86	88x	100	105	108x	191	6th	
3. Natalie Woolfolk	63	62.6	1983	98x	98	100x	110	115	117x	213	3rd	BRONZE
4. Emmy Vargas	75+	93.5	1977	98	104	108x	125x	125	132x	229	2nd	SILVER

Men's Team	Weight Class	Body Weight	YOB	1st	2nd	3rd	1st	2nd	3rd	Total	Place	
1. Chad Vaughn	77	76.85	1980	141	145	148x	182x	184	187	332	5th	
2. Matt Bruce	77	76.85	1983	140	145	148	175	180	185x	328	6th	
3. Kendrick Farris	85	84.15	1986	145	148x	148x	175	185	190x	330	4th	
4. Jeff Wittmer	94	93.05	1984	150	155	158	192	197	202x	355	5th	
5. Casey Burgener	105+	119.55	1982	170x	170	177	205	215	223x	392	2nd	SILVER

Olympic Games Totals **

WOMEN	
48	200.22
53	216.00
58	234.67
63	245.22
69	259.56
75	275.00
75+	302.00

MEN	
56	279.89
62	306.67
69	334.11
77	358.67
85	379.22
94	395.00
105	413.78
105+	445.11

**Athlete rankings are based on the percentages that are compared to the 2005, 2006, 2007 World Championships Medal average (gold, silver, bronze) from the respective category. Every weight category's Qualifying Event Total must be at least 1 kilogram more than the lighter category below is, regardless of the 3 year medal average. These totals are subject to change pending 2007 World Championship drug testing.

University World Championships

Callao, Peru • August 9-12, 2007



Back row: Leo Totten, Kyle Yamauchi, Zach Krych, Dennis Snethen, Paul Roberts, Collin Ito, Rachel Hearn, Craig Kawaoka, Henry Meyers & Rich Lansky. **Front row:** Jessica Fides, Sarah Davis, Samantha Turnbull, Derrick Johnson, Heather Snethen, Hilary Katzenmeier & Leslie Musser. **Missing:** Patrick Judge, Justin Brimhall & Henry Woodard

Women's Team	Weight Class	Body Weight	YOB	Snatch			Clean & Jerk			Total	Place
				1st	2nd	3rd	1st	2nd	3rd		
1. Heather Snethen	48	47.65	1986	59x	59x	59	72	74x	74x	131	4th
2. Samatha Turnbull	53	52.86	1988	66x	66x	66	67x	67x	67	152	2nd
3. Jessica Fides	53	52.77	1982	67x	67x	67x	81	84	86	0	0
4. Hilary Katzenmeier	58	57.12	1988	71	74	75	86	92x	92x	161	5th
5. Sarah Davis	58	57.23	1983	70	73x	73	-	-	-	-	0
6. Leslie Musser	63	61.19	1980	63	66	70x	80	83x	83	149	2nd
7. Rachel Hearn	75+	113	1980	88x	88	91	117	121	122	213	4th

Men's Team	Weight Class	Body Weight	YOB	1st	2nd	3rd	1st	2nd	3rd	Total	Place
1. Kyle Yamauchi	62	61.57	1983	106	110	113x	132	136	140	250	4th
2. Derrick Johnson	62	61.93	1985	108	111	115	137	141	145x	256	3rd
3. Henry Woodard	77	76.63	1987	125	130x	130x	155	157	167	292	3rd
4. Justin Brimhall	77	76.05	1986	106	111	114	135	139	142x	253	4th
5. Paul Roberts	85	83.32	1985	135	138	142	160	165x	167x	302	5th
6. Zach Krych	85	84.55	1983	137x	137	141	177	182	184	325	2nd
7. Patrick Judge	105+	149.4	1986	142	144	145	187	190	197x	335	3rd
8. Collin Ito	105+	131.28	1987	137	143x	143	181	187x	187x	324	4th

Royal World Weightlifting Championships

Chiang Mai, Thailand • September 17-26, 2007



Back row: Kyle Pierce, Dennis Snethen, Robert Morris, Casey Burgener, Zach Schluender, Cody Gibbs & Mike Reed. **Middle row:** Matt Bruce, Henry Brower, Chad Vaughn, Mark Lavallee, Kendrick Farris & Roger Nielsen. **Front Row:** Cheryl Haworth, Natalie Woolfolk, Melanie Roach, Carissa Gump, Stacy Suyama, Emmy Vargas & Doreen Fullhart. **Missing:** Jake Johnson, Frank Eksten.

Women's Team	Weight Class	Body Weight	YOB	Snatch			Clean & Jerk			Total	Place
				1st	2nd	3rd	1st	2nd	3rd		
1. Stacy Suyama	48	47.94	1983	69	71x	71	80	83	85x	154	24th
2. Melanie Roach	53	52.75	1974	74	77	79	105	107	110	189	12th
3. Natalie Woolfolk	63	62.73	1983	96x	96	99	111x	111	115x	210	14th
4. Carissa Gump	63	61.94	1983	87x	87	90x	111	115	117	204	16th
5. Doreen Fullhart	75	74.79	1976	96	99	101	107	110x	110	211	18th
6. Emmy Vargas	75+	96.47	1977	100	105x	105x	127	132	136	236	16th
7. Cheryl Haworth	75+	138.19	1983	110x	110	113x	140	-	-	250	12th

Men's Team	Weight Class	Body Weight	YOB	1st	2nd	3rd	1st	2nd	3rd	Total	Place
1. Jake Johnson	69	65.82	1988	120x	120	123x	145x	145x	145	265	51st
2. Henry Brower	69	68.87	1982	122	125x	125x	152	157x	157	279	44th
3. Chad Vaughn	77	76.5	1980	143	147x	147x	183x	183	185x	326	24th
4. Matt Bruce	77	76.78	1983	140	145x	145x	175	180x	180x	315	32nd
5. Kendrick Farris	85	84.82	1986	152	156x	156x	190x	190x	190x	-	0
6. Cody Gibbs	105	104.47	1985	155x	155x	155x	-	-	-	-	0
7. Zach Schluender	105+	121.62	1982	160	165	170	195	200	206x	370	19th
8. Casey Burgener	105+	122.29	1982	170	177	182	210	218	225x	400	11th

COLLEGE FOOTBALL - GAME
MOST PASSING YARDS - 716
MOST RUSHING YARDS - 406
MOST RECEIVING YARDS - 405
MOST FRESHMAN YDS GAINED - 582
MOST INTERCEPTIONS - 5
MOST POINTS SCORED KICKING - 24

COLLEGE FOOTBALL - SEASON
MOST PASSING YARDS - 5833
MOST RUSHING YARDS - 2628
MOST RECEIVING YARDS - 2060
MOST TOUCHDOWNS SCORED - 39

COLLEGE FOOTBALL - CAREER
MOST PASSING YARDS - 15,031
MOST RUSHING YARDS - 6397
MOST TOUCHDOWN PASSES - 121
MOST RECEIVING YARDS - 5005
MOST TOUCHDOWNS SCORED
ON INTERCEPTION RETURNS - 5
MOST POINTS SCORED - 468
LONGEST PUNT IN YARDS - 99
MOST CONSECUTIVE GAMES
GAINING 400yds OR MORE - 11
MOST CONSECUTIVE FIELD
GOALS MADE - 30

MEN'S COLLEGE SOCCER - GAME
MOST ASSISTS - 7
MOST GOALS - 8
MOST POINTS - 18

MEN'S COLLEGE SOCCER - SEASON
MOST ASSISTS - 24
MOST GOALS - 46
MOST POINTS - 108

MEN'S COLLEGE SOCCER - CAREER
MOST ASSISTS - 66
MOST GOALS - 109
MOST POINTS - 255

WMN'S COLLEGE SOCCER - GAME
MOST ASSISTS - 6
MOST GOALS - 7
MOST POINTS - 16

WMN'S COLLEGE SOCCER - SEASON
MOST ASSISTS - 44
MOST GOALS - 37
MOST POINTS - 97

WMN'S COLLEGE SOCCER - CAREER
MOST ASSISTS - 129
MOST GOALS - 118
MOST POINTS - 284

MEN'S COLLEGE BASKETBALL - GAME
MOST POINTS - 100
MOST 3-POINT FIELD GOALS - 15
MOST REBOUNDS - 51
MOST STEALS - 13
MOST ASSISTS - 22
MOST POINTS IN FIRST
CAREER GAME - 52

MEN'S COLLEGE BASKETBALL - SEASON
MOST BLOCKED SHOTS - 207
MOST BLOCKED SHOTS BY A TEAM - 315
MOST TEAM POINTS SCORED - 3464

MEN'S COLLEGE BASKETBALL - CAREER
MOST 3-POINT FIELD GOALS - 413
MOST ASSISTS - 1076
MOST POINTS - 37
MOST CONSECUTIVE FREE THROWS - 86
MOST GAMES PLAYED - 151

WMN'S COLLEGE BASKETBALL - GAME
MOST POINTS - 60
MOST POINTS BY A TEAM - 149
MOST CONSECUTIVE FIELD GOALS - 17
MOST 3-POINT FIELD GOALS - 12

WMN'S COLLEGE BASKETBALL - SEASON
MOST POINTS - 1062
MOST REBOUNDS - 534
MOST STEALS - 99
MOST CONSECUTIVE FIELD GOALS - 28

WMN'S COLLEGE BASKETBALL - CAREER
MOST POINTS - 393
MOST ASSISTS - 1307
MOST 3-POINT FIELD GOALS - 391
HIGHEST FIELD GOAL - 70.3%

MEN'S COLLEGE HOCKEY - GAME
MOST POINTS - 11
MOST GOALS - 9
MOST SHORT-HANDED GOALS - 3
MOST SAVES - 71

MEN'S SWIMMING
50m FREESTYLE - 21.64
100m BREASTSTROKE - 59.30
200m BACKSTROKE - 1:44.06
50m BACKSTROKE - 24.99
400m FREESTYLE - 3:40.08
SHORT-COURSE 1X100m
FREESTYLE - 3:01.57

WOMEN'S SWIMMING
50m FREESTYLE - 24.13
100m FREESTYLE - 53.52
100m BACKSTROKE - 59.58
200m FREESTYLE - 1:57.65
200m BACKSTROKE - 2:06.62
400m FREESTYLE - 4:03.85
SHORT-COURSE 1X100m
FREESTYLE - 3:34.05

MEN'S TRACK AND FIELD
100m - 9.77
200m - 19.32
400m - 43.18
800m - 1:41.11
JAVELIN - 98.48m
MARATHON - 2:04.55
3000m STEEPLECHASE - 7:53.63
HIGH JUMP - 2.45m
LONG JUMP - 8.95m
TRIPLE JUMP - 11.29m

WMN'S TRACK AND FIELD
100m - 10.49
200m - 21.34
400m - 47.60
800m - 1:53.28
100m HURDLES - 12.21
400m HURDLES - 52.34
MARATHON - 2:15.25
DISCUS - 76.80m
POLE VAULT - 5.00m
LONG JUMP - 7.52m
HIGH JUMP - 2.01m
TRIPLE JUMP - 11.55m

MEN'S MARATHON
FASTEST HALF MARATHON - 59:05
FASTEST MARATHON - 2:04:55

PUSH UPS
NON-STOP - 10,537
1 MINUTE - 138
5 MINUTES - 441
1 HOUR - 3877
24 HOURS - 46,011
1 YEAR - 1,500,220

MEN'S SHORT TRACK SKATING
500m - 41.184
1000m - 1:24.674
1500m - 2:10.639

WOMEN'S SHORT TRACK SKATING
500m - 43.671
1000m - 1:31.191
1500m - 2:18.861

MEN'S COLLEGE VOLLEYBALL - MATCH
MOST KILLS - 49
SERVICE ACES - 4
BLOCK SOLOS - 11
DIGS - 27

MEN'S ARCHERY
72 ARROW RANKING ROUND - 687
18 ARROW MATCH - 177
12 ARROW MATCH - 119
27 ARROW MATCH - 260

WOMEN'S ARCHERY
72 ARROW RANKING ROUND - 682
18 ARROW MATCH - 175
12 ARROW MATCH - 118
27 ARROW MATCH - 258

PROFESSIONAL BASEBALL
MOST GRAND SLAMS IN 1 GAME - 2
LONGEST GAME - 8 hrs 6 mins
MOST STRIKEOUTS IN A SEASON - 383
MOST WORLD SERIES WINS - 26
MOST STOLEN BASES SEASON - 130
MOST STOLEN BASES CAREER - 1406

WOMEN'S COLLEGE SOFTBALL - GAME
MOST HITS - 8
MOST HOME RUNS - 4
MOST STOLEN BASES - 7

WOMEN'S COLLEGE SOFTBALL - CAREER
MOST VICTORIES BY A PITCHER - 151
MOST SHUTOUTS BY A PITCHER - 94
MOST RBIs - 328
MOST CONSECUTIVE HITS - 10
MOST CONSECUTIVE GAMES
HITTING STREAK - 43

MEN'S PROFESSIONAL BOXING
MOST TITLES - 4
MOST TITLE BOUTS - 37
LONGEST CHAMPION REIGN - 11yrs
LONGEST UNBEATEN - 16yrs 8mths 11s
A TOTAL OF 49 FIGHTS
MOST CAREER KOs - 145
CONSECUTIVE CAREER WINS - 49

MEN'S PROFESSIONAL SURFING
MOST CAREER CHAMPIONSHIPS - 6
WOMEN'S PROFESSIONAL SURFING
MOST CAREER CHAMPIONSHIPS - 6

SIT-UPS
1 hour - 8555

MEN'S PROFESSIONAL GOLF
LONGEST CARRY WITH A DRIVE
ON THE FLY - 408yds
MOST U.S. MASTERS TITLES - 6
CAREER WINS - 82
CAREER MAJORS WINS - 18

SKATEBOARDING
HIGHEST OLLIE - 44.5 in
LONGEST RAMP JUMP - 79 ft
FASTEST SPEED STANDING - 62.55mph
HIGHEST AIR - 7ft 8in

MEN'S CYCLING
SPRINT - 10.129
INDIVIDUAL PURSUIT - 4:15.165
1km TIME TRIAL - 1:00.711

WOMEN'S CYCLING
SPRINT - 11.21
INDIVIDUAL PURSUIT - 3:24.537
500m TIME TRIAL - 33.952

MEN'S SHOOTING
10m RUNNING TARGET - 590
25m RAPID FIRE PISTOL - 596
50m PISTOL - 666.4
50m FREE RIFLE 3 POSITIONS - 1275.1

WOMEN'S SHOOTING
10m AIR PISTOL - 490.1
10m AIR RIFLE - 502.0
TRAP - 93
50m RIFLE 3 POSITIONS - 686.1
SKEET - 98

MEN'S SPEED SKATING - EVENT
500m - 34.42
1000m - 1:07.18
1500m - 1:43.95
5000m - 6:14.66
10000m - 12:58.92

WOMEN'S SPEED SKATING - EVENT
500m - 37.30
1000m - 1:13.83
1500m - 1:54.02
5000m - 3:57.70
10000m - 6:46.91

MEN'S WEIGHTLIFTING - EVENT
56kg - 305.0
62kg - 325.0
69kg - 357.5
77kg - 375.0

WOMEN'S WEIGHTLIFTING - EVENT
48kg - 210.0
53kg - 225.0
58kg - 237.5
63kg - 242.5
69kg - 275.0
75kg - 272.5

MEN'S TEAM ROWING
LONGEST CONTINUAL - 1010hrs 34min

MARATHON MEN'S ROWING - 24hrs
INDIVIDUAL HEAVYWEIGHT - 307,683m
INDIVIDUAL LIGHTWEIGHT - 302,008m

MARATHON ROWING LARGE TEAM - 24hrs
WOMEN - 413,549m
MEN - 497,972m
MIXED - 480,197m
MIXED, JUNIORS - 410,018m

MARATHON ROWING SMALL TEAM - 24hrs
WOMEN - 367,872m
MEN - 438,694m
MIXED - 426,635m
MEN, JUNIORS - 348,370m

ROPE SKIPPING
NON-STOP - 31:46.48
1 MINUTE - 425
1 HOUR - 16,107
CONSECUTIVE TIGHTROPE SKIPS - 1250

MEN'S SHORT TRACK SKATING
500m - 41.184
1000m - 1:24.674
1500m - 2:10.639

WOMEN'S SHORT TRACK SKATING
500m - 43.671
1000m - 1:31.191
1500m - 2:18.861

MEN'S SKIING
HIGHEST RECORDED SPEED - 154.165mph

MEN'S COLLEGE LACROSSE - GAME
MOST POINTS - 14
MOST GOALS - 10
MOST ASSISTS - 12
MOST SAVES BY A GOALIE - 38
MOST GOALS SCORED BY A TEAM - 38
MOST CONSECUTIVE VICTORIES - 42
MOST CONSECUTIVE SEASONS WON - 33

ICE SKATING SPINS - CONTINUOUS
MOST UPRIGHT ON 1 FOOT - 115

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TECHNICAL SUMMARY OF WINNING LIFTS BY KENDRICK FARRIS

By Ronald Byrd, PhD, Professor,
Department of Kinesiology and
Health Science, Louisiana State
University in Shreveport

2006 USA Weightlifting National Championships

The USA Weightlifting Development Center at Louisiana State University in Shreveport (LSUS) was established in 1997 to identify and develop talent in young boys and girls. Equipment was supplied by USA Weightlifting and LSUS assumed subsequent financial support. Grants from the USOC and the Louisiana Board of Regents allowed the purchase of a V-Scope, force plates, and assorted video equipment as well as providing a graduate assistant for data acquisition and analysis. A series of subsequent graduate assistant coaches were funded by LSUS and two technical assistants have been provided by Universiti Malaya.

One of the first young boys to enter the program was Kendrick Farris, an Olympic hopeful who won the 85kg gold at the 2005 and 2006 National Championships and at the 2006 National Junior Championships, and was judged the outstanding male lifter in all three meets. Kendrick's development has been marked by continuous application of the sciences of exercise physiology and biomechanics. Bar trajectories, velocities, acceleration, and power have been monitored in training and competition by use of the V-Scope while more qualitative analysis was done regularly through use of digital video.



The purpose of this paper was to present a technical summary of the lifts of Kendrick Farris at the 2006 USA Weightlifting National Championships as an illustration of the success of a scientific approach to USA Weightlifting's talent identification and development program at LSU in Shreveport.

DATA COLLECTION AND ANALYSIS

A V-Scope interfaced to a Gateway laptop computer was used to track the left end of the bar during lifts. This instrument uses infrared and ultrasound waves to triangulate the bar path and provide immediate information on trajectory, acceleration, velocity, and other parameters through sophisticated software (6). A JVC digital camera was set up to view performance with the camera lens being oriented toward the general line of the bar. This side view was obtained to determine whether it could be judged that both ends of the bar would have described a similar trajectory with respect to the x-axis (forward-backward direction). In cases where this is not so, the trajectories obtained by use of the V-Scope would be misleading. However, y-axis velocities and accelerations as well as derived values for other vertical parameters would be valid unless there was a disastrous differential in vertical movement between the ends of the bar. In that event, it would be quite obvious that the data would then be worthless. The magnitude of end-of-bar mean differences at the 2001 World Team Trials (2) indicate only small variations in vertical parameters. For example, maximal vertical barbell velocity varied from right to left by 0.003 m/sec (.16%) and maximal vertical barbell height was different by 1.8 cm (1.46%). On the other hand, mean horizontal axis measures that are important in assessing barbell trajectories

showed more variation. The ends of the barbell at the knee, thigh, and at fixation varied by 1.3, 2.8, and 7.9 cm respectively, supporting our use of the camera aligned toward the bar's end.

While bar trajectories and velocities were obtained directly from use of V-Scope software, power was calculated according to Garhammer (4) from V-Scope data. Only the vertical work associated with the barbell movement was considered. The work of moving the body's center of mass was not included.

Farris' data on bar trajectories, bar velocities, and power was presented and compared with a small sample of similar data on elite weightlifters from previous research.

RESULTS AND DISCUSSION

Bar trajectories

Snatch. The entire trajectory was toward the lifter, behind an imaginary line drawn vertically from the point of lift-off (Figure 1), a pattern which is increasingly preferred (1,5,7). The difference between the maximum forward horizontal position and the horizontal component at the catch defines the degree of loop and that of Farris was 8 cm, slightly less than the 9 cm exhibited by the strongest group (kg lifted/kg body weight >1.8) in a sample of elite weightlifters (7). This is important because a loop that is excessive can challenge control and is often responsible for missed lifts.

Figure 1. V-Scope page two: Snatch (depiction of plate at maximum vertical velocity)

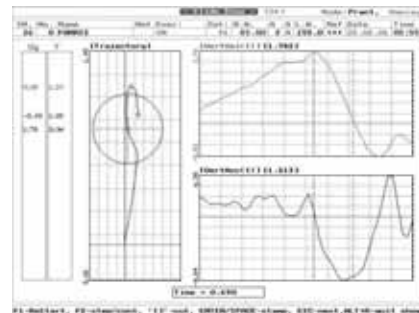
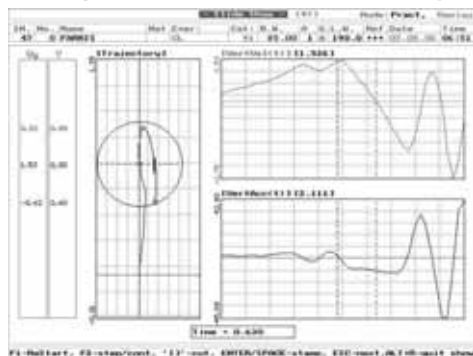


Figure 2. V-Scope, page two: Clean (depiction of plate at maximum vertical velocity)



Clean. As with the snatch, the trajectory of the clean was behind the imaginary vertical from the starting point except for the beginning of the loop that occurred just after the second pull, a period during which the bar moved directly over the point of lift-off (Figure 2). The only major difference between horizontal components of Farris' snatch and his clean was in the first pull (Table 1). It seems logical that if an athlete can maximize neuromuscular similarities of the two tasks then more consistency in lifts should follow. A case in point is that the horizontal deviation of Farris' clean loop was of the same magnitude as in his snatch, an occurrence that would standardize the horizontal momentum that must be controlled in the catch.

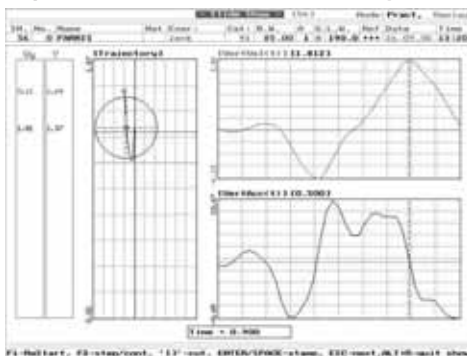
Table 1. Comparison of critical points in bar trajectories.*

	1st pull	2nd pull	Peak	Catch
155 kg snatch	+8cm	+1cm	+4cm	+9cm
190 kg clean	+3cm	0cm	+2cm	+8cm

*Positive values indicate points deviating toward the lifter from an imaginary vertical line over the lift-off position.

Jerk. While jerk trajectories have not been as extensively examined as is the case for the snatch and clean, one would expect that the general principle of limiting horizontal displacement would apply. Grabe and Widule (3) reported that better lifters fixed the bar toward the rear, but the degree was not reported. In the 2006 USA Weightlifting National Championships, three of the four male athletes with Sinclair ratings closest to Farris exhibited this pattern, with backward deviations of 3, 7, and 7 cm. The fourth had a forward movement of 2 cm, while in contrast that of Farris was 8 cm forward (Figure 3 and Table 2). This certainly presents a challenge in controlling the horizontal momentum of the bar, one

Figure 3. V-Scope, page two: Jerk (depiction of plate at maximum vertical velocity)



which Farris failed to meet on his second jerk, losing the bar forward. While his trajectories in the snatch and clean might be optimal, this consistent forward pattern in the jerk, combined with a slightly forward trunk inclination when the bar peaks, has caused some to criticize his technique in the jerk. Takano (8) recommends vertical alignment of the bar, ears, shoulders, hips, and ankles at lockout and Farris certainly violates this principle.

Bar velocities

Snatch. Farris' maximal vertical barbell velocity was 1.78 m/s (Figure 1), very close to the 1.82 m/s for Garhammer's (4) 81.6 kg Olympic gold medalist who was snatching the same weight (155kg). The mean for the left end of the bar, successful lifts, of Crawley, Smith, and Cioroslan (2) was 1.89 m/s, but their data included a mix of 1st, 2nd, and 3rd lifts. It is common that the maximal velocity drops as the lifter moves to heavier weights, so the value for Farris is consistent with expectations. His vertical velocity at the end of the 1st pull was 1.39 m/s, 78% of the maximal attained velocity that was obtained in the 2nd pull. Comparable values for Garhammer's (4) gold medalist were 1.33 m/s, 73% of maximum 2nd pull velocity. This was no anomaly for Farris, for his successful first snatch lift yielded an 82% ratio (1.55 m/s / 1.90 m/s). Crawley et al. (2) noted that when the 1st pull velocity deviates from about 60% of the maximal barbell velocity, either faster or slower, failed lifts are likely. In the lift depicted in Figure 1, there was a drop in acceleration during the transition phase, but there was never a negative acceleration as described by Crawley et al. (2) for some lifters.

Clean. The maximal bar velocity during the 2nd pull of the clean was 1.53 m/s, again

Table 2. Horizontal deviations of the bar in the jerk, top male weightlifters at the 2006 USA Weightlifting National Championships.

	Sinclair	Rack	Dip	At max V	Peak
Farris	411	0	-2	-6	-8
Ukpong	406	0	-1	-3	-2
Vaughn	403	0	0	+1	+3
Burgener	400	0	-1	+1	+7
Bruce	396	0	-2	0	+7

*Positive value, toward the lifter; negative value, away

remarkably close to Garhammer's (4) 1.54 m/s for a 200 kg lift. While Garhammer did not report the 1st pull velocity for this particular athlete, his average for all other weight classes was 70% of the 1st pull velocity (range, 61% to 75%) as compared to 88% for Farris. Thus, as with the snatch, Farris' 1st pull velocity in the clean is closer to the 2nd pull velocity than would be expected. One can look at this in two ways. It might be criticized as a fault since it deviates seriously from the norm, but since he apparently controls this "excess" velocity, it could also be that being able to take advantage of the barbell's extra momentum is one key to his success. On the other hand, some of this momentum is lost during the period of negative acceleration in the transition between 1st and 2nd pulls (Figure 2) and this pattern was seen in all of the top five male weightlifters at the 2006 Nationals. Crawley et al. (2) address this point in a paper dealing with the snatch, noting that many coaches prefer a pattern in which reduction in velocity during transition is minimized.

Jerk. Farris' maximal bar velocity during the jerk was 1.81 m/s as compared to



the 1.54 m/s of Garhammer's 81.6 kg lifter. However, the mean jerk velocity for Garhammer's Olympic gold medalists in other weight classes was 1.79 m/s, very close to the value for Farris.

Power

Snatch. Farris' average power for the 155kg lift was 1642W, slightly higher than the value of 1541W reported by Baumann et al. (1988) for a 157kg snatch at the 1985 World Championships and between the 1487 and 1583W reported by Garhammer (1980) for two 82.5 kg weightlifters. Peak power, measured through the second pull, for Farris was 1756W, between the 1719 and 1839W of Garhammer's 82.5kg lifters. It is clear that power developed during Farris' snatch is in line with previous data of similar sized weightlifters snatching similar weights.

Clean. Garhammer (1980) commented on the fact that snatch and clean power for a given weightlifter will exhibit "near equivalence" because of the mechanical similarities and same muscle groups involved in the two lifts. This held true for Farris, with average power of 1696W and peak power of 1845W in a 190kg clean, similar to the values generated during his 155kg snatch. Garhammer's values for an 82.5kg weightlifter were 1512 and 1747W respectively, again in close agreement with Farris' data.

Jerk. Garhammer (1980) provided no data on power developed on the barbell during the jerk, but comparison of Farris' 1655W value for the snatch with the other top Sinclair rated lifters at the 2006 Nationals is interesting. Calculations revealed: Upkong (190kg jerk), 1951W; Burgener (200kg jerk), 1867W; Bruce (172kg jerk), 1686W; and Vaughn (181kg jerk), 1577W. This should be considered in the context of the bar trajectory and inclined trunk previously discussed. While Farris' bar velocity in the jerk is quite good, it might be that slightly faulty mechanics might possibly impose a limitation on jerk power and thereby interfere with his achieving up to potential.

SUMMARY AND CONCLUSIONS

Kendrick Farris' development as a weightlifter speaks for itself and this technical report is supportive, indicating that his mechanics are certainly comparable to those of elite weightlifters. The mild criticism with respect to the jerk should

be taken in the context of his outstanding performances, touched on briefly in the introduction.

CONCLUDING COMMENTS

If Farris' successes were the only supporting data, one might question whether the USA Weightlifting Development Center at LSUS has achieved its goals related to talent identification and development. However, Cody Gibbs has competed on three Junior World Teams and four other lifters from the Program have been on international teams. And while outside the realm of talent identification, the Center is attracting weightlifters from other states. Most recent examples are Aaron Adams (2006 62kg National Champion) and Sean Hutchinson (2005 56kg American Open silver medalist) who now train at LSUS.

The USOC, USA Weightlifting, and LSUS all deserve kudos for their respective parts in this movement toward talent identification and development, a far overdue endeavor to move the USA toward greater international success. Playing a key role has been Coach Kyle Pierce who was recently recognized by the USOC as the recipient of the 2005 'Doc' Counselman Science in Coaching Award. While Dr. Pierce would recognize a host of exercise scientists and USOC/USA Weightlifting individuals as being important in the success of the Center, his science-based procedures that have led to the development of Kendrick Farris and others at the Center were probably influenced most by the extensive research of John Garhammer and Mike Stone who must be recognized for the part they have played in this success story.

REFERENCES

1. Baumann, W., Gross, V., Quade, K., Galbierz, P., and Schwirtz, A. The snatch technique of world class weightlifters at the 1985 World Championships. *International Journal of Sport Biomechanics* 1988; 4, 68-89.
2. Crawley, J., Smith, S., Cioroslan, D. (2001) A technical summary of selected snatch lifts at the 2001 World Team Trials. *USA Weightlifting* 2001; 19(3), 21-26.
3. Grabe, S. and Widule, C. Comparative biomechanics of the jerk in olympic weightlifting. *Research Quarterly for Exercise and Sport* 1988; 59(1), 1-8.
4. Garhammer, J. Power production by Olympic weightlifters. *Medicine and Science in Sports and Exercise* 1980; 12(1), 54-60.
5. Isaka, T., Okada, J., and Funato, K. Kinematic analysis of the barbell during the snatch movement of elite Asian weightlifters. *Journal of Applied Biomechanics* 1996; 12, 508-516.
6. Lipman Electronic Engineering Ltd. 14 Raoul Wallenberg, Rmat Hahayal, Israel.
7. Stone, M., O'Bryant, H., Williams, F., Johnson, R., and Pierce, K. (1998) Analysis of bar paths during the snatch in elite male weightlifters". *Strength and Conditioning* 1998; 12, 30-38.
8. Takano, B. (1993) Coaching optimal technique in the snatch and the clean and jerk – Part III". *National Strength and Conditioning Association Journal* 1993; 15(1), 43-45. ♦

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BLOOD TESTING

USADA Update

Anti-Doping Program to Include Expanded Blood Testing

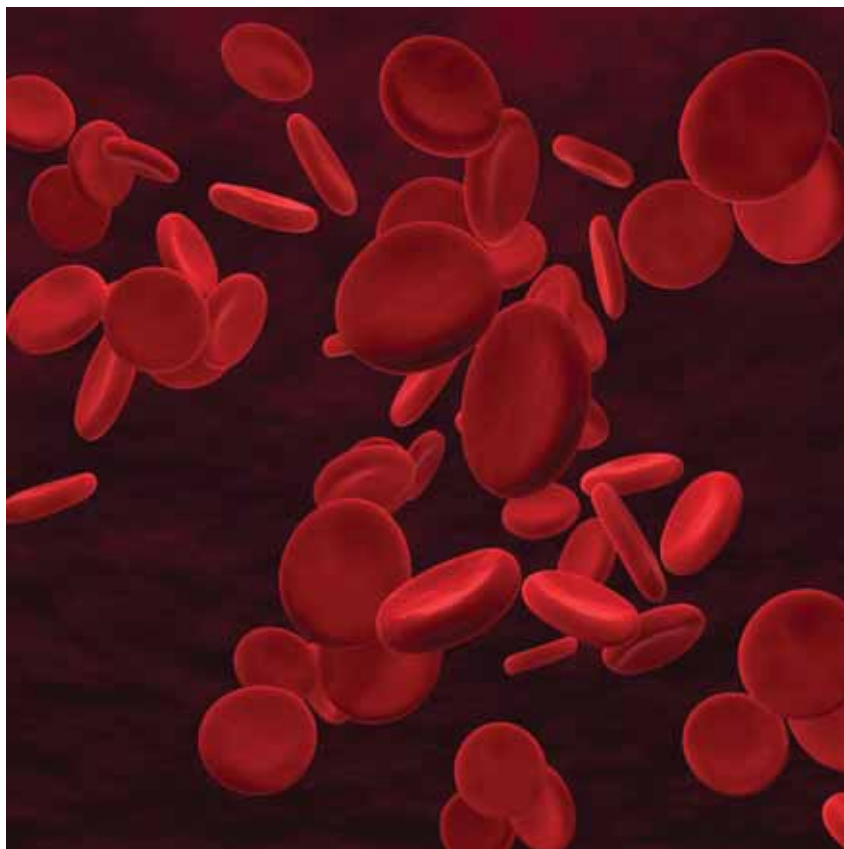
In 2008, USADA's testing methods will include an increase in blood sample collection. The drive behind the blood testing program is to serve as an additional component for protecting clean athletes and leveling the playing field. The expanded blood testing efforts will be implemented in phases. Weightlifting athletes and athlete support personnel will receive more detailed information as 2008 approaches.

The blood testing procedure is similar to a basic blood test at your family doctor's office, and USADA will only be using certified phlebotomists (blood collection officers) to perform the blood sample collections. Athletes will typically have the option of having the blood sample taken from the inside elbow crease (the antecubital space), which is standard for drawing blood, or from the back of the hand. The amount of blood drawn for both tests combined is minimal, totaling 9-mL (just over one-half of a tablespoon) and would not negatively impact a normal, healthy person.

Blood sample collections will be used in two types of analysis:

- Blood testing to detect specific hormones and related substances and products used in the enhancement of oxygen transfer which urine tests cannot detect.
- To create individual profiles for athletes' blood parameters. These parameters include hemoglobin/hematocrit levels (the number of red blood cells present) and a reticulocyte count (young, immature red blood cells).

Blood testing is a critical step in preserving the integrity of sport and combating doping. It is also one more way that USADA can help



clean athletes distinguish themselves from those athletes who choose to cheat. USADA will continue to provide information to you as 2008 approaches. For additional facts

regarding the blood testing program, you may contact USADA at usada@usada.org. ♦

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NATIONAL SCHOOL AGE CHAMPIONSHIP HIGHLIGHTS

By Andy Tysz,
NMU Resident Coach



This year's National School Age Championships were held in Springfield, Missouri. Many thanks to Co-meet directors Brandon Ezell and Scott Johnson and

their staff who hosted a first-rate event that only mother-nature could delay. I am referring, of course, to the tornado alert issued throughout the hotel during the mid-day 14-15 year old boys 62/69kg class. Kudos to Peter

Musa for his sustained focus and a 6 for 6 performance during much ado. We had several other 6 for 6 performances, as well. A total of 34 athletes out of 207 competitors accomplished



his own previous record by one kilo. He then went on to achieve success with his next two attempts with 131 kg. and 134 kg, garnering two more records. After an uneventful break (no tornados this session), Caleb's opening clean and jerk at 155 was good enough to secure a victory in the class. His next attempt at 163 set his final record of the day with a total of 297 kg. Caleb went on to take 171 kg. for a third to make it a clean sweep of ownership for all the class records, but missed racking the clean. Caleb is now the proud owner of the Schoolage snatch and total records for the 105+ class. Overall, an excellent day for Caleb!

Hassle Free Weightlifting had the greatest success out of all the teams, capturing two age group titles (14-15 and 16-17 boys) and the Overall Boys championship. Team Vermont took the Girls Overall title with Charleston Weightlifting garnering two age group titles (under 13 boys and 14-15 girls) and Team Georgia taking the girls 16-17 age group.

Individual congratulations go out to Under 13 Maria Fruechte and Darren Barnes, 14-15 year old Kari Davis and Peter Musa, and finally 16-17 year old Michelle Glasgow and Mathew Fraser for earning best lifter awards for their respective categories.

The highlight of the competition was Super Heavyweight class winner Caleb Ward. Caleb set four Schoolage records as a result of his efforts. He opened the competition with a successful 128 kg snatch, surpassing

his own previous record by one kilo. He then went on to achieve success with his next two attempts with 131 kg. and 134 kg, garnering two more records. After an uneventful break (no tornados this session), Caleb's opening clean and jerk at 155 was good enough to secure a victory in the class. His next attempt at 163 set his final record of the day with a total of 297 kg. Caleb went on to take 171 kg. for a third to make it a clean sweep of ownership for all the class records, but missed racking the clean. Caleb is now the proud owner of the Schoolage snatch and total records for the 105+ class. Overall, an excellent day for Caleb!

For the 2007 National School Age Championships results please visit www.usaweighting.org. ♦



NATIONAL SCHOOL AGE CHAMPIONSHIP



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New Arrivals



CLUB COACH FEATURE- QUESTION & ANSWER



Tom Bennett and his two athletes, Samantha Turnbull & Stephanie Wheeler at the Sicily Trophy Tournament

Club: Team Florida- Volusia County

Coach: Thomas Bennett

How did you get started coaching weightlifting?

I started out lifting in high school for our weightlifting team, then decided to compete in Olympic lifting. After a short time out at the OTC I came home and started training at my old high school, I found myself helping the younger athletes with technique more than lifting myself.

From that point I found myself coaching more and lifting less. I am a much better coach than athlete, in my opinion.

How long have you been coaching? How long has the club been around?

I started 10 years ago, when I was 18, mainly helping with technique. I started training my first Olympic athlete 2 years later (Jessica Fides).

As many people know, Team Florida disbanded last year. Team Florida Volusia County is not quite one year old; however, we were all members of Team Florida which was founded by Coach Bill McDaniels in the early 90's.

Tell us a little bit about your club and your facility.

My club is based out of our Spruce Creek High School, were I teach weightlifting as a P.E. class 6 periods a day. We have a very simple weight room equipped with 10 platforms and 10 power racks on one half of the room, and 10 benches on the other half and several tons of weights. My club consists of high school lifters who desire to compete all year round as well as several athletes who have graduated and continue to compete. There are a few athletes from other local high schools who are our rivals



Tom Bennett's team at the 2007 National Juniors

for H.S. lifting but are team mates for Olympic competition. There are also a few athletes who are away at college who continue to train at The University of Florida.

How many athletes do you train now?

I train between 20 and 30 Olympic lifters and between 90 to 110 lifters that compete for the High School team.

Give an example of a typical workout. What area of training do you emphasize the most?

In a basic training phase we will concentrate on one competition lift per day. We train Monday thru Friday squatting 3 days a week, doing various types of pulls several times a week, and a lot of upper body usually on Thursday. I put a lot of emphasis on total body training to help reduce injuries.

Give some insight on your coaching philosophy/methodology.

I feel it is my job as a coach to help develop well rounded young men and women. I hold my athletes to a high standard. I do not judge my athletes by their success in weight lifting but rather how hard they work and how they carry themselves day to day. I would rather surround myself with good people and never win a single championship then condone stupid behavior just because they are talented athletes. One day soon the athletes will not be able to lift but the qualities they learned in my gym will hopefully follow them forever. If not, then I need to do a better job or be a better example.

Give us some background on your club's past success.

The Team Florida Volusia County girl's team won its first National Junior championship this year. Prior to that, our athletes were always a big part of the many championships won by Team Florida. We have had athlete on international teams for several consecutive years. This trend started with Jessica Fides going to Mexico City back in 2001. Since then Samantha Turnbull, Stephanie Wheeler, Leigha Nave, Hala Fattouh and Heather Wolfe have all repre-

sented Team USA in International competition.

Our club's success has a lot to do with the success of our High school team, the men's team has won 24 state championships out of the last 35 years and the women's team has not lost a meet in 10 years.

What do you enjoy the most about coaching? What do you enjoy the least about coaching?

I love working with the athletes who truly have a passion to improve themselves. I love seeing athletes work hard at something without being told they have to. I love coaching in competition, when it's down to the wire and just two lifters battling out and all the strategies that go on behind the curtains. It can be a big rush.

I don't like it when an athlete bombs out. I tend to question myself and wonder if I did not prepare them well enough.

What age do you like to start your athletes and do you have to do any recruiting?

I get athletes when they start High School, so usually around 14 years old. I do a lot of recruiting within the school. I have found that my classes tend to be the easiest way to recruit.

Who is/was your favorite lifter of all time?

All the lifters of Team Florida Volusia County.

What do you see for the future of your club? Do you have any specific goals in mind or any team titles?

I like to take things one step at time, so my goals are to work with the athletes that I currently have, win any titles within our reach, and help my athletes qualify for as many international teams as they can.

What has been the highlight of your coaching career thus far?

Receiving the Developmental Coach of the Year last year from the USOC.

What advice do you have for the young weightlifting coaches?

Be your own coach; don't do something just because you saw someone else do it. Understand everything that you teach. ♦



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COMPETITIONS, CLINICS & EVENTS

For local competition results, please visit our website @ www.usaweighting.org

REGIONAL & LOCAL EVENTS

2007

Dec 7 Union Christmas Invitational
 Dec 8 Rick James Memorial Meet
 Dec 8 Southern Minnesota HS Open
 Dec 8 The Big Cats Schoolage/Junior Meet
 Dec 8 IronMind Weightlifting Championships
 Dec 8 Team Montana Fall Open
 Dec 8 Hawkeye Qualifier
 Dec 15 Kirkwood Winter Challenge
 Dec 15 Georgia/Alabama LWC Meet
 Dec 15 Kennedy's Gym Christmas Meet
 Dec 15-16 Werksan Barbell's HS WL Championships
 Dec 16 Team South Buffalo Winter Classic
 Dec 29 Onaga Christmas Open

2008

Jan 5 Baltimore Open Championships
 Jan 5 Toledo WL Winter Development Meet
 Jan 12 Hillbilly Open
 Jan 12 Twin City Masters & Invitational
 Jan 12-13 Texas State Championships
 Jan 19 Battle of the Warriors Collegiate & High School Meet
 Jan 27 Pittsburgh Open
 Feb 3 NJ State H.S. WL Challenge & Masters Competition
 Mar 29 Minnesota LWC Championships
 June 28 Star of the North Games

Regional & Local Events

Location

Union Middle School; Sandy, UT
 Wichita Falls Athletic Club; Wichita Falls, TX
 Cannon Falls HS; Cannon Falls, MN
 Lakeville South High School; Lakeville, MN
 IronWorks Gym; Creswell, OR
 CrossFit Missoula; Missoula, MT
 U. of Iowa Track Weightroom; Iowa City, IA
 Nipher Middle School; Kirkwood, MO
 Anderson/Cohen Weightlifting Center; Savannah, GA
 Kennedy's Gym; Morgantown, PA
 Duke Energy Center; Cincinnati, OH
 Steel Mill Gym; Lackawanna, NY
 Onaga WL Club; Onaga, KS

Contact

Dave Turner
 Stef Bradford
 Matt Maki
 Bob Currie
 Tom Hirtz
 Clay Reed
 Greg Kustra
 Benn Overkamp
 Howard Cohen
 Pat Kennedy
 Chris Cleary
 Steven Titus
 Robert Gilsdorf

Telephone

801-412-2200
 940-447-4807
 507-263-4925
 952-232-3478
 541-953-7946
 406-543-3683
 712-792-2412
 314-584-9480
 512-254-8072
 610-286-7698
 513-259-6114
 716-997-3041
 785-889-4363

Contact

Tim Guarino
 Todd Baden
 Scott Johnson
 Roger Sadecki
 Tracy Steinberg
 Michael Majerowicz
 Regis Becker
 Robert Herman
 Roger Sadecki
 Roger Sadecki

Telephone

410-828-9745
 419-304-4627
 417-820-5010
 651-490-0310
 512-293-8705
 773-206-8513
 412-276-7998
 908-927-9879
 651-490-0310
 651-490-0310

INTERNATIONAL EVENTS

2007

Nov 24-25 Quebec Junior Championships

2008

Jan 20-24 Beijing Olympic Test Event
 Mar 15-22 Pan American Championships (competition Mar 17-22)
 June 11-20 Junior World Championships
 August 9-19 Olympic Games-Weightlifting events

International Events

Dates/Locations subject to change

Lachute, Quebec, CANADA

Dates/Locations subject to change

Beijing, CHINA
 Callao, PERU
 Cali, COLOMBIA
 Beijing, CHINA

Contact

National Office

Contact

National Office
 National Office
 National Office
 National Office

Telephone

719-866-4508

Telephone

719-866-4508
 719-866-4508
 719-866-4508
 719-866-4508

NATIONAL EVENTS

2007

Nov 30-Dec 2

Dec 26-Jan 2

2008

Feb 8-10

Feb 29-March 2

March 3

April 4-6

April 11-13

May 16-17

June 20-22

Dec 5-7

National Competitions & Camps

American Open

Rudy Sablo 2012 Olympic Development Camp

National Competitions & Camps

National Junior Championships

National Championships

Board of Governors

National Masters

National Collegiate Championships

Olympic Team Trials

National School Age Championships

American Open

Dates/Locations subject to change

Birmingham Jefferson Convention Complex; Birmingham, AL

United States Olympic Training Center; Colorado Springs, CO

Dates/Locations subject to change

Chattanooga, TN

Columbus, OH

Columbus, OH

Anderson/Cohen WL Center; Savannah, GA

Reno, NV

Atlanta, GA

Disney World, FL

Chandler, AZ

Contact

Les Simonton

National Office

Contact

Steve Fauer

Megan Tornstrom DeFourny

Mark Cannella

National Office

Howard Cohen

National Office

National Office

National Office

Joe Micela

Telephone

334-741-7080

719-866-4508

Telephone

423-870-4060

614-832-2757

719-866-4508

912-354-8072

719-866-4508

719-866-4508

719-866-4508

480-813-5477

COACHING CALENDAR

2007

Dec 8-9, 2007

Dec 8-9, 2007

Dec 8-9, 2007

Dec 14-15, 2007

Dec 14-16, 2007

Dec 15-16, 2007

2008

Jan 6-7, 2008

Jan 12-13, 2008

Mar 29-30, 2008

April 5-6, 2008

June 5-7, 2008

July 8-9, 2008

Nov 20-22, 2008

2007

Dec 1-2, 2007

Dec 8-9, 2007

2008

Jan 18-20, 2008

Feb 22-23, 2008

Mar 29-30, 2008

June or July, 2008 (TBD)

June or July, 2008 (TBD)

Jan 8-12, 2008

Coaching Course Calendar

Sports Performance

Sports Performance

Sports Performance

Sports Performance

Sports Performance

Sports Performance

Coaching Course Calendar

Sports Performance (tandem to the NSCA Sport-Specific Conference)

Sports Performance

Sports Performance

Sports Performance

Sports Performance

Sports Performance (in conjunction with the NSCA National Conference)

Sports Performance

Coaching Course Calendar

Club coach

Club Coach

Coaching Course Calendar

Club Coach

Club Coach

Club Coach

Club Coach

Senior Coach

Regional Coach

Location

West Chester, PA

Crown Point, IN

Rohmert Park, CA

Edmond, OK

Omaha, NE

Ithaca, NY

Location

Anaheim, CA

Winston-Salem, NC

Fairfield, OH

Milwaukee, WI

OTC, Colorado Springs, CO

Las Vegas, NV

OTC, Colorado Springs, CO

Location

LaCrosse, WI

Rohmert Park, CA

Location

Denmark, WI

Hummelstown, PA

Fairfield, OH

OTC, Colorado Springs, CO

OTC, Colorado Springs, CO

OTC, Colorado Springs, CO

Contact

Leo Totten

Grant Gardis

Jim Schmitz

Tom Cross

Coordinator: David Noonan

Instructor: Anna Martin

David Miller

Contact

Leo Totten, Chris Feder, Mike Favre

Leo Totten

Mike Conroy

Mike Gattone

Mike Favre

Leo Totten, Chris Feder, Mike Favre and TBD

(TBD)

Contact

Scott Safe

Jim Schmitz

Contact

David Gremore

Michael Piersol

Mike Conroy

Mike Favre and TBD

(TBD)

Drs. Kyle Pierce & Michael Reed

Telephone

717-359-5317

219-614-0822

415-595-8067

405-715-6519

402-250-8381

443-413-7866

Telephone

906-227-1748

717-515-0305

513-858-2899

847-309-4809

719-866-4508

906-227-1748

719-866-4508

Telephone

651-380-8798

415-595-8067

Telephone

920-863-6888

610-374-1404

513-858-2899

719-866-4508

719-866-4508

719-866-4508



USA Weightlifting, Inc.
 1 Olympic Plaza
 Colorado Springs, CO 80909

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